

Ray County, MO

Risk-assessment baseline packet

Unit **County area 29177** Release **2026-10** As of **2026-09-28** 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.

A starting point for the plan's risk assessment (FEMA Local Mitigation Plan Review Tool, Element B). It does not replace local data or FEMA review. Section headings say which FEMA review item each table supports; whether an item is satisfied is decided by the plan and its reviewers.

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Plan clock

Status	Approved, expires 2030-12-01	Plan	Mid-America Regional Council (MARC) Multi-Jurisdictional HM Plan Update (FEMA plan 110970)
Approved	2025-12-02	Expires	2030-12-01
As of	2026-09-28	Days	1,525 days to expiry

What changed since your last plan (approved 2025-12-02)

New federal declarations	none (0 declaration rows; 0 counted incidents)	Storm Events records since approval	2 (data through 2026-06-30)
Repetitive loss now	FMA RL 0, SRL 1 (44 CFR 77.2); any definition: 6	Repeat-flood change	First release: no prior release to compare.

SOURCES: FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API); FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-27T010817Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API); NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>; FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)

Plan status for every jurisdiction listed in this county

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry <i>negative = days since expiry</i>	Update underway	Notes
Ray County	County	Approved, expires 2030-12-01	Mid-America Regional Council (MARC) Multi-Jurisdictional HM Plan Update (FEMA plan 110970)	2025-12-02	2030-12-01	1,525		
Excelsior Springs city	City	Approved, expires 2030-12-01	Mid-America Regional Council (MARC) Multi-Jurisdictional HM Plan Update (FEMA plan 110970)	2025-12-02	2030-12-01	1,525		
Richmond city	City	Approved, expires 2030-12-01	Mid-America Regional Council (MARC) Multi-Jurisdictional HM Plan Update (FEMA plan 110970)	2025-12-02	2030-12-01	1,525		

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry	Update underway	Notes
						<i>negative = days since expiry</i>		
Braymer C-4 School District	School/School District	Approved, expires 2026-12-15	Caldwell County (2021) (FEMA plan 107940)	2021-12-15	2026-12-15	78		
Excelsior Springs 40 School District	School/School District	Approved, expires 2030-12-01	Mid-America Regional Council (MARC) Multi- Jurisdictional HM Plan Update (FEMA plan 110970)	2025-12-02	2030-12-01	1,525		

Plan 110970 lists 49 other participants not on this page, 2 of them not covered by it yet (named in the XLSX file).

SOURCE: FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

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

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Supports B1-a: hazards

Hazards NRI does not cover: check locally

- 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)

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings modeled dollars per year	EAL agriculture modeled dollars per year	EAL population equivalence statistical value of life and injury; \$13.7M per life, not property damage	EAL total (see note) modeled dollars per year	Storm Events records since 1996 count	Evidence for an omission NRI Not Applicable, no declaration and no Storm Events record since 1996	Storm Events coverage note
1	Inland Flooding	Relatively Low	Relatively Low	\$4,348,613	\$959,849	\$725,034	\$6,033,496	58		
2	Cold Wave	Relatively Moderate	Relatively Moderate	\$1,112	\$149,618	\$2,951,019	\$3,101,749	11		Includes 1 Frost/Freeze record, event types the NRI definition of this hazard leaves out.
3	Tornado	Relatively Low	Relatively Low	\$620,637	\$3,339	\$922,963	\$1,546,939	13		
4	Heat Wave	Relatively Low	Relatively Low	\$2,562	\$4	\$892,022	\$894,587	15		
5	Hail	Relatively Low	Relatively Low	\$355,820	\$28,069	\$24,290	\$408,179	85		
6	Strong Wind	Relatively Low	Relatively Low	\$43,776	\$648	\$357,909	\$402,332	86		Includes 2 High Wind records, event types the NRI definition of this hazard leaves out.
7	Drought	Relatively Moderate	Relatively Moderate		\$380,316		\$380,316	21		
8	Lightning	Relatively Low	Relatively Low	\$6,482		\$169,351	\$175,833	2		
9	Ice Storm	Relatively Moderate	Relatively Moderate	\$38,586		\$102,459	\$141,045	8		

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	EAL population equivalence <i>statistical value of life and injury, \$13.7M per life, not property damage</i>	EAL total (see note) <i>modeled dollars per year</i>	Storm Events records since 1996 <i>count</i>	Evidence for an omission <i>NRI Not Applicable, no declaration and no Storm Events record since 1996</i>	Storm Events coverage note
10	Earthquake	Very Low	Very Low	\$84,322		\$23,569	\$107,891			Not in Storm Events. Storm Events coverage of this hazard is limited; absence is not evidence of low risk.
11	Winter Weather	Relatively Moderate	Relatively Moderate	\$62,231	\$104	\$37,028	\$99,362	34		
12	Wildfire	Very Low	Very Low	\$47,712	\$160	\$12,204	\$60,076	0		No recorded events in Storm Events since 1996 (data through 2026-06-30). Storm Events coverage of this hazard is limited; absence is not evidence of low risk.
13	Landslide	Relatively Low	Relatively Low	\$477		\$14,782	\$15,260	0		No recorded events in Storm Events since 1996 (data through 2026-06-30). Storm Events coverage of this hazard is limited; absence is not evidence of low risk.
14	Hurricane	No Rating	No Expected Annual Losses	\$0	\$0	\$0	\$0	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Avalanche	Not Applicable	Not Applicable					0	NRI rates avalanche Not Applicable for this county, and no federal declaration for this county names it.	No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Coastal Flooding	Not Applicable	Not Applicable					0	NRI rates coastal flooding Not Applicable for this county, and no federal declaration for this county names it.	No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Tsunami	Not Applicable	Not Applicable					0	NRI rates tsunami Not Applicable for this county, and no federal declaration for this county names it.	No recorded events in Storm Events since 1996 (data through 2026-06-30). Storm Events coverage of this hazard is limited; absence is not evidence of low risk.
	Volcanic Activity	Not Applicable	Not Applicable					0	NRI rates volcanic activity Not Applicable for this county, and no federal declaration for this county names it.	No recorded events in Storm Events since 1996 (data through 2026-06-30). Storm Events coverage of this hazard is limited; absence is not evidence of low risk.

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

SOURCES

FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-28, 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)

NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

Check your state hazard mitigation plan's hazard list for this county; explain any hazard you drop.

Supports B1-b: location

Where each hazard occurs

Hazard	Location	Census tracts rated <i>rated of all tracts</i>
Avalanche	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	0 of 6
Coastal Flooding	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	0 of 6
Cold Wave	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6
Drought	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6
Earthquake	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	6 of 6
Hail	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6
Heat Wave	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6
Hurricane	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	0 of 6
Ice Storm	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6
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.	6 of 6
Landslide	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	6 of 6
Lightning	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6
Strong Wind	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6
Tornado	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	6 of 6
Tsunami	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	0 of 6
Volcanic Activity	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	0 of 6
Wildfire	Census tract rating counts from the National Risk Index tract table (see B1-f). Tract maps and place names are not in this packet.	6 of 6
Winter Weather	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	6 of 6

SOURCE

FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-28, 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)

Supports B1-c: extent

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

Hazard	Scale	Records <i>count, years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to members	Note
Avalanche	none (count and damage)	0					Physical measure: in event narratives only; local data required.
Coastal Flood, Storm Surge/ Tide	none in data (FIRM for depth)	0					Flood depth: see the FEMA Flood Insurance Rate Map.

Hazard	Scale	Records <i>count, years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to members	Note
Cold/Wind Chill, Extreme Cold/Wind Chill	wind chill	10, 1997 to 2025 (10 zone-level)	1 day to 22 days (median 4 days); 8 with a recorded value	22 days, 2000-12-10 to 2000-12-31, from 1 monthly summary record (a monthly summary record covers most or all of a month; it does not count days at wave conditions), zone-level		Zone-level records: applies countywide; national data do not locate these events within the county.	Wind chill: in event narratives only; local data required.
Frost/Freeze (outside NRI Cold Wave definition)	crop damage	1, 2007 to 2007 (1 zone-level)		No crop damage reported in 1 records.		Zone-level records: applies countywide; national data do not locate these events within the county.	Temperature: in event narratives only; local data required.
Drought	US Drought Monitor D-scale	21, 2000 to 2024 (21 zone-level)	5 days to 243 days (median 76.5 days); 6 with a recorded value	243 days (8 months), 2012-07-01 to 2013-02-28, a run of 8 consecutive Storm Events drought records, zone-level		Zone-level records: applies countywide; national data do not locate these events within the county.	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					No Storm Events record; local data required (e.g., USGS).
Hail	hail size (inches)	116, 1955 to 2025	0.75 in to 2.75 in (median 1 in); 116 with a recorded value	2.75 in hail, 2003-05-04; same size also recorded on 1970-06-17	Hail, 1994-06-25, \$5,000 property; crops not recorded (1994 dollars)	Event records naming member places: Richmond city (22 records).	
Excessive Heat, Heat	heat index (narratives)	15, 1999 to 2023 (15 zone-level)	1 day to 14 days (median 5 days); 13 with a recorded value	14 consecutive days, 1999-07-18 to 1999-07-31, zone-level		Zone-level records: applies countywide; national data do not locate these events within the county.	Heat index: in event narratives only; local data required.
Hurricane, Tropical Storm, Tropical Depression	Saffir-Simpson	0					Storm Events files every zone of a storm's episode under the storm's event type and category, so a Hurricane (Typhoon) record, especially an inland or remnant one, does not by itself mean hurricane-force winds here; read the damage and wind columns.
Ice Storm	Sperry-Piltz (local data)	8, 1997 to 2019 (8 zone-level)		Ice Storm, 2002-01-30, \$300,000 property; crops not reported, reported for the zone (2002 dollars); NWS zone MOZ030 (RAY), zone-level: may include parts of neighboring counties		Zone-level records: applies countywide; national data do not locate these events within the county.	Ice thickness: in event narratives only; local data required.

Hazard	Scale	Records <i>count, years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to members	Note
Flash Flood, Flood, Lakeshore Flood	damage and flood days (FIRM for depth)	58, 1996 to 2021 (28 zone-level)		Flash Flood, 1998-10-04, \$100,000 property; crops not reported (1998 dollars)		Event records naming member places: Richmond city (8 records). Zone-level records (28) apply countywide.	Flood depth: see the FEMA Flood Insurance Rate Map. Storm Events damage can be \$0 or blank even for a major flood, so the worst record here may not be the worst flood; compare FEMA Public Assistance by declaration in B1-d.
Debris Flow	none (count and damage)	0					Physical measure: in event narratives only; local data required.
Lightning	annualized frequency (the measure FEMA's Local Mitigation Planning Handbook names)	2, 1997 to 1998		Lightning, 1997-05-18, \$10,000 property; crops not reported (1997 dollars)		Event records naming member places: Richmond city (2 records).	Storm Events lists lightning with damage or casualties; physical measure in event narratives only; local data required.
High Wind and Strong Wind (outside NRI Strong Wind definition)	wind speed (kt and mph)	2, 2015 to 2021 (2 zone-level)	52 kt (60 mph) to 56 kt (64 mph) (median 54 kt (62 mph)); 2 with a recorded value	56 kt (64 mph) measured gust, High Wind, 2021-12-15; NWS zone MOZ030 (RAY), zone-level: may include parts of neighboring counties		Zone-level records: applies countywide; national data do not locate these events within the county.	
Thunderstorm Wind	wind speed (kt and mph)	112, 1962 to 2025	50 kt (58 mph) to 80 kt (92 mph) (median 52 kt (60 mph)); 91 with a recorded value	80 kt (92 mph) estimated, Thunderstorm Wind, 2000-10-14	Thunderstorm Wind, 1993-08-11, \$500,000 property; crops not recorded (1993 dollars)	Event records naming member places: Richmond city (29 records).	

Hazard	Scale	Records <i>count, years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to members	Note
Tornado	Enhanced Fujita (F before Feb 2007)	34, 1951 to 2026	F/EF0 to F/EF4 (median F/EF1); 34 with a recorded value	F4 tornado, 1977-05-04, 13.4 mi path length (records before 1996 may include the whole path; rating and listing come from the county where the tornado began), 880 yd wide, \$2,500,000 property; crops not recorded (1977 dollars), 1 direct injury	Tornado, 1967-01-24, \$2,500,000 property; crops not recorded (1967 dollars)	No event record names a member place.	From 1996 on, tornado records are per-county segments and length is the path length within this county (NWS Instruction 10-1605); records before 1996 may give the whole path length, including the path outside this county, and before 1996 a tornado is listed once, under the county where it began, with the whole path's rating; counties farther along the path may not list it. Length is not used to rank tornadoes.
Tsunami	none (count and damage)	0					Physical measure: in event narratives only; local data required.
Volcanic Ash, Volcanic Ashfall	Volcanic Explosivity Index (local data)	0					Physical measure: in event narratives only; local data required.
Wildfire	acres burned (local data)	0					Acres burned: in event narratives only; local data required.
Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet	none in data (snowfall local)	34, 1997 to 2026 (34 zone-level)		No damage reported in 34 records.		Zone-level records: applies countywide; national data do not locate these events within the county.	Snow depth: in event narratives only; local data required.

Storm Events records are more complete after 1996; before 1996 only Tornado (from 1950), Hail and Thunderstorm Wind (from 1955) exist. Zone-level records are placed with NWS zone-county files, which exist from 2020 on; an earlier record is placed by its zone number in the nearest later file only when its zone name matches that file, records from zones NWS renumbered are placed by name or left out, and a record whose zone is in no known file is left out of every count, so counts before 2020 can be low. Some current zones are also missing from the NWS files, so recent counts can be low too.

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

SOURCES

NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

NOAA National Weather Service, NWS county-public forecast zones correlation file, version bp03mr20 to bp16ap26 (11 files; newest bp16ap26), pulled 2026-09-28, <https://www.weather.gov/gis/ZoneCounty>

Supports B1-d: previous occurrences

Declaration rows

33

Counted incidents

28

Federal disaster declarations for this county

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance <i>federal share obligated, nominal dollars</i>	Flags	Notes
2021-09-01	2021-06-24	DR-4612-MO	Major disaster	SEVERE STORMS, STRAIGHT-LINE WINDS, TORNADOES, AND FLOODING	Inland Flooding; Strong Wind; Tornado	\$1,180,112.74		
2020-03-26	2020-01-20	DR-4490-MO	Major disaster	COVID-19 PANDEMIC	Non-natural, not counted	none placed in this county by FEMA's record; \$369,154.74 for this declaration is not placed in any county (see the list below)		
2020-03-13	2020-01-20	EM-3482-MO	Emergency	COVID-19	Non-natural, not counted	none found		same incident as DR-449
2019-07-09	2019-04-29	DR-4451-MO	Major disaster	SEVERE STORMS, TORNADOES, AND FLOODING	Inland Flooding; Tornado	\$2,802,567.36		
2019-05-20	2019-03-11	DR-4435-MO	Major disaster	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	Inland Flooding (primary); also designated: Strong Wind	\$928,278.21		
2015-08-07	2015-05-15	DR-4238-MO	Major disaster	SEVERE STORMS, TORNADOES, STRAIGHT-LINE WINDS, AND FLOODING	Inland Flooding; Strong Wind; Tornado	\$1,561,133.73		
2011-08-12	2011-06-01	DR-4012-MO	Major disaster	FLOODING	Inland Flooding	\$1,344,845.02		
2011-06-30	2011-06-01	EM-3325-MO	Emergency	FLOODING	Inland Flooding	none found		same incident as DR-401
2011-03-23	2011-01-31	DR-1961-MO	Major disaster	SEVERE WINTER STORM AND SNOWSTORM	Winter Weather	\$160,409.27		

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance		Flags	Notes
						federal share obligated, nominal dollars			
2011-02-03	2011-01-31	EM-3317-MO	Emergency	SEVERE WINTER STORM	Winter Weather		none found		same incident as DR-196
2010-08-17	2010-06-12	DR-1934-MO	Major disaster	SEVERE STORMS, FLOODING, AND TORNADOES	Inland Flooding; Tornado		\$819,745.70		
2009-06-19	2009-05-08	DR-1847-MO	Major disaster	SEVERE STORMS, TORNADOES, AND FLOODING	Inland Flooding; Tornado		\$202,541.88		
2009-01-30	2009-01-26	EM-3303-MO	Emergency	SEVERE WINTER STORM	Ice Storm		none found		
2008-11-13	2008-09-11	DR-1809-MO	Major disaster	SEVERE STORMS, FLOODING, AND A TORNADO	Inland Flooding; Tornado		\$131,998.19		
2008-06-25	2008-06-01	DR-1773-MO	Major disaster	SEVERE STORMS AND FLOODING	Inland Flooding		\$161,257.27		
2007-12-12	2007-12-08	EM-3281-MO	Emergency	SEVERE WINTER STORMS	Ice Storm		none found		
2007-06-11	2007-05-05	DR-1708-MO	Major disaster	SEVERE STORMS AND FLOODING	Inland Flooding		\$366,318.21		
2006-03-16	2006-03-08	DR-1631-MO	Major disaster	SEVERE STORMS, TORNADOES AND FLOODING	Inland Flooding; Tornado		\$14,586.72		
2005-09-10	2005-08-29	EM-3232-MO	Emergency	HURRICANE KATRINA EVACUATION	Hurricane: evacuation support, not a local hazard event; not counted		none found		
2004-06-11	2004-05-18	DR-1524-MO	Major disaster	SEVERE STORMS, TORNADOES, AND FLOODING	Inland Flooding; Tornado	PA not declared for this county			

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance	Flags	Notes
						<i>federal share obligated, nominal dollars</i>		
2003-05-06	2003-05-04	DR-1463-MO	Major disaster	SEVERE STORMS, TORNADOES, AND FLOODING	Inland Flooding; Tornado	PA not declared for this county		
2002-05-06	2002-04-24	DR-1412-MO	Major disaster	SEVERE STORMS, TORNADOES AND FLOODING	Inland Flooding; Tornado	\$74,325.81		
2002-02-06	2002-01-29	DR-1403-MO	Major disaster	SEVERE WINTER ICE STORM	Ice Storm	\$192,715.04		
1998-10-14	1998-10-04	DR-1253-MO	Major disaster	SEVERE STORMS, FLOODING AND TORNADOES	Inland Flooding; Tornado	none found		
1995-06-02	1995-05-13	DR-1054-MO	Major disaster	SEVERE STORMS, TORNADOES, HAIL, FLOODING	Hail; Inland Flooding; Tornado	none found		
1993-07-09	1993-06-10	DR-995-MO	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding	none found		
1977-09-14	1977-09-14	DR-538-MO	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding	none found		
1977-05-07	1977-05-07	DR-535-MO	Major disaster	TORNADOES & FLOODING	Tornado (primary); also designated: Inland Flooding	none found		
1976-09-24	1976-09-24	EM-3017-MO	Emergency	DROUGHT	Drought	none found		
1974-06-10	1974-06-10	DR-439-MO	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding	none found		
1973-11-01	1973-11-01	DR-407-MO	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding	none found		
1973-04-19	1973-04-19	DR-372-MO	Major disaster	HEAVY RAINS, TORNADOES & FLOODING	Inland Flooding; Tornado	none found		

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance <i>federal share obligated, nominal dollars</i>	Flags	Notes
1965-07-27	1965-07-27	DR-203-MO	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding	none found		

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.

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

SOURCES

FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-27T010817Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)

FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-26T151157Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)

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Statewide declarations

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	Flags	Notes
1964-07-08	1964-07-08	DR-173-MO	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding		
1961-05-27	1961-05-27	DR-114-MO	Major disaster	FLOODS	Inland Flooding		
1960-04-20	1960-04-20	DR-100-MO	Major disaster	FLOODS	Inland Flooding		
1957-05-22	1957-05-22	DR-75-MO	Major disaster	TORNADOES & FLOODS	Tornado (primary); also designated: Inland Flooding		

FEMA recorded these with designated area Statewide and no county. Listed on every county page in the state; not counted with county rows.

SOURCE

FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-27T010817Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)

Public Assistance not placed in a county in this state: 24 rows, \$2,272,582.85

Disaster number	Declared	Applicant	County field in FEMA data	PA obligated <i>federal share obligated, nominal dollars</i>	Why not placed
4490	2020-03-26	Presbyterian Manors, Inc. (MO)	Sedgwick County	\$369,154.74	county field is a county of another state and the applicant name does not identify a place in the declaring state
4435	2019-05-20	Northwest Atchison Levee District	Fremont County	\$93,849.88	county field is a county of another state and the applicant name does not identify a place in the declaring state
4435	2019-05-20	Missouri Valley Drainage District	Fremont County	\$416,259.32	county field is a county of another state and the applicant name does not identify a place in the declaring state
4435	2019-05-20	Lewis Drainage District	Fremont County	\$111,060.76	county field is a county of another state and the applicant name does not identify a place in the declaring state
4435	2019-05-20	Hamburg Pumping Facility	Fremont County	\$0	county field is a county of another state and the applicant name does not identify a place in the declaring state
4435	2019-05-20	Buchanan Levee and Drainage District	Fremont County	\$37,254.37	county field is a county of another state and the applicant name does not identify a place in the declaring state
4012	2011-08-12	Northwest Atchison Levee District	Fremont County	\$51,527.94	county field is a county of another state and the applicant name does not identify a place in the declaring state
4012	2011-08-12	Lewis Drainage District	Fremont County	\$88,490.09	county field is a county of another state and the applicant name does not identify a place in the declaring state

Disaster number	Declared	Applicant	County field in FEMA data	PA obligated	Why not placed
				<i>federal share obligated, nominal dollars</i>	
4012	2011-08-12	Hamburg Pumping Facility	Fremont County	\$21,000.75	county field is a county of another state and the applicant name does not identify a place in the declaring state
4012	2011-08-12	Buchanan Levee and Drainage District	Fremont County	\$81,338.68	county field is a county of another state and the applicant name does not identify a place in the declaring state
1934	2010-08-17	Missouri Valley Drainage District	Fremont County	\$39,820.05	county field is a county of another state and the applicant name does not identify a place in the declaring state
1934	2010-08-17	Lewis Drainage District	Fremont County	\$45,161.25	county field is a county of another state and the applicant name does not identify a place in the declaring state
1934	2010-08-17	Hamburg Pumping Facility	Fremont County	\$89,457.75	county field is a county of another state and the applicant name does not identify a place in the declaring state
1934	2010-08-17	BUCHANAN LEVEE DISTRICT	Fremont County	\$79,455.75	county field is a county of another state and the applicant name does not identify a place in the declaring state
1773	2008-06-25	Northwest Atchison Levee District	Fremont County	\$3,124.50	county field is a county of another state and the applicant name does not identify a place in the declaring state
1773	2008-06-25	Missouri Valley Drainage District	Fremont County	\$8,796	county field is a county of another state and the applicant name does not identify a place in the declaring state
1773	2008-06-25	Lewis Drainage District	Fremont County	\$190,008	county field is a county of another state and the applicant name does not identify a place in the declaring state
1773	2008-06-25	Hamburg Pumping Facility	Fremont County	\$259,200	county field is a county of another state and the applicant name does not identify a place in the declaring state
1773	2008-06-25	BUCHANAN LEVEE DISTRICT	Fremont County	\$126,637.50	county field is a county of another state and the applicant name does not identify a place in the declaring state
1708	2007-06-11	Northwest Atchison Levee District	Fremont County	\$11,315.35	county field is a county of another state and the applicant name does not identify a place in the declaring state
1708	2007-06-11	Missouri Valley Drainage District	Fremont County	\$8,932.31	county field is a county of another state and the applicant name does not identify a place in the declaring state
1708	2007-06-11	Lewis Drainage District	Fremont County	\$35,385.85	county field is a county of another state and the applicant name does not identify a place in the declaring state
1708	2007-06-11	Hamburg Pumping Facility	Fremont County	\$76,935.18	county field is a county of another state and the applicant name does not identify a place in the declaring state
1708	2007-06-11	BUCHANAN LEVEE DISTRICT	Fremont County	\$28,416.83	county field is a county of another state and the applicant name does not identify a place in the declaring state

FEMA's Public Assistance summaries file these applicants under a county field that is not a county of this state (an Alaska school area, the former Valdez-Cordova Census Area, or another state's county), and the applicant name does not identify one place here. They are listed for the whole state and are not in any county total. Check whether any of them worked in your county.

SOURCE

FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-26T151157Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)

Previous occurrences by hazard, with explicit no-event rows

Hazard	Storm Events records <i>full period</i>	Since plan approval <i>records</i>	During plan review <i>records</i>	Last 5 years <i>records</i>	Declared incidents <i>distinct incidents</i>	Declared since approval <i>distinct incidents</i>	Period	Statement
Avalanche	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Coastal Flooding	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Cold Wave	11	0	1	3	0	0	1996 to 2026-06-30	Includes 1 Frost/Freeze record, event types the NRI definition of this hazard leaves out.
Drought	21	0	0	8	1	0	1996 to 2026-06-30	
Earthquake	0	0	0	0	0	0		No Storm Events record; local data required (e.g., USGS).
Hail	116	0	3	9	1	0	1955 to 2026-06-30	
Heat Wave	15	0	0	1	0	0	1996 to 2026-06-30	
Hurricane	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Ice Storm	8	0	0	0	3	0	1996 to 2026-06-30	
Inland Flooding	58	0	0	0	23	0	1996 to 2026-06-30	
Landslide	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Lightning	2	0	0	0	0	0	1996 to 2026-06-30	
Strong Wind	114	0	14	25	3	0	1955 to 2026-06-30	Includes 2 High Wind records, event types the NRI definition of this hazard leaves out.
Tornado	34	1	0	2	14	0	1950 to 2026-06-30	
Tsunami	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Volcanic Activity	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Wildfire	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Winter Weather	34	1	0	2	1	0	1996 to 2026-06-30	

SOURCES

NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-27T010817Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)

NOAA National Weather Service, NWS county-public forecast zones correlation file, version bp03mr20 to bp16ap26 (11 files; newest bp16ap26), pulled 2026-09-28, <https://www.weather.gov/gis/ZoneCounty>

Notable Storm Events records

Date	Event type	Magnitude or extent	Damage <i>nominal dollars</i>	Direct deaths, injuries <i>indirect not counted</i>	Location	Flags	Why listed
2021-12-15	High Wind	56 kt (64 mph) measured gust	damage not reported	0, 0	NWS zone MOZ030 (RAY), zone-level: may include parts of neighboring counties	within last 5 years	B1-c worst recorded: High Wind and Strong Wind (outside NRI Strong Wind definition)
2012-07-01	Drought		\$0 property; \$0 crops, reported for the zone (2012 dollars)	0, 0	NWS zone MOZ030 (RAY), zone-level: may include parts of neighboring counties		B1-c worst recorded: Drought
2003-05-04	Hail	2.75 in	damage not reported	0, 0	RICHMOND		B1-c worst recorded: Hail
2001-06-04	Flash Flood		damage not reported	1, 0	WOOD HGTS		deaths or injuries recorded
2000-12-10	Extreme Cold/ Wind Chill		damage not reported	0, 0	NWS zone MOZ030 (RAY), zone-level: may include parts of neighboring counties		B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill
2000-10-14	Thunderstorm Wind	80 kt (92 mph) estimated	\$200,000 property; crops not reported (2000 dollars)	0, 0	TAITSVILLE		B1-c worst recorded: Thunderstorm Wind
1999-07-18	Heat		damage not reported	0, 0	NWS zone MOZ030 (RAY), zone-level: may include parts of neighboring counties		B1-c worst recorded: Excessive Heat, Heat
1998-10-04	Flash Flood		\$100,000 property; crops not reported (1998 dollars)	0, 0	RICHMOND		B1-c worst recorded: Flash Flood, Flood, Lakeshore Flood
1997-05-18	Lightning		\$10,000 property; crops not reported (1997 dollars)	0, 0	RICHMOND		B1-c worst recorded: Lightning
1977-05-04	Tornado	F4, 13.4 mi path length (records before 1996 may include the whole path; rating and listing come from the county where the tornado began), 880 yd wide	\$2,500,000 property; crops not recorded (1977 dollars)	0, 1	location not recorded		B1-c worst recorded: Tornado
1967-01-24	Tornado	F3, 8.3 mi path length (records before 1996 may include the whole path; rating and listing come from the county where the tornado began), 200 yd wide	\$2,500,000 property; crops not recorded (1967 dollars)	2, 18	location not recorded		deaths or injuries recorded
1961-05-07	Tornado	F2, 50 yd wide	\$25,000 property; crops not recorded (1961 dollars)	0, 2	location not recorded		deaths or injuries recorded

The full list is in the **XLSX** file, sheet "**B1-d Storm Events history**" (413 rows).

Storm Events records are more complete after 1996; before 1996 only Tornado (from 1950), Hail and Thunderstorm Wind (from 1955) exist. Zone-level records are placed with NWS zone-county files, which exist from 2020 on; an earlier record is placed by its zone number in the nearest later file only when its zone name matches that file, records from zones NWS renumbered are placed by name or left out, and a record whose zone is in no known file is left out of every count, so counts before 2020 can be low. Some current zones are also missing from the NWS files, so recent counts can be low too.

SOURCES

NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>
 NOAA National Weather Service, NWS county-public forecast zones correlation file, version bp03mr20 to bp16ap26 (11 files; newest bp16ap26), pulled 2026-09-28, <https://www.weather.gov/gis/ZoneCounty>
 FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

State-declared emergencies are not in federal data. Add them from your state emergency management agency.

FEMA's declaration data list no tribal or special-area declarations for this state.

Supports B1-e: probability

Probability: FEMA annualized frequency and descriptor per hazard

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
Avalanche		events per year					1994 to 2023 (30 years)	see B1-f	Not Applicable in NRI for this county; no descriptor.
Coastal Flooding		events per year at a location (modeled)				not shown	modeled	see B1-f	Not Applicable in NRI for this county; no descriptor.
Cold Wave	2.63	event-days per year	about 2.63 days per year	Likely	event-days in 7 of 30 years, 1996 to 2025 (23.3%)	50	2005-11-12 to 2024-11-12 (19 years)	countywide	NRI gives about 2.63 cold wave event-days a year here (its annualized frequency over 19 years; not its event count divided by the years), but Storm Events has a record in only 7 of 30 years. NRI counts from a different source that records far more events than Storm Events, so this descriptor reads much lower than NRI's frequency; read the two together. Frost/Freeze records are not counted in this descriptor: they record crop freezes, not cold waves.
Drought	14.1	event-days per year	about 14.1 days per year	Likely	event-days in 7 of 30 years, 1996 to 2025 (23.3%)	427	2000 to 2025 (25.25 years; D3 and D4 only)	countywide	NRI gives about 14.1 drought event-days a year here (its annualized frequency over 25.25 years; not its event count divided by the years), but Storm Events has a record in only 7 of 30 years. NRI counts from a different source that records far more events than Storm Events, so this descriptor reads much lower than NRI's frequency; read the two together.
Earthquake	0.00126	annual probability at a location	chance a given location in the county has at least minor- damage shaking in a year: 0.126%			not shown	modeled	see B1-f	Descriptor not assigned: the NRI value is the chance at a location in the county, not how often the hazard affects the county, and Storm Events does not record earthquakes.
Hail	6.89	events per year	about 6.89 per year	Highly likely	FEMA annualized frequency (modeled)	262.0 (modeled)	1986 to 2023 (38 years)	countywide	

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
Heat Wave	12.1	event-days per year	about 12.1 days per year	Likely	event-days in 9 of 30 years, 1996 to 2025 (30%)	152	2005-11-12 to 2024-11-12 (19 years)	countywide	NRI gives about 12.1 heat wave event-days a year here (its annualized frequency over 19 years; not its event count divided by the years), but Storm Events has a record in only 9 of 30 years. NRI counts from a different source that records far more events than Storm Events, so this descriptor reads much lower than NRI's frequency; read the two together.
Hurricane	0	events per year	none modeled	Unlikely	FEMA annualized frequency (modeled)	0	1851 to 2024 (Atlantic)	see B1-f	NRI counts hurricane and tropical storm tracks passing within storm-force wind range; federal declarations are counted separately in B1-d and need not match.
Ice Storm	0.795	event-days per year	about 0.795 days per year	Likely	event-days in 8 of 30 years, 1996 to 2025 (26.7%)	54	1946-12-31 to 2014-02-12 (67 years)	countywide	
Inland Flooding	1.68	event-days per year	about 1.68 days per year	Likely	event-days in 16 of 30 years, 1996 to 2025 (53.3%)	47	1996 to 2023 (28 years)	see B1-f	
Landslide	0.242	events per year (modeled)	about 1 in 4 years	Likely	FEMA annualized frequency (modeled)	not shown	modeled	see B1-f	
Lightning	48.8	days per year with a strike	about 48.8 days per year	Highly likely	FEMA annualized frequency (modeled)	not shown	1995 to 2023 (29 years; CONUS)	countywide	
Strong Wind	5.15	events per year	about 5.15 per year	Highly likely	FEMA annualized frequency (modeled)	196	1986 to 2023 (38 years)	countywide	
Tornado	0.321	events per year	about 1 in 3 years	Likely	FEMA annualized frequency (modeled)	not shown	1950 to 2023 (EF2+); 1986 to 2023 (EF0-1)	see B1-f	
Tsunami		annual probability at the most exposed location (used in place of a county value)				not shown	modeled	see B1-f	Not Applicable in NRI for this county; no descriptor.
Volcanic Activity		annual probability				not shown	modeled	see B1-f	Not Applicable in NRI for this county; no descriptor.

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	0.000919	annual probability at a location	chance a given location in the county burns in a year: 0.0919%		Storm Events records in 0 of 30 years, 1996 to 2025 (0%)	not shown	modeled	see B1-f	No Storm Events record of this hazard, 1996 to 2025; descriptor not assigned (the NRI value is the chance at a location in the county, not how often the hazard affects the county)
Winter Weather	10.6	event-days per year	about 10.6 days per year	Likely	event-days in 18 of 30 years, 1996 to 2025 (60%)	201	2005-11-12 to 2024-11-12 (19 years)	countywide	

FEMA annualized frequency (modeled) comes from the National Risk Index v1.20 (December 2025). It is not recorded events divided by years, and what it measures depends on the hazard. For most hazards it estimates how often the hazard affects this county each year: it counts events or event-days (drought, heat wave, cold wave, winter weather, ice storm and inland flooding are in days per year; lightning is the number of days per year with a recorded cloud-to-ground strike, from the NOAA Storm Prediction Center daily lightning climatology); it may count events in the surrounding area (hail, strong wind, tornado, hurricane and ice storm use a 49 km grid and buffers) and is averaged over the county's area; and some hazards use a minimum value for places with no recorded event. Earthquake, wildfire and coastal flooding are different: FEMA computes them for each census block and averages them over the county, so the value is the chance (for coastal flooding, the modeled number of floods per year) at a location in the county, which is lower than the chance that the hazard strikes somewhere in the county. Earthquake is the chance of at least minor-damage shaking (U.S. Geological Survey model); wildfire is the chance that a location burns in a large fire (U.S. Forest Service burn probability); coastal flooding comes from FEMA flood zones and NOAA high-tide flooding, so it can be above 1 where high-tide flooding is frequent. Tsunami is the value at the county's most exposed location, from recorded events and modeled return periods. For these four hazards the packet gives no "1 in N years" and takes the descriptor from Storm Events (none for earthquake) unless the value is 1 or more a year. Landslide is a U.S. Geological Survey modeled county rate spread by slope susceptibility. Volcanic activity is the chance that a volcano affecting the county erupts in a year. Drought counts only extreme and exceptional drought (D3 and D4). Source: FEMA, National Risk Index Technical Documentation v1.20, sections 5.2.2 (Table 5), 5.2.3, 7.4, 10.4, 16.5, 17.1, 17.3.1, 17.5, 20.3.1, 21.4, 22.4 and 6 to 23.

SOURCES
FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-28, 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)
NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

Descriptor scale used in this packet (defined per unit)

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

SOURCES
FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-28, 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)

Intensity bands: historical frequency (Storm Events)

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	52	30	1.73
Hail	2.00 in+	1996 to 2025	2	30	0.0667
Strong Wind (Thunderstorm Wind records)	50-64 kt	1996 to 2025	73	30	2.43
Strong Wind (Thunderstorm Wind records)	65 kt+	1996 to 2025	10	30	0.333
Strong Wind (Thunderstorm Wind records)	unmeasured or below 50 kt	1996 to 2025	1	30	0.0333
Tornado	EF0-1	1996 to 2025	10	30	0.333
Tornado	EF2-3	1996 to 2025	2	30	0.0667
Tornado	EF4-5	1996 to 2025	0	30	0
Tornado	unrated (EFU)	1996 to 2025	0	30	0

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.

SOURCE
NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

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.

Supports B1-f: variation across the planning area

Range of census tract risk within the county

Hazard	Tracts <i>rated of all</i>	Risk score min <i>NRI score, 0 to 100</i>	Median	Max	Tracts by rating	Note
Avalanche	0 of 6				Not Applicable 6	
Coastal Flooding	0 of 6				Not Applicable 6	
Cold Wave	6 of 6	93.0	94.1	99.2	Very High 2, Relatively High 4	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. The tract range above mostly reflects where buildings and people are. Confirm locally.
Drought	6 of 6	83.0	91.1	97.4	Relatively Moderate 2, Relatively Low 4	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. Agriculture is all of NRI's expected annual loss for this hazard in the county, so the tract range above mostly reflects where crop and livestock value is, not where buildings and people are. Confirm locally.
Earthquake	6 of 6	30.3	38.6	53.1	Relatively Low 2, Very Low 4	
Hail	6 of 6	80.8	86.7	93.9	Relatively High 1, Relatively Moderate 5	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. The tract range above mostly reflects where buildings and people are. Confirm locally.

Hazard	Tracts rated of all	Risk score min <i>NRI score, 0 to 100</i>	Median	Max	Tracts by rating	Note
Heat Wave	6 of 6	81.0	84.2	95.1	Relatively High 3, Relatively Moderate 3	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. The tract range above mostly reflects where buildings and people are. Confirm locally.
Hurricane	0 of 6				No Rating 6	
Ice Storm	6 of 6	78.3	85.7	93.8	Relatively High 1, Relatively Moderate 5	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. The tract range above mostly reflects where buildings and people are. Confirm locally.
Inland Flooding	6 of 6	27.7	60.5	97.6	Very High 1, Relatively High 1, Relatively Moderate 2, Relatively Low 2	
Landslide	6 of 6	72.0	91.2	98.4	Relatively Moderate 1, Relatively Low 3, Very Low 2	
Lightning	6 of 6	70.3	75.0	95.0	Relatively High 2, Relatively Moderate 4	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. The tract range above mostly reflects where buildings and people are. Confirm locally.
Strong Wind	6 of 6	78.7	82.2	94.9	Relatively High 2, Relatively Moderate 4	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. The tract range above mostly reflects where buildings and people are. Confirm locally.
Tornado	6 of 6	71.7	78.1	96.2	Very High 1, Relatively High 4, Relatively Moderate 1	
Tsunami	0 of 6				Not Applicable 6	
Volcanic Activity	0 of 6				Not Applicable 6	
Wildfire	6 of 6	73.5	84.9	89.1	Relatively Moderate 1, Relatively Low 5	
Winter Weather	6 of 6	84.2	88.8	96.9	Very High 1, Relatively High 5	National data give a county-wide or coarse (49 km grid or NWS zone) frequency for this hazard, so they cannot show members' hazard differing. The tract range above mostly reflects where buildings and people are. Confirm locally.

Rated tracts only: No Rating (score 0.0), Not Applicable and Insufficient Data tracts are counted but not used for the minimum, median and maximum.

SOURCE

FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-28, 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)

Per-member block (Starter, confirm locally)

Member	Type	Plan status	Repetitive loss <i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	Public Assistance matched <i>federal share obligated, nominal dollars</i>	Event records naming this place <i>all years; since the member's plan</i>	Notes
Ray County	County	Approved, expires 2030-12-01	FMA RL 0, SRL 1; any 4	\$2,474,927.20	0; 0	
Excelsior Springs city	City	Approved, expires 2030-12-01	FMA RL 0, SRL 3; any 10	none found	0; 0	Whole community, including the part in Clay County; none of its repeat-flood properties are in this county.

Member	Type	Plan status	Repetitive loss <i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	Public Assistance matched <i>federal share obligated, nominal dollars</i>	Event records naming this place <i>all years; since the member's plan</i>	Notes
Richmond city	City	Approved, expires 2030-12-01	FMA RL 0, SRL 0; any 0	\$89,327.12	61; 0	

Member 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 member row, while the county table counts only its part in this county.

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

SOURCES

FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)

FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-26T151157Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)

NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

Supports B2-a and B2-b: assets and impacts

Local data required

County-level starter. The plan must describe impacts for each participant and its own assets.

- Critical facilities and lifelines per hazard
- A problem statement per participant 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

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>	EAL population equivalence <i>statistical value of life and injury, \$13.7M per life, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2025-12-02 <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
Avalanche											Not Applicable in NRI for this county
Coastal Flooding											Not Applicable in NRI for this county
Cold Wave	\$4,958,178,686	\$101,710,184	23,141	\$1,112	\$149,618	\$2,951,019	under 0.0001%				
Drought		\$55,178,988			\$380,316		0.689% (agriculture)				NRI has no building exposure for this hazard; agriculture shown
Earthquake	\$8,324,640,348		23,158	\$84,322		\$23,569	0.00101%				
Hail	\$4,958,178,686	\$101,710,184	23,141	\$355,820	\$28,069	\$24,290	0.00718%				
Heat Wave	\$4,958,178,686	\$101,710,184	23,141	\$2,562	\$4	\$892,022	under 0.0001%				

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>	EAL population equivalence <i>statistical value of life and injury, \$13.7M per life, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2025-12-02 <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
Hurricane	\$4,958,178,686	\$101,710,184	23,141	\$0	\$0	\$0	0%				
Ice Storm	\$4,958,178,686		23,141	\$38,586		\$102,459	0.000778%				
Inland Flooding	\$4,954,191,920	\$46,388,947	1,021	\$4,348,613	\$959,849	\$725,034	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. EAL as % of exposure: n/a.
Landslide	\$125,111,524		591	\$477		\$14,782	0.000382%				
Lightning	\$4,958,178,686		23,141	\$6,482		\$169,351	0.000131%				
Strong Wind	\$4,958,178,686	\$101,710,184	23,141	\$43,776	\$648	\$357,909	0.000883%				
Tornado	\$4,958,178,686	\$101,710,184	23,141	\$620,637	\$3,339	\$922,963	0.0125%	\$50,000			
Tsunami											Not Applicable in NRI for this county
Volcanic Activity											Not Applicable in NRI for this county
Wildfire	\$663,594,736	\$25,857,592	7,541	\$47,712	\$160	\$12,204	0.00719%				
Winter Weather	\$4,958,178,686	\$101,710,184	23,141	\$62,231	\$104	\$37,028	0.00126%				

Totals since 2025-12-02 (Storm Events through 2026-06-30): 1 county-coded records, 1 with a damage value recorded (including \$0), \$50,000; 1 zone-level records, 0 with a damage value recorded (including \$0), \$0 reported for the zone; Public Assistance on counted declarations none found (0 declarations, 0 with PA).

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

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 must not be added up; the unit total counts each declaration once.

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

SOURCES

FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-28, 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)

NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-28, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

NOAA National Weather Service, NWS county-public forecast zones correlation file, version bp03mr20 to bp16ap26 (11 files; newest bp16ap26), pulled 2026-09-28, <https://www.weather.gov/gis/ZoneCounty>

FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-27T010817Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)

FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-26T151157Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)

FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

Supports B2-a: context

County context

Measure	Value
Population	23,141
Building value (total, not at risk)	\$4,958,178,686
Agriculture value (total, not at risk)	\$101,710,184
NRI risk rating (all hazards)	Relatively Low
Expected annual loss, buildings and agriculture, all hazards	\$7,134,436
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)	\$6,232,631
Social vulnerability rating	Relatively Moderate
Community resilience rating	Relatively High
NRI version	December 2025

FEMA's all-hazard expected annual loss total adds buildings, agriculture and population equivalence; the two parts are shown separately so the property figure is not read as including the statistical value of life.

SOURCE

FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-28, 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)

Supports B2-c: repetitive loss

Repetitive loss in this county, both definitions

Definition	Properties	Severe repetitive loss	Properties
Repetitive loss, FMA definition (44 CFR 77.2)	0	Severe repetitive loss, FMA definition (44 CFR 77.2)	1
Repetitive loss, NFIP insurance definition	6	Severe repetitive loss, NFIP insurance definition	1

Your state NFIP coordinator's list may use the NFIP insurance definition, so its counts can be higher.

SOURCES

FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)
FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

Repeat-flood properties: county and state-level rows

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	1	6	1	6	0	1
ORRICK, CITY OF (community ID not in plan data)	0	0	2	0	2	0	1
RAY COUNTY *	0	1	4	1	4	0	0
State level, not in this county: county not reported	0	0	3	0	3	0	0

SOURCES

FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)

FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

Repeat-flood properties by plan member (NFIP community)

Member	NFIP community ID	RL, FMA properties	SRL, FMA properties	RL, NFIP properties	SRL, NFIP properties	Any category properties	Mitigated properties	Currently insured properties	Note
Ray County	290778	0	1	4	1	4	0	0	
Excelsior Springs city	290090	0	3	10	2	10	0	3	Whole community, including the part in Clay County; none of its repeat-flood properties are in this county.
Richmond city	290657	0	0	0	0	0	0	0	

Per-member types: XLSX sheet 'B2-c Members'.

Member 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 member row, while the county table counts only its part in this county.

SOURCES

FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)

FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

County repeat-flood properties by occupancy group

Occupancy group	RL, FMA properties	SRL, FMA properties	RL, NFIP properties	SRL, NFIP properties	Any category properties	Mitigated properties	Currently insured properties
single-family residential	0	1	4	1	4	0	1
2 to 4 unit residential	0	0	0	0	0	0	0
other residential	0	0	1	0	1	0	0
non-residential	0	0	1	0	1	0	0
not reported	0	0	0	0	0	0	0

Institutional properties cannot be separated in this data: FEMA's occupancy groups have no institutional class, so they fall in non-residential or other residential in the table by occupancy group.

SOURCES

FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)

FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)

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; OpenFEMA's fmaRL field description omits the Increased Cost of Compliance clause of 44 CFR 77.2(i). NFIP repetitive loss (FEMA insurance definition, nfipRL) is 2 or more claims over \$1,000 in 10 years and can drop to false when a property is mitigated. Also shown: NFIP severe repetitive loss, any category, mitigated and currently insured.

Your state NFIP coordinator's list may use the NFIP insurance definition, so its counts can be higher.

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

Counts may differ from your state NFIP coordinator's list, which is the source the Handbook names.

In this county 0 properties are FMA repetitive loss but not NFIP repetitive loss, and 6 properties are NFIP repetitive loss but not FMA repetitive loss.

Exact counts; no count suppression.

Sources

Every table above lists its own sources. The full list, for the plan's bibliography (FEMA review item A4-a):

1. FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-26T121003Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)
2. FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-27T010817Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)
3. FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-26T151157Z, pulled 2026-09-28, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)
4. FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-28, <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 2026-09-28, 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 2026-09-28, <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 2026-09-28, <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 2026-09-28, 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_Gazetteer/2024_Gaz_cousubs_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_Gazetteer/2024_Gaz_place_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_Gazetteer/2024_Gaz_unsd_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_Gazetteer/2024_Gaz_elsd_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_Gazetteer/2024_Gaz_scscd_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

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Cite this: Hazard Plain (2026). Ray County, MO: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-28; County area 29177). Preview: automated baseline. Built from FEMA OpenFEMA, the FEMA National Risk Index and NOAA NCEI Storm Events; source versions in the packet's Sources list.

Corrections: to report an error, name the packet, the table and what your records show. Contact: to be added

Hazard Plain release 2026-10. As of 2026-09-28; Storm Events data through 2026-06-30. File hazard-plain_2026-10_MO_29177. Preview: automated baseline.