

Arenac County, MI

Risk-assessment baseline packet

Unit **County area 26011** 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.

OPENFEMA DISCLAIMER

This product uses the Federal Emergency Management Agency's OpenFEMA API, but is not endorsed by FEMA. The Federal Government or FEMA cannot vouch for the data or analyses derived from these data after the data have been retrieved from the Agency's website(s).

Plan clock

Status	Approved, expires 2028-04-03	Plan	Arenac County HMP Update (FEMA plan 106299)
Approved	2023-04-04	Expires	2028-04-03
As of	2026-09-28	Days	553 days to expiry

What changed since your last plan (approved 2023-04-04)

New federal declarations	none (0 declaration rows; 0 counted incidents)	Storm Events records since approval	16 (data through 2026-06-30)
Repetitive loss now	FMA RL 2, SRL 1 (44 CFR 77.2); any definition: 7	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: 19 rows, in the section "Plan clock: Plan status for every jurisdiction listed in this county" after these cover pages.

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

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Plan clock

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
Arenac County	County	Approved, expires 2028-04-03	Arenac County HMP Update (FEMA plan 106299)	2023-04-04	2028-04-03	553		
Au Gres city	City	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Omer city	City	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Standish city	City	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Sterling village	Village	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Turner village	Village	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Twining village	Village	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry	Update underway	Notes
						<i>negative = days since expiry</i>		
Adams township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Arenac township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Au Gres township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Clayton township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Deep River township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Lincoln township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Mason township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Moffatt township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Sims township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Standish township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry	Update underway	Notes
						negative = days since expiry		
Turner township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Whitney township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	Arenac County HMP Update (FEMA plan 106299), pending adoption here	2023-04-04 by FEMA; not yet adopted here	2028-04-03 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.

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

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	EAL agriculture	EAL population equivalence	EAL total (see note)	Storm Events records since 1996	Evidence for an omission	Storm Events coverage note
				modeled dollars per year	modeled dollars per year	statistical value of life and injury, \$13.7M per life, not property damage	modeled dollars per year	count	NRI Not Applicable, no declaration and no Storm Events record since 1996	
1	Inland Flooding	Relatively Low	Very Low	\$3,481,200	\$39,173	\$319	\$3,520,693	14		
2	Cold Wave	Relatively Low	Relatively Low	\$210	\$15,208	\$913,668	\$929,086	9		
3	Tornado	Relatively Low	Relatively Low	\$309,773	\$489	\$149,718	\$459,979	5		
4	Strong Wind	Relatively Low	Relatively Low	\$219,229	\$3,205	\$196,572	\$419,006	45		Includes 3 High Wind records and 1 Strong Wind record, event types the NRI definition of this hazard leaves out.
5	Lightning	Relatively Low	Relatively Low	\$4,460		\$208,449	\$212,908	1		
6	Hail	Relatively Low	Relatively Low	\$145,773	\$5,123	\$7,872	\$158,768	40		
7	Winter Weather	Relatively Moderate	Relatively Moderate	\$3,501	\$218	\$96,941	\$100,660	51		

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
8	Heat Wave	Very Low	Very Low	\$385	under \$1	\$24,151	\$24,537	2		
9	Ice Storm	Very Low	Very Low	\$20,384		\$140	\$20,524	3		
10	Earthquake	Very Low	Very Low	\$14,820		\$3,881	\$18,702			Not in Storm Events. Storm Events coverage of this hazard is limited; absence is not evidence of low risk.
11	Wildfire	Very Low	Very Low	\$14,167	\$11	\$1,338	\$15,516	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.
12	Coastal Flooding	Very Low	Very Low	\$10,895		\$854	\$11,749	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
13	Hurricane	Very Low	Very Low	\$8,618	\$2,319	\$12	\$10,949	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
14	Landslide	Very Low	Very Low	\$13		\$226	\$239	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.
15	Drought	No Rating	No Expected Annual Losses		\$0		\$0	0		Declared 1 time; no Storm Events record of this type.
	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).
	Tsunami	Insufficient Data	Insufficient Data					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.
	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 5
Coastal 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.	4 of 5
Cold Wave	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	5 of 5
Drought	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	0 of 5
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.	5 of 5
Hail	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	5 of 5
Heat Wave	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	5 of 5
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.	5 of 5
Ice Storm	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	5 of 5
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.	5 of 5
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.	5 of 5
Lightning	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	5 of 5
Strong Wind	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	5 of 5
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.	5 of 5
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 5
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 5
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.	5 of 5
Winter Weather	Affects the whole planning area; national data do not distinguish locations within the county. Confirm locally.	5 of 5

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	9, 2007 to 2026 (9 zone-level)	1 day to 3 days (median 2 days); 7 with a recorded value	3 consecutive days, 2026-02-06 to 2026-02-08, 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	0					Temperature: in event narratives only; local data required.
Drought	US Drought Monitor D-scale	0					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)	45, 1977 to 2024	0.75 in to 3.5 in (median 1 in); 45 with a recorded value	3.5 in hail, 1998-09-26	Hail, 2015-08-02, \$10,000 property; \$0 crops (2015 dollars)	Event records naming member places: Sterling village (14 records), Standish city (8 records), Standish township (8 records), Au Gres city (7 records), Au Gres township (7 records), Twining village (3 records).	
Excessive Heat, Heat	heat index (narratives)	2, 2001 to 2018 (2 zone-level)	1 day to 9 days (median 5 days); 2 with a recorded value	9 consecutive days, 2001-08-01 to 2001-08-09, 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)	3, 2001 to 2022 (3 zone-level)		Ice Storm, 2013-04-11, \$50,000 property; \$0 crops, reported for the zone (2013 dollars); NWS zone MIZ042 (ARENAC), 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)	14, 1996 to 2020 (4 zone-level)		Flood, 2020-05-18, \$4,400,000 property; \$0 crops (2020 dollars)		Event records naming member places: Sterling village (5 records), Au Gres city (1 record), Au Gres township (1 record), Standish city (1 record), Standish township (1 record). Zone-level records (4) 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)	1, 2010 to 2010		Lightning, 2010-07-15, \$500 property; \$0 crops (2010 dollars)		Event records naming member places: Standish city (1 record), Standish township (1 record).	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)	4, 1998 to 2024 (4 zone-level)	45 kt (52 mph) to 50 kt (58 mph) (median 50 kt (58 mph)); 4 with a recorded value	50 kt (58 mph) estimated gust, High Wind, 2005-11-13; same speed and measurement basis also recorded on 2002-03-09; NWS zone MIZ042 (ARENAC), zone-level: may include parts of neighboring counties	Strong Wind, 2024-06-25, \$9,000 property; \$0 crops, reported for the zone (2024 dollars)	Zone-level records: applies countywide; national data do not locate these events within the county.	
Thunderstorm Wind	wind speed (kt and mph)	55, 1957 to 2025	50 kt (58 mph) to 60 kt (69 mph) (median 52 kt (60 mph)); 41 with a recorded value	60 kt (69 mph) estimated gust, Thunderstorm Wind, 2018-08-28; same speed and measurement basis also recorded on 2004-05-12, 2011-05-22		Event records naming member places: Sterling village (11 records), Standish city (7 records), Standish township (7 records), Omer city (5 records), Twining village (5 records), Au Gres city (3 records), Au Gres township (3 records), Turner township (3 records), Turner village (3 records), Arenac township (1 record).	

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)	9, 1977 to 2018	F/EF0 to F/EF2 (median F/EF1); 9 with a recorded value	F2 tornado, 1993-04-24, 7 mi path length (records before 1996 may include the whole path; rating and listing come from the county where the tornado began), 440 yd wide, \$50,000 property; crops not recorded (1993 dollars), 3 direct injuries	Tornado, 1977-07-04, \$250,000 property; crops not recorded (1977 dollars)	Event records naming member places: Au Gres city (2 records), Au Gres township (2 records), Sterling village (1 record).	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)	51, 1997 to 2025 (51 zone-level)		Winter Storm, 2020-01-11, \$4,000 property; \$0 crops, reported for the zone (2020 dollars); NWS zone MIZ042 (ARENAC), zone-level: may include parts of neighboring counties		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

11

Counted incidents

7

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
2020-07-09	2020-05-16	DR-4547-MI	Major disaster	SEVERE STORMS AND FLOODING	Dam/Levee Break (not an NRI hazard); also designated: Inland Flooding	\$621,577.26			
2020-03-27	2020-01-20	DR-4494-MI	Major disaster	COVID-19 PANDEMIC	Non-natural, not counted	\$543,586.30			
2020-03-13	2020-01-20	EM-3455-MI	Emergency	COVID-19	Non-natural, not counted	none found			same incident as DR-4494
2005-09-07	2005-08-29	EM-3225-MI	Emergency	HURRICANE KATRINA EVACUATION	Hurricane: evacuation support, not a local hazard event; not counted	none found			
2004-06-30	2004-05-20	DR-1527-MI	Major disaster	SEVERE STORMS, TORNADOES, AND FLOODING	Inland Flooding; Tornado: designated for Hazard Mitigation only (no Public or Individual Assistance for this county); not counted	PA not declared for this county			
1999-01-27	1999-01-02	EM-3137-MI	Emergency	MI - SEVERE WEATHER 1/2 / 99	Winter Weather	\$11,740.63			
1986-09-18	1986-09-10	DR-774-MI	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding	PA not declared for this county			
1978-01-27	1978-01-27	EM-3057-MI	Emergency	BLIZZARDS & SNOWSTORMS	Winter Weather	none found			
1977-03-02	1977-03-02	EM-3035-MI	Emergency	DROUGHT	Drought	none found			
1973-04-12	1973-04-12	DR-371-MI	Major disaster	SEVERE STORMS & FLOODING	Inland Flooding	none found			
1972-12-01	1972-12-01	DR-363-MI	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)

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

Statewide declarations

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	Flags	Notes
1956-04-05	1956-04-05	DR-53-MI	Major disaster	TORNADO	Tornado		
1953-06-09	1953-06-09	DR-6-MI	Major disaster	TORNADO	Tornado		
1953-06-02	1953-06-02	DR-4-MI	Major disaster	TORNADO	Tornado		

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)

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	9	5	0	5	0	0	1996 to 2026-06-30	
Drought	0	0	0	0	1	0	1996 to 2026-06-30	No Storm Events records of this type; 1 federal declared incident (see declarations table)
Earthquake	0	0	0	0	0	0		No Storm Events record; local data required (e.g., USGS).
Hail	45	2	2	4	0	0	1955 to 2026-06-30	
Heat Wave	2	0	0	0	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	3	0	0	1	0	0	1996 to 2026-06-30	
Inland Flooding	14	0	0	0	4	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	1	0	0	0	0	0	1996 to 2026-06-30	
Strong Wind	59	5	1	6	0	0	1955 to 2026-06-30	Includes 3 High Wind records and 1 Strong Wind record, event types the NRI definition of this hazard leaves out.
Tornado	9	0	0	0	0	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	51	4	0	4	2	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
2026-02-06	Cold/Wind Chill		damage not reported	0, 0	NWS zone MIZ042 (ARENAC), zone-level: may include parts of neighboring counties	new since last plan; within last 5 years	B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill
2020-05-18	Flood		\$4,400,000 property; \$0 crops (2020 dollars)	0, 0	ALGER to WORTH		B1-c worst recorded: Flash Flood, Flood, Lakeshore Flood
2020-01-11	Winter Storm		\$4,000 property; \$0 crops, reported for the zone (2020 dollars)	0, 0	NWS zone MIZ042 (ARENAC), zone-level: may include parts of neighboring counties		B1-c worst recorded: Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet
2018-08-28	Thunderstorm Wind	60 kt (69 mph) estimated gust	\$75,000 property; \$0 crops (2018 dollars)	0, 0	STERLING		B1-c worst recorded: Thunderstorm Wind
2013-04-11	Ice Storm		\$50,000 property; \$0 crops, reported for the zone (2013 dollars)	0, 0	NWS zone MIZ042 (ARENAC), zone-level: may include parts of neighboring counties		B1-c worst recorded: Ice Storm
2012-05-27	Thunderstorm Wind	50 kt (58 mph) estimated gust	\$27,000 property; \$0 crops (2012 dollars)	0, 4	OMER		deaths or injuries recorded
2010-07-15	Lightning		\$500 property; \$0 crops (2010 dollars)	0, 0	STANDISH		B1-c worst recorded: Lightning
2005-11-13	High Wind	50 kt (58 mph) estimated gust	\$5,000 property; crops not reported, reported for the zone (2005 dollars)	0, 0	NWS zone MIZ042 (ARENAC), zone-level: may include parts of neighboring counties		B1-c worst recorded: High Wind and Strong Wind (outside NRI Strong Wind definition)
2001-08-01	Heat		damage not reported	0, 0	NWS zone MIZ042 (ARENAC), zone-level: may include parts of neighboring counties		B1-c worst recorded: Excessive Heat, Heat
1998-09-26	Hail	3.5 in	damage not reported	0, 0	STERLING		B1-c worst recorded: Hail
1997-07-02	Tornado	F1, 3 mi within this county, 150 yd wide	damage not reported	0, 1	AU GRES		deaths or injuries recorded
1993-04-24	Tornado	F2, 7 mi path length (records before 1996 may include the whole path; rating and listing come from the county where the tornado began), 440 yd wide	\$50,000 property; crops not recorded (1993 dollars)	0, 3	Skidway		deaths or injuries recorded

The full list is in the **XLSX file, sheet "B1-d Storm Events history" (193 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.

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

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	0.014	events per year at a location (modeled)	about 0.014 per year at a given location in the county		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)
Cold Wave	2.16	event-days per year	about 2.16 days per year	Likely	event-days in 4 of 30 years, 1996 to 2025 (13.3%)	41	2005-11-12 to 2024-11-12 (19 years)	countywide	NRI gives about 2.16 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 4 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	0	event-days per year	none modeled		event-days in 0 of 30 years, 1996 to 2025 (0%)	0	2000 to 2025 (25.25 years; D3 and D4 only)	countywide	No recorded event-days, 1996 to 2025; descriptor not assigned
Earthquake	0.000442	annual probability at a location	chance a given location in the county has at least minor- damage shaking in a year: 0.0442%			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	1.64	events per year	about 1.64 per year	Highly likely	FEMA annualized frequency (modeled)	71.0 (modeled)	1986 to 2023 (38 years)	countywide	
Heat Wave	1	event-days per year	about 1 days per year	Possible	event-days in 2 of 30 years, 1996 to 2025 (6.67%)	17	2005-11-12 to 2024-11-12 (19 years)	countywide	NRI gives about 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 2 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.

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
Hurricane	0.0144	events per year	about 1 in 69 years	Possible	FEMA annualized frequency (modeled)	6	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	0.387	event-days per year	about 0.387 days per year	Likely	event-days in 3 of 30 years, 1996 to 2025 (10%)	16	1946-12-31 to 2014-02-12 (67 years)	countywide	
Inland Flooding	0.464	event-days per year	about 0.464 days per year	Likely	event-days in 8 of 30 years, 1996 to 2025 (26.7%)	13	1996 to 2023 (28 years)	see B1-f	
Landslide	0.0491	events per year (modeled)	about 1 in 20 years	Possible	FEMA annualized frequency (modeled)	not shown	modeled	see B1-f	
Lightning	28.5	days per year with a strike	about 28.5 days per year	Highly likely	FEMA annualized frequency (modeled)	not shown	1995 to 2023 (29 years; CONUS)	countywide	
Strong Wind	2.11	events per year	about 2.11 per year	Highly likely	FEMA annualized frequency (modeled)	50	1986 to 2023 (38 years)	countywide	
Tornado	0.159	events per year	about 1 in 6 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)			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)
Volcanic Activity		annual probability				not shown	modeled	see B1-f	Not Applicable in NRI for this county; no descriptor.
Wildfire	0.000228	annual probability at a location	chance a given location in the county burns in a year: 0.0228%		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	11.9	event-days per year	about 11.9 days per year	Likely	event-days in 24 of 30 years, 1996 to 2025 (80%)	227	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)
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/>

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	24	30	0.8
Hail	2.00 in+	1996 to 2025	3	30	0.1
Strong Wind (Thunderstorm Wind records)	50-64 kt	1996 to 2025	41	30	1.37
Strong Wind (Thunderstorm Wind records)	65 kt+	1996 to 2025	0	30	0
Strong Wind (Thunderstorm Wind records)	unmeasured or below 50 kt	1996 to 2025	0	30	0

Hazard	Band	Years	Events <i>county-coded records</i>	Years in period	Events per year <i>events / years</i>
Tornado	EF0-1	1996 to 2025	5	30	0.167
Tornado	EF2-3	1996 to 2025	0	30	0
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 5				Not Applicable 5	
Coastal Flooding	4 of 5	79.8	80.9	84.6	Relatively Low 4, No Rating 1	
Cold Wave	5 of 5	76.8	83.7	90.0	Relatively High 4, Relatively Moderate 1	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	0 of 5				No Rating 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.
Earthquake	5 of 5	11.5	15.9	23.0	Very Low 5	
Hail	5 of 5	70.9	78.1	83.5	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.
Heat Wave	5 of 5	4.9	6.8	10.2	Very Low 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.
Hurricane	5 of 5	37.5	42.2	43.8	Very Low 5	
Ice Storm	5 of 5	21.4	41.1	67.0	Relatively Low 4, Very Low 1	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	5 of 5	44.4	68.4	83.3	Relatively High 1, Relatively Moderate 3, Relatively Low 1	
Landslide	5 of 5	61.7	66.2	86.8	Relatively Low 1, Very Low 4	
Lightning	5 of 5	84.0	90.2	95.9	Very High 1, 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.

Hazard	Tracts <i>rated of all</i>	Risk score			Tracts by rating	Note
		min <i>NRI score, 0 to 100</i>	Median	Max		
Strong Wind	5 of 5	81.1	88.4	94.8	Relatively High 4, Relatively Moderate 1	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	5 of 5	40.4	55.3	74.5	Relatively High 1, Relatively Moderate 2, Relatively Low 2	
Tsunami	0 of 5				Insufficient Data 5	
Volcanic Activity	0 of 5				Not Applicable 5	
Wildfire	5 of 5	67.6	75.6	84.6	Relatively Low 4, Very Low 1	
Winter Weather	5 of 5	89.9	94.0	96.6	Very High 1, 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.

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	Public Assistance matched	Event records naming this place	Notes
			<i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	<i>federal share obligated, nominal dollars</i>	<i>all years; since the member's plan</i>	
Arenac County	County	Approved, expires 2028-04-03	FMA RL 0, SRL 0; any 0	none found	0; 0	
Au Gres city	City	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 1	\$1,360.50	13; no approved plan	
Omer city	City	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	5; no approved plan	
Standish city	City	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	\$2,897.38	17; no approved plan	
Sterling village	Village	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	31; no approved plan	

Member	Type	Plan status	Repetitive loss	Public Assistance matched	Event records naming this place	Notes
			<i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	<i>federal share obligated, nominal dollars</i>	<i>all years; since the member's plan</i>	
Turner village	Village	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	3; no approved plan	
Twining village	Village	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	8; no approved plan	
Adams township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	0; no approved plan	
Arenac township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 1, SRL 1; any 3	none found	1; no approved plan	
Au Gres township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	13; no approved plan	
Clayton township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	0; no approved plan	
Deep River township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 1, SRL 0; any 1	none found	0; no approved plan	
Lincoln township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	0; no approved plan	
Mason township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	0; no approved plan	
Moffatt township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	0; no approved plan	
Sims township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	0; no approved plan	

Member	Type	Plan status	Repetitive loss	Public Assistance matched	Event records naming this place	Notes
			<i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	<i>federal share obligated, nominal dollars</i>	<i>all years; since the member's plan</i>	
Standish township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 2	none found	17; no approved plan	
Turner township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	3; no approved plan	
Whitney township	Township	Plan 106299 approved 2023-04-04, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	none found	0; no approved plan	

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	Agriculture exposure	Population exposed	EAL buildings	EAL agriculture	EAL population equivalence	EAL as % of exposure	Storm Events damage since 2023-04-04	Zone-level damage since plan	Public Assistance since plan	Note
	<i>modeled dollars</i>	<i>modeled dollars</i>	<i>people</i>	<i>modeled dollars per year</i>	<i>modeled dollars per year</i>	<i>statistical value of life and injury, \$13.7M per life, not property damage</i>	<i>buildings; agriculture where noted</i>	<i>county-coded records, property plus crops, nominal dollars</i>	<i>property plus crops, reported for the zone</i>	<i>nominal dollars; see note</i>	
Avalanche											Not Applicable in NRI for this county

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 2023-04-04 <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
Coastal Flooding	\$1,397,640,619		708	\$10,895		\$854	0.00078%				
Cold Wave	\$4,983,753,672	\$55,366,227	14,991	\$210	\$15,208	\$913,668	under 0.0001%				
Drought		\$0			\$0						agriculture exposure is 0 in NRI
Earthquake	\$8,546,031,281		15,002	\$14,820		\$3,881	0.000173%				
Hail	\$4,983,753,672	\$55,366,227	14,991	\$145,773	\$5,123	\$7,872	0.00292%	\$0			
Heat Wave	\$4,983,753,672	\$55,366,227	14,991	\$385	under \$1	\$24,151	under 0.0001%				
Hurricane	\$4,964,646,658	\$55,113,899	14,936	\$8,618	\$2,319	\$12	0.000174%				
Ice Storm	\$4,924,616,415		14,849	\$20,384		\$140	0.000414%				
Inland Flooding	\$4,961,024,692	\$6,161,604	659	\$3,481,200	\$39,173	\$319	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	\$24,796,980		65	\$13		\$226	under 0.0001%				
Lightning	\$4,983,753,672		14,991	\$4,460		\$208,449	under 0.0001%				
Strong Wind	\$4,983,753,672	\$55,366,227	14,991	\$219,229	\$3,205	\$196,572	0.0044%	\$15,000	\$9,000		Storm Events damage since the plan includes 1 zone-level Strong Wind record (\$9,000), an event type the NRI definition of this hazard leaves out.
Tornado	\$4,983,753,672	\$55,366,227	14,991	\$309,773	\$489	\$149,718	0.00622%				
Tsunami											NRI publishes no building exposure for this county
Volcanic Activity											Not Applicable in NRI for this county
Wildfire	\$531,558,713	\$6,460,202	2,619	\$14,167	\$11	\$1,338	0.00267%				
Winter Weather	\$4,983,753,672	\$55,366,227	14,991	\$3,501	\$218	\$96,941	under 0.0001%		\$0		

Totals since 2023-04-04 (Storm Events through 2026-06-30): 6 county-coded records, 5 with a damage value recorded (including \$0), \$15,000; 10 zone-level records, 3 with a damage value recorded (including \$0), \$9,000 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	14,991
Building value (total, not at risk)	\$4,983,753,672
Agriculture value (total, not at risk)	\$55,366,227
NRI risk rating (all hazards)	Very Low
Expected annual loss, buildings and agriculture, all hazards	\$4,299,174
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)	\$1,604,140
Social vulnerability rating	Relatively High
Community resilience rating	Very 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)	2	Severe repetitive loss, FMA definition (44 CFR 77.2)	1
Repetitive loss, NFIP insurance definition	7	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	2	1	7	1	7	0	3
AUGRES, CITY OF	0	0	1	0	1	0	1
STANDISH, TOWNSHIP OF	0	0	2	0	2	0	0
ARENAC, TOWNSHIP OF	1	1	3	1	3	0	2
DEEP RIVER, TOWNSHIP OF	1	0	1	0	1	0	0
State level, not in this county: county not reported	0	0	4	0	4	0	0

SOURCESFEMA, 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 <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>	Note
Arenac County	261805	0	0	0	0	0	0	0	
Au Gres city	260012	0	0	1	0	1	0	1	
Omer city	260622	0	0	0	0	0	0	0	
Standish city	260016	0	0	0	0	0	0	0	
Sterling village	261491	0	0	0	0	0	0	0	
Turner village	260550	0	0	0	0	0	0	0	
Twining village	261492	0	0	0	0	0	0	0	
Adams township	261487	0	0	0	0	0	0	0	
Arenac township	260251	1	1	3	1	3	0	2	
Au Gres township	260013	0	0	0	0	0	0	0	
Clayton township	261488	0	0	0	0	0	0	0	
Deep River township	260350	1	0	1	0	1	0	0	
Lincoln township	260014	0	0	0	0	0	0	0	
Mason township	261489	0	0	0	0	0	0	0	
Moffatt township	261490	0	0	0	0	0	0	0	
Sims township	260015	0	0	0	0	0	0	0	
Standish township	260017	0	0	2	0	2	0	0	
Turner township	260351	0	0	0	0	0	0	0	
Whitney township	260018	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 <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>
single-family residential	2	1	7	1	7	0	3
2 to 4 unit residential	0	0	0	0	0	0	0
other residential	0	0	0	0	0	0	0
non-residential	0	0	0	0	0	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 fmaRI field description omits the Increased Cost of Compliance clause of 44 CFR 77.2(i). NFIP repetitive loss (FEMA insurance definition, nfipRI) 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 5 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_Gazetteer/2024_Gaz_cousubs_national.zip

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Cite this: Hazard Plain (2026). Arenac County, MI: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-28; County area 26011). 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_MI_26011. Preview: automated baseline.