

Morton County, KS

Risk-assessment baseline packet

County FIPS: 20129 Release: 2026-10 Data as of: 2026-09-30 Storm Events data through: 2026-06-30

Hazard Plain is an independent product built from public federal data. It is not a FEMA document and is not reviewed or endorsed by FEMA or any state agency.

Summary

Plan status as of 2026-09-30: Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible. Plan: Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here, approved 2025-08-06 by FEMA; not yet adopted here.

Update: FEMA tracker shows a plan approvable pending adoption.

Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Drought (\$2,417,980 a year), Tornado (\$316,393) and Inland Flooding (\$292,833).

The tables that follow are organized by the items of FEMA's Local Mitigation Plan Review Tool, Element B (B1-a to B2-c); each heading says which item its tables support.

TERMS USED

EAL: expected annual loss: FEMA's modeled average yearly loss from a hazard.

NRI: FEMA's National Risk Index (version 1.20, December 2025).

NFIP: National Flood Insurance Program.

RL, SRL: repetitive loss and severe repetitive loss: flood-insured properties with repeated claims (definitions in B2-c).

FMA, HMGP: Flood Mitigation Assistance and Hazard Mitigation Grant Program, FEMA mitigation grants.

PA: FEMA Public Assistance: disaster aid to governments and some nonprofits.

Zone-level: NOAA logged the event for a National Weather Service forecast zone, which may include parts of neighboring counties.

County-coded: NOAA logged the event to this county.

FIPS: the federal code for a place; 20129 is this area.

D0 to D4: U.S. Drought Monitor categories, from abnormally dry (D0) to exceptional drought (D4).

F/EF, EFU: Fujita and Enhanced Fujita tornado ratings; EFU is an unrated tornado.

kt, CONUS: knots (1 kt is about 1.15 mph); the contiguous United States.

CFR: Code of Federal Regulations.

A4-a, E1-a: other items of FEMA's Local Mitigation Plan Review Tool (sources, and changes since the last plan).

Dollars: nominal (as reported, labeled with the year), not adjusted for inflation.

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Plan clock

Status:	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Plan:	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here
Approved:	2025-08-06 by FEMA; not yet adopted here	Expires:	2030-08-05 once adopted
Update underway:	FEMA tracker shows a plan approvable pending adoption		

Not yet eligible: adopt the approved plan.

Not yet eligible: adopt the approved plan.

What changed since your last plan

Not available. Plan 110960 was approved by FEMA on 2025-08-06 but is not yet adopted here, so no since-plan counts are given.

Sources: 1, 2, 4, 6 (numbered list at the end)

Plan status for every jurisdiction listed in this county

Source: 1

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry <i>negative = days since expiry</i>	Update underway	Notes
Morton County	County	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Elkhart city	City	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Richfield city	City	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Rolla city	City	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Elkhart Unified School District 218	School/School District	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Rolla Unified School District 217	School/School District	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Lane Scott Electrical Coop	Electric/Power Authority	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Midwest Energy	Electric/Power Authority	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Tri County EC	Electric/Power Authority	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	Region C Hazard Mitigation Plan (FEMA plan 110960), pending adoption here	2025-08-06 by FEMA; not yet adopted here	2030-08-05 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Wheatland Electric Coop	Electric/Power Authority	Approved, expires 2030-08-05	Region C Hazard Mitigation Plan (FEMA plan 110960)	2025-08-06	2030-08-05	1,405		this jurisdiction approved 2025-12-30

State plan status and tribal plans in this state: see the state page.

Supports FEMA checklist item B1-a: hazard identification

Hazards NRI does not cover (local data needed)

- dam failure (incl. upstream dams)
- levee failure
- flash flood as its own subtype
- ice jams
- debris flows
- erosion (riverine and coastal)
- land subsidence and sinkholes
- expansive soils

The 18 National Risk Index hazards, ranked by expected annual loss (EAL)

Sources: 5, 6

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings modeled dollars per year	EAL agriculture modeled dollars per year	Cost of expected deaths and injuries FEMA's dollar value per year, not property damage	EAL total (see note) modeled dollars per year	Storm Events records, 1996 to 2026-06-30 count	Why this hazard can be left out NRI Not Applicable, no declaration and no Storm Events record since 1996	Storm Events coverage note
1	Drought	Relatively High	Relatively High	n/a	\$2,417,980	n/a	\$2,417,980	3		
2	Tornado	Very Low	Very Low	\$164,661	\$5,023	\$146,710	\$316,393	9		
3	Inland Flooding	Very Low	Very Low	\$292,728	\$1	\$104	\$292,833	9		
4	Wildfire	Relatively Low	Relatively Low	\$283,646	\$1,169	\$7,897	\$292,713	1		
5	Hail	Relatively Low	Relatively Low	\$141,337	\$55,847	\$3,405	\$200,589	312		
6	Cold Wave	Very Low	Relatively Low	\$73	\$88,872	\$97,692	\$186,637	3		
7	Lightning	Very Low	Relatively Low	\$1,682	n/a	\$93,923	\$95,605	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
8	Strong Wind	Very Low	Very Low	\$52,678	\$239	\$34,649	\$87,565	208		Includes 58 High Wind and 8 Strong Wind records (NOAA non-thunderstorm wind types, outside NRI's Strong Wind definition).
9	Winter Weather	Relatively Low	Relatively Low	\$18,353	\$162	\$20,022	\$38,536	62		
10	Earthquake	Very Low	Very Low	\$22,326	n/a	\$6,476	\$28,802			Storm Events does not record earthquakes.
11	Ice Storm	Very Low	Very Low	\$14,078	n/a	\$3,852	\$17,930	5		

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings	EAL agriculture	Cost of expected deaths and injuries	EAL total (see note)	Storm Events records, 1996 to 2026-06-30 count	Why this hazard can be left out <i>NRI Not Applicable, no declaration and no Storm Events record since 1996</i>	Storm Events coverage note
				<i>modeled dollars per year</i>	<i>modeled dollars per year</i>	<i>FEMA's dollar value per year, not property damage</i>	<i>modeled dollars per year</i>			
12	Heat Wave	Very Low	Very Low	\$15	under \$1	\$1,313	\$1,327	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
13	Landslide	Very Low	Very Low	\$1	n/a	under \$1	\$1	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Hurricane	Not Applicable	Not Applicable					0	NRI rates hurricane Not Applicable for this county, and no counted federal declaration for this county names it (EM-3236-KS names it but is not counted as a local occurrence; see B1-d).	No recorded events in Storm Events since 1996 (data through 2026-06-30).

Total = buildings + agriculture + population equivalence; FEMA values each expected death (or 10 injuries) at \$13.7 million (2024 dollars).

NRI risk rating combines expected annual loss with social vulnerability and community resilience; EAL rating rates expected annual loss alone. Both compare this county with all U.S. counties.

Local data needed: state and local lightning and landslide records (Storm Events records these hazards only in part).

Not applicable to this county per NRI, with no federal declaration and no Storm Events record since 1996: avalanche, coastal flooding, tsunami and volcanic activity. That is the evidence for leaving them out of the plan.

The state hazard mitigation plan also lists hazards for this county; FEMA asks the plan to explain any hazard it leaves out.

Supports FEMA checklist item B1-b: hazard location

Affects the whole county (national data give no location within it): Cold Wave, Drought, Hail, Heat Wave, Ice Storm, Lightning, Strong Wind and Winter Weather.

Inland Flooding: The FEMA Flood Insurance Rate Map (FIRM) is the required location source for flooding. See the FEMA Flood Map Service Center (<https://msc.fema.gov>) for this county.

NRI rating of the county's single census tract

Source: 5

Hazard	Census tract <i>NRI risk rating, score 0 to 100</i>
Earthquake	tract 9646 (Relatively Low, 49.0)
Hurricane	no tract has a National Risk Index rating for this hazard
Landslide	tract 9646 (Very Low, 42.0)
Tornado	tract 9646 (Relatively High, 86.1)
Wildfire	tract 9646 (Relatively High, 97.2)

A tract number is the Census tract number (for example 9646 is Census Tract 9646). FEMA's Resilience Analysis and Planning Tool maps the National Risk Index for every tract: <https://www.fema.gov/emergency-managers/practitioners/resilience-analysis-and-planning-tool>

Supports FEMA checklist item B1-c: hazard extent

Extent: scale, observed range and worst recorded event per hazard

Sources: 6, 7

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Cold/Wind Chill, Extreme Cold/Wind Chill	wind chill	3 records, 2000 to 2025 (3 zone-level)	1 day to 3 days (median 3 days); 3 with a recorded value	3 consecutive days, 2025-02-18 to 2025-02-20, zone-level		Countywide (zone-level records).	
Frost/Freeze (outside NRI's Cold Wave definition)	crop damage	0					
Drought	U.S. Drought Monitor scale (D0 to D4)	3 records, 1996 to 2003 (3 zone-level)	1 day to 31 days (median 1 day); 3 with a recorded value	31 days (1 month), 1996-03-01 to 1996-03-31, zone-level		Countywide (zone-level records).	Storm Events enters a drought at D2 or worse east of the Rockies and D3 or worse from the Rockies west (NWS Instruction 10-1605); NRI drought counts D3 and D4 only.
Earthquake	Modified Mercalli (local data)	0					Storm Events does not record earthquakes; the USGS earthquake catalog is the source.

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Hail	hail size (inches)	350 records, 1957 to 2025	0.75 in to 4.5 in (median 1 in); 350 with a recorded value	4.5 in hail, 1998-07-12	Hail, 1996-05-31, \$250,000 property; crops not reported (1996 dollars)	Event records naming jurisdictions in the plan: Richfield city (125 records), Rolla city (79 records), Elkhart city (69 records).	
Excessive Heat, Heat	heat index (in event narratives)	0					
Hurricane, Tropical Storm, Tropical Depression	Saffir-Simpson	0					Storm Events files every zone of a storm's episode under the storm's type; flooding from the storm is filed as Flood or Flash Flood records.
Ice Storm	Sperry-Piltz ice scale (local data)	5 records, 1998 to 2017 (5 zone-level)		No damage reported in 5 records.		Countywide (zone-level records).	
Flash Flood, Flood, Lakeshore Flood	damage and flood days (flood depth: FIRM)	9 records, 1998 to 2018 (2 zone-level)		No damage reported in 9 records.		Event records naming jurisdictions in the plan: Rolla city (5 records), Richfield city (2 records). Zone-level records (2) apply countywide.	Flood depth: see the FEMA Flood Insurance Rate Map. Storm Events damage is often \$0 or blank for floods, major ones included; FEMA Public Assistance by declaration (B1-d) shows which floods cost the most.
Debris Flow	none (count and damage only)	0					
Lightning	annualized frequency (the measure FEMA's Local Mitigation Planning Handbook names)	0					Storm Events lists lightning with damage or casualties.
High Wind and Strong Wind (outside NRI's Strong Wind definition)	wind speed (kt and mph)	66 records, 1996 to 2026 (66 zone-level)	40 kt (46 mph) to 70 kt (81 mph) (median 52 kt (60 mph)); 65 with a recorded value	70 kt (81 mph) measured, High Wind, 2001-04-11; NWS zone KSZ084	High Wind, 2000-12-18, \$800 property; crops not reported (zone total, 2000 dollars)	Countywide (zone-level records).	
Thunderstorm Wind	wind speed (kt and mph)	158 records, 1963 to 2025	50 kt (58 mph) to 87 kt (100 mph) (median 56 kt (64 mph)); 153 with a recorded value	87 kt (100 mph) estimated gust, Thunderstorm Wind, 2022-06-19	Thunderstorm Wind, 1998-08-25, \$50,000 property; crops not reported (1998 dollars)	Event records naming jurisdictions in the plan: Elkhart city (52 records), Richfield city (37 records), Rolla city (14 records).	
Tornado	Enhanced Fujita (Fujita before Feb 2007)	20 records, 1951 to 2016	F/EF0 to F/EF3 (median F/EF1); 19 with a recorded value	F3 tornado, 1972-05-09, 2.7 mi path length (whole path, pre-1996), 400 yd wide, \$25,000 property; crops not recorded (1972 dollars)	Tornado, 1977-05-18, \$2,500,000 property; crops not recorded (1977 dollars)	Event records naming jurisdictions in the plan: Rolla city (6 records), Richfield city (3 records).	Before 1996 a tornado is listed once, under the county where it began, with its whole path's rating and length; from 1996 on, each county lists its own segment. Length is not used to rank tornadoes (see Methods).

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Wildfire	acres burned (local data)	1 record, 2018 (1 zone-level)		No damage reported in 1 record.		Countywide (zone-level records).	
Winter Storm, Heavy Snow, Blizzard, Lake- Effect Snow, Winter Weather, Sleet	none in data (snowfall: local data)	62 records, 1996 to 2026 (62 zone-level)		No damage reported in 62 records.		Countywide (zone-level records).	

In event narratives only (local data needed): wind chill, temperature, heat index, ice thickness, acres burned and snow depth; any physical measure of debris flow and lightning.

Storm Events records are more complete after 1996; before 1996 only Tornado (from 1950), Hail and Thunderstorm Wind (from 1955) exist. Zone-level records from zones that no NWS zone-county file places in this county (mostly before 2020) are not counted here (the Methods page explains the zone matching).

Dollars are nominal (as reported), labeled with the year; not adjusted for inflation.

Supports FEMA checklist item B1-d: previous occurrences

Federal declarations for this county: 8 declarations covering 5 separate hazard incidents counted in this packet (declarations for the same incident count once; non-natural and evacuation-only declarations are not counted).

Plan 110960 was approved by FEMA on 2025-08-06 but is not yet adopted here, so no since-plan counts are given.

Federal disaster declarations for this county

Sources: 1, 2, 3

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance <i>federal share obligated, nominal dollars</i>	Flags	Notes
2022-02-17	2021-12-15	DR-4640-KS	Major disaster	Severe Storms and Straight Line Winds	Strong Wind	no Public Assistance recorded		within last 5 years
2020-03-29	2020-01-20	DR-4504-KS	Major disaster	COVID-19 Pandemic	Non-natural, not counted	none placed in this county by FEMA's record; \$16,404.82 for this declaration is not placed in any county (see the state page)		
2020-03-13	2020-01-20	EM-3481-KS	Emergency	COVID-19	Non-natural, not counted	no Public Assistance recorded		same incident as DR-4504
2017-06-16	2017-04-28	DR-4319-KS	Major disaster	Severe Winter Storm, Snowstorm, Straight-Line Winds, and Flooding	Winter Weather (primary); also designated: Inland Flooding, Strong Wind	\$133,689.39		
2011-07-29	2011-05-19	DR-4010-KS	Major disaster	Severe Storms, Straight-Line Winds, Tornadoes, and Flooding	Inland Flooding; Strong Wind; Tornado	no Public Assistance recorded		
2007-12-12	2007-12-06	EM-3282-KS	Emergency	Severe Winter Storms	Winter Weather	no Public Assistance recorded		
2007-01-07	2006-12-28	DR-1675-KS	Major disaster	Severe Winter Storm	Winter Weather	\$74,493.08		
2005-09-10	2005-09-01	EM-3236-KS	Emergency	Hurricane Katrina Evacuation	Hurricane: evacuation support, not a local hazard event; not counted	no Public Assistance recorded		

County Public Assistance: applicants the FEMA record places in this county, including any state agencies FEMA files there; statewide rows are listed on the state page; federal share obligated, nominal dollars.

Statewide declarations

Source: 2

Declared	Incident began	FEMA number	Type	Title	Mapped hazard
1982-06-28	1982-06-28	DR-663-KS	Major disaster	Severe Storms and Flooding	Inland Flooding
1958-11-06	1958-11-06	DR-88-KS	Major disaster	Floods	Inland Flooding
1957-09-05	1957-09-05	DR-81-KS	Major disaster	Floods	Inland Flooding
1955-05-27	1955-05-27	DR-34-KS	Major disaster	Tornado	Tornado

FEMA recorded these with designated area Statewide and no county, so they are listed on every county page in the state and not counted with county rows. Local data needed: whether each one affected this county.

Public Assistance not placed in any Kansas county: 4 rows, \$183,565.84; listed on the Kansas state page.

Source: 3

Previous occurrences by hazard, with explicit no-event rows

Sources: 2, 6, 7

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval records	In the 12 months before plan approval records	Last 5 years records	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
Cold Wave	3			1	0		1996 to 2026-06-30	
Drought	3			0	0		1996 to 2026-06-30	
Earthquake	0			0	0			Storm Events does not record earthquakes; the USGS earthquake catalog is the source.
Hail	350			21	0		1955 to 2026-06-30	
Heat Wave	0			0	0		1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Hurricane	0			0	0		1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Ice Storm	5			0	0		1996 to 2026-06-30	
Inland Flooding	9			0	2		1996 to 2026-06-30	
Landslide	0			0	0		1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Lightning	0			0	0		1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Strong Wind	224			51	3		1955 to 2026-06-30	Includes 58 High Wind and 8 Strong Wind records.
Tornado	20			0	1		1950 to 2026-06-30	

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval <i>records</i>	In the 12 months before plan approval <i>records</i>	Last 5 years <i>records</i>	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
Wildfire	1			0	0		1996 to 2026-06-30	
Winter Weather	62			9	3		1996 to 2026-06-30	

Notable Storm Events records

Sources: 1, 6, 7

Date	Event type	Magnitude or extent	Damage <i>nominal dollars</i>	Deaths, injuries <i>direct only</i>	Location	Flags	Why listed
2025-02-18	Extreme Cold/Wind Chill		\$0 property; \$0 crops (zone total, 2025 dollars)	0, 0	NWS zone KSZ084 (MORTON), zone-level	within last 5 years	B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill
2022-06-19	Thunderstorm Wind	87 kt (100 mph) estimated gust	damage not reported	0, 0	ROLLA	within last 5 years	B1-c worst recorded: Thunderstorm Wind
2001-04-11	High Wind	70 kt (81 mph) measured	damage not reported	0, 0	NWS zone KSZ084 (MORTON), zone-level		B1-c worst recorded: High Wind and Strong Wind
2001-04-06	Tornado	F2, 6.6 mi within this county, 350 yd wide	\$100,000 property; crops not reported (2001 dollars)	0, 2	ROLLA		deaths or injuries recorded
2000-12-18	High Wind	speed not recorded	\$800 property; crops not reported (zone total, 2000 dollars)	0, 0	NWS zone KSZ084 (MORTON), zone-level		B1-c most damaging: High Wind and Strong Wind
1998-08-25	Thunderstorm Wind	speed not recorded	\$50,000 property; crops not reported (1998 dollars)	0, 0	RICHFIELD		B1-c most damaging: Thunderstorm Wind
1998-07-12	Hail	4.5 in	damage not reported	0, 0	ROLLA		B1-c worst recorded: Hail
1996-05-31	Hail	2.75 in	\$250,000 property; crops not reported (1996 dollars)	0, 0	ROLLA		B1-c most damaging: Hail
1996-03-01	Drought		damage not reported	0, 0	NWS zone KSZ084 (MORTON), zone-level		B1-c worst recorded: Drought
1977-05-18	Tornado	F2, 33.9 mi path length (whole path, pre-1996), 50 yd wide	\$2,500,000 property; crops not recorded (1977 dollars)	0, 0	location not recorded		B1-c most damaging: Tornado
1972-05-09	Tornado	F3, 2.7 mi path length (whole path, pre-1996), 400 yd wide	\$25,000 property; crops not recorded (1972 dollars)	0, 0	location not recorded		B1-c worst recorded: Tornado
1951-06-23	Tornado	no rating recorded, 33 yd wide	\$25,000 property; crops not recorded (1951 dollars)	1, 0	location not recorded		deaths or injuries recorded

The full list is in the Excel file, sheet "B1-d Storm Events history" (677 rows).

Location is the place NOAA recorded, as written in its data; it need not be a jurisdiction in this plan.

Local data needed: state-declared emergencies, from your state emergency management agency (federal data do not include them).

Tribal and special-area declarations in this state are listed on the state page.

Supports FEMA checklist item B1-e: probability of future events

Probability: FEMA annualized frequency and descriptor per hazard

Sources: 5, 6

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area-weighted, so can be fractional)	NRI period	Location	Note
Cold Wave	2.37	event-days per year	about 2.37 days per year	Possible	Storm Events event- days in 2 of 30 years, 1996 to 2025 (6.67%)	45	2005-11-12 to 2024-11-12 (19 years)	countywide	
Drought	142	event-days per year	about 142 days per year	Possible	Storm Events event- days in 2 of 30 years, 1996 to 2025 (6.67%)	3,591	2000 to 2025 (25.25 years; D3 and D4 only)	countywide	
Earthquake	0.000563	annual probability at a location	chance a given location in the county has at least minor-damage shaking in a year: 0.0563%			not shown	modeled	see B1-f	No descriptor (Storm Events does not record earthquakes).
Hail	6.42	events per year	about 6.42 per year	Highly likely	FEMA annualized frequency (modeled)	244.1 (modeled)	1986 to 2023 (38 years)	countywide	
Heat Wave	0.158	event-days per year	about 0.158 days per year		Storm Events event- days in 0 of 30 years, 1996 to 2025 (0%)	1	2005-11-12 to 2024-11-12 (19 years)	countywide	No Storm Events heat wave record, 1996 to 2025
Hurricane		events per year					1851 to 2024 (Atlantic)	see B1-f	Not Applicable in NRI for this county; no descriptor.
Ice Storm	0.283	event-days per year	about 0.283 days per year	Likely	Storm Events event- days in 4 of 30 years, 1996 to 2025 (13.3%)	19	1946-12-31 to 2014-02-12 (67 years)	countywide	
Inland Flooding	0.214	event-days per year	about 0.214 days per year	Likely	Storm Events event- days in 5 of 30 years, 1996 to 2025 (16.7%)	6	1996 to 2023 (28 years)	see B1-f	
Landslide	0.0753	events per year (modeled)	about 1 in 13 years	Possible	FEMA annualized frequency (modeled)	not shown	modeled	see B1-f	
Lightning	42.9	days per year with a strike	about 42.9 days per year	Highly likely	FEMA annualized frequency (modeled)	not shown	1995 to 2023 (29 years; CONUS)	countywide	
Strong Wind	2.75	events per year	about 2.75 per year	Highly likely	FEMA annualized frequency (modeled)	105	1986 to 2023 (38 years)	countywide	
Tornado	0.463	events per year	about 1 in 2 years	Likely	FEMA annualized frequency (modeled)	not shown	1950 to 2023 (EF2+); 1986 to 2023 (EF0-1)	see B1-f	

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area-weighted, so can be fractional)	NRI period	Location	Note
Wildfire	0.00369	annual probability at a location	chance a given location in the county burns in a year: 0.369%	Possible	Storm Events records in 1 of 30 years, 1996 to 2025 (3.33%)	not shown	modeled	see B1-f	
Winter Weather	9.05	event-days per year	about 9.05 days per year	Highly likely	Storm Events event- days in 27 of 30 years, 1996 to 2025 (90%)	172	2005-11-12 to 2024-11-12 (19 years)	countywide	

FEMA annualized frequency (modeled) is the National Risk Index v1.20 (December 2025) estimate of how often a hazard affects this county in a year; it is not recorded events divided by years, and its unit differs by hazard (events, event-days, or days with a lightning strike per year). For earthquake, wildfire, coastal flooding and tsunami the value is the chance (or number of events) at a location in the county, not across the county, so no "1 in N years" is given and the descriptor comes from Storm Events where it has a record (none for earthquake). The Methods page gives each hazard's method, from FEMA's National Risk Index Technical Documentation v1.20.

Where NRI gives event-days, the descriptor comes from the share of years with a Storm Events record; NRI's source records more events, so the two differ.

Descriptor scale used in this packet (defined per unit)

Sources: 5, 6

Unit	Descriptor	Definition
events per year	Highly likely	1 or more per year
events per year	Likely	about once in 1 to 10 years
events per year	Possible	about once in 10 to 100 years
events per year	Unlikely	less than once in 100 years
annual probability	Likely	10% to under 100% chance in a given year
annual probability	Possible	1% to under 10% chance in a given year
annual probability	Unlikely	under 1% chance in a given year
event-days (share of years)	Highly likely	event-days recorded in 90% or more of years
event-days (share of years)	Likely	event-days recorded in 10% to under 90% of years
event-days (share of years)	Possible	event-days recorded in some years but under 10% of years
lightning strike-days	Highly likely	cloud-to-ground strikes on 1 or more days per year

Intensity bands: historical frequency (Storm Events)

Source: 6

Hazard	Band	Years	Events <i>county-coded records</i>	Years in period	Events per year <i>events / years</i>
Hail	1.00-1.99 in	1996 to 2025	153	30	5.1
Hail	2.00 in+	1996 to 2025	14	30	0.467
Thunderstorm Wind (counted as NRI Strong Wind)	50-64 kt	1996 to 2025	119	30	3.97
Thunderstorm Wind (counted as NRI Strong Wind)	65 kt+	1996 to 2025	22	30	0.733
Thunderstorm Wind (counted as NRI Strong Wind)	unmeasured or below 50 kt	1996 to 2025	1	30	0.0333
Tornado	EF0-1	1996 to 2025	8	30	0.267
Tornado	EF2-3	1996 to 2025	1	30	0.0333
Tornado	EF4-5	1996 to 2025	0	30	0
Tornado	unrated (EFU)	1996 to 2025	0	30	0

The bands show how often events of each severity were recorded in this county, to profile how severe events have been (FEMA's probability item asks for the range of intensities).

Hail smaller than 1 inch is not counted: on 2010-01-05 the National Weather Service raised its severe-hail threshold from 3/4 inch to 1 inch, so smaller reports became less common after 2009 (NWS Service Change Notice 09-52). NRI hail frequency uses a 0.75 inch threshold.

Optional: future conditions. Not a required item in the 2025 FEMA Local Mitigation Planning Policy Guide; some states ask for it. The federal Climate Mapping for Resilience and Adaptation (CMRA) site gives county exposure to future climate conditions (<https://resilience.climate.gov/>).

Supports FEMA checklist item B1-f: hazards that vary across jurisdictions

NRI risk score of the county's single census tract

Source: 5

Hazard	Tract score <i>NRI score, 0 to 100</i>	Rating
Cold Wave	81.4	Relatively High
Drought	99.8	Very High
Earthquake	49.0	Relatively Low
Hail	96.1	Relatively High
Heat Wave	2.6	Very Low
Hurricane		Not Applicable
Ice Storm	82.0	Relatively Moderate
Inland Flooding	18.1	Relatively Low
Landslide	42.0	Very Low
Lightning	98.0	Very High
Strong Wind	88.9	Relatively High
Tornado	86.1	Relatively High

Hazard	Tract score	Rating
	<i>NRI score, 0 to 100</i>	
Wildfire	97.2	Relatively High
Winter Weather	97.3	Very High

The score ranks a tract against all U.S. tracts (100 = highest). The rating is FEMA's category for the tract's risk value, computed differently, so the two can disagree.

Each jurisdiction (starting figures from federal data)

Sources: 1, 3, 4, 6

Jurisdiction	Type	Plan status	Repetitive loss	Public Assistance to this jurisdiction	Event records naming this place
			<i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	<i>FEMA records matched by applicant name; federal share obligated, nominal dollars</i>	<i>all years; since its plan</i>
Morton County	County	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	\$91,822.94	0 total; no approved plan
Elkhart city	City	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	\$80,998.24	121 total; no approved plan
Richfield city	City	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	167 total; no approved plan
Rolla city	City	Plan 110960 approved 2025-08-06, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	\$24,486.24	104 total; no approved plan

Repetitive-loss counts are for whole NFIP communities, which can extend beyond this county (see the note in B2-c).

School districts and special districts get a plan clock row only.

County Public Assistance in B1-d also includes applicants filed under the county that are not jurisdictions in this plan (for example state agencies, special districts and nonprofits), so the jurisdiction rows add up to less.

Supports FEMA checklist items B2-a and B2-b: vulnerability and potential impacts

Local data needed

The table below gives county-level starting figures; the plan describes impacts for each jurisdiction and its own assets.

Plan 110960 was approved by FEMA on 2025-08-06 but is not yet adopted here, so no since-plan counts are given.

- Critical facilities and lifelines per hazard
- A problem statement per jurisdiction per hazard
- Changes in development in hazard-prone areas since the last approval, or a statement of none (E1-a)
- Future assets

County-level starter: exposure, expected annual loss and damage since the plan

Sources: 1, 2, 3, 5, 6, 7

Hazard	Building exposure <i>modeled dollars</i>	Agriculture exposure <i>modeled dollars</i>	Population exposed <i>people</i>	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since plan <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Cold Wave	\$1,164,032,280	\$173,609,332	2,694	\$73	\$88,872	\$97,692	under 0.0001%				
Drought	n/a	\$28,532,412	n/a	n/a	\$2,417,980	n/a	8.47% (agriculture)				NRI has no building exposure for this hazard; agriculture shown
Earthquake	\$2,273,067,028	n/a	2,701	\$22,326	n/a	\$6,476	0.000982%				
Hail	\$1,164,034,065	\$173,609,332	2,694	\$141,337	\$55,847	\$3,405	0.0121%				
Heat Wave	\$1,164,032,280	\$173,609,332	2,694	\$15	under \$1	\$1,313	under 0.0001%				
Hurricane											Not Applicable in NRI for this county
Ice Storm	\$1,164,032,280	n/a	2,694	\$14,078	n/a	\$3,852	0.00121%				
Inland Flooding	\$1,163,973,094	\$224	7	\$292,728	\$1	\$104	n/a (see note)				NRI counts the full building value of any census block with some flood loss; this is not the value of buildings in the floodplain. Use local FIRM overlays for B2-a/B2-b.
Landslide	\$1,590,712	n/a	1	\$1	n/a	under \$1	under 0.0001%				
Lightning	\$1,164,034,065	n/a	2,694	\$1,682	n/a	\$93,923	0.000145%				
Strong Wind	\$1,164,034,065	\$173,609,332	2,694	\$52,678	\$239	\$34,649	0.00453%				
Tornado	\$1,164,034,065	\$173,609,332	2,694	\$164,661	\$5,023	\$146,710	0.0141%				

Hazard	Building exposure <i>modeled dollars</i>	Agriculture exposure <i>modeled dollars</i>	Population exposed <i>people</i>	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since plan <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Wildfire	\$270,363,480	\$98,226,315	784	\$283,646	\$1,169	\$7,897	0.105%				
Winter Weather	\$1,164,032,280	\$173,609,332	2,694	\$18,353	\$162	\$20,022	0.00158%				

Totals since the plan: not available. Plan 110960 was approved by FEMA on 2025-08-06 but is not yet adopted here, so no since-plan counts are given.

FEMA does not split Public Assistance by hazard. A declaration mapped to several hazards is listed under each of them with its full amount, so the per-hazard column does not add up to the total; the unit total counts each declaration once.

NRI computes earthquake exposure on its own basis, so it exceeds the county building value in B2-a.

Supports FEMA checklist item B2-a: vulnerability (county context)

County context

Source: 5

Measure	Value
Population	2,694
Building value (total, not at risk)	\$1,164,034,065
Agriculture value (total, not at risk)	\$173,609,332
NRI risk rating (all hazards)	Very Low
Expected annual loss, buildings and agriculture, all hazards	\$3,560,870
Expected annual loss, population equivalence, all hazards (NRI values each statistical life at \$13.7M; a modeled value of expected deaths and injuries, not property damage)	\$416,042
Social vulnerability rating	Very Low
Community resilience rating	Very Low
NRI version	December 2025

FEMA's all-hazard expected annual loss adds buildings, agriculture and population equivalence; this table gives the property part and the population-equivalence part as separate rows.

Social vulnerability: higher means people are more likely to be harmed and slower to recover. Community resilience: lower means the community is less able to recover. High social vulnerability and low resilience both raise the NRI risk rating.

Supports FEMA checklist item B2-c: repetitive loss properties

Repetitive loss in this county, both definitions

Sources: 1, 4

Definition	Properties	Severe repetitive loss	Properties
Repetitive loss, FMA definition (44 CFR 77.2)	0	Severe repetitive loss, FMA definition (44 CFR 77.2)	0
Repetitive loss, NFIP insurance definition	0	Severe repetitive loss, NFIP insurance definition	0

The state NFIP coordinator's list, the source FEMA's Handbook names, often uses the NFIP insurance definition (second row).

Repeat-flood properties: county and state-level rows

Sources: 1, 4

Scope	RL, FMA <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
County total	0	0	0	0	0	0	0
Statewide, no county in FEMA's file	0	0	1	0	1	0	0

The statewide row counts properties FEMA's file gives with no county in this state; they are listed for reference and are not in this county's counts.

Repeat-flood properties by jurisdiction in the plan (NFIP community)

Sources: 1, 4

Jurisdiction	NFIP community ID	RL, FMA <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
Morton County	200597	0	0	0	0	0	0	0
Elkhart city	200236	0	0	0	0	0	0	0
Richfield city	200678	0	0	0	0	0	0	0
Rolla city	200453	0	0	0	0	0	0	0

Counts by occupancy group for each jurisdiction are in the Excel file, sheet "B2-c Jurisdictions".

Jurisdiction rows are whole NFIP communities and need not add up to the county total: a community that extends into another county is counted in full on each jurisdiction row, while the county table counts only its part in this county.

County repeat-flood properties by occupancy group: 0 in every occupancy group.

Sources: 1, 4

FMA RL and FMA SRL are the Flood Mitigation Assistance definitions (44 CFR 77.2), the ones the FEMA Local Mitigation Planning Policy Guide cites. NFIP repetitive loss (the FEMA insurance definition) is 2 or more claims over \$1,000 in 10 years, and a property can leave that group once it is mitigated. Also shown: NFIP severe repetitive loss, any category, mitigated and currently insured. The Methods page gives the OpenFEMA field details.

Counts are aggregates of FEMA's public NFIP Multiple Loss Properties file (FEMA's data date 2026-08-02; file version 2026-08-04). No property is identified. County assignment is FEMA's geocode.

In this county 0 properties are FMA repetitive loss but not NFIP repetitive loss, and 0 properties are NFIP repetitive loss but not FMA repetitive loss.

Exact counts; no count suppression.

Sources

Tables cite these sources by number. The full list, for the plan's bibliography (FEMA review item A4-a):

1. FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-29T134039Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)
 2. FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-29T162832Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)
 3. FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-29T150754Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)
 4. FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)
 5. FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-30, https://www.fema.gov/about/reports-and-data/openfema/nri/v120/NRI_Table_Counties.zip (download, 25 MB), https://www.fema.gov/about/reports-and-data/openfema/nri/v120/NRI_Table_CensusTracts.zip (download, 635 MB)
 6. NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-30, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>
 7. NOAA National Weather Service, NWS county-public forecast zones correlation file, version bp03mr20 to bp16ap26 (11 files; newest bp16ap26), pulled 2026-09-30, <https://www.weather.gov/gis/ZoneCounty>
 8. U.S. Census Bureau, Census 2024 Gazetteer, 2020 place by county, CT county-to-cousub crosswalk, version 2024-gazetteer, pulled 2026-09-30, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gazetteer/2024_Gaz_counties_national.zip, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gaz_cousubs_national.zip, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gaz_place_national.zip, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gaz_unsd_national.zip, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gaz_elsd_national.zip, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gaz_scscd_national.zip, https://www2.census.gov/geo/docs/reference/codes2020/national_place_by_county2020.txt, https://www2.census.gov/geo/docs/reference/ct_change/ct_cou_to_cousub_crosswalk.xlsx (used to match place names and codes; no table prints its values)
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What this packet is and what the plan adds

This packet is the federal data for the plan's risk assessment (the summary on page 1 says how it is organized); the plan and FEMA's review decide whether each item is met.

The plan adds what only the community has: local data on assets, critical facilities, development and each jurisdiction's impacts; local hazard history, including state-declared emergencies; the mitigation strategy; and adoption.

How the federal data are built: National Risk Index values are FEMA's model, not counts of events. Storm Events is more complete from 1996; zone-level records are placed by forecast zone, not by location in the county. Public Assistance for a jurisdiction is matched by applicant name. The Methods page gives every rule and the known edge cases.

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Corrections: to report an error, name the packet, the table and what your records show. Contact: contact@hazardplain.org