

Muskegon County, MI

Risk-assessment baseline packet

County FIPS: 26121 Release: 2026-10 Data as of: 2026-09-30 Storm Events data through: 2026-06-30

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Summary

Plan status as of 2026-09-30: Approved, expires 2030-05-20. Plan: Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169), approved 2025-05-21. Since the plan was approved on 2025-05-21: 1 new hazard declaration (1 incident): DR-4925-MI (Severe Storms, Tornadoes, and Flooding). NOAA Storm Events records since that date: 7 records (data through 2026-06-30). Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Inland Flooding (\$17,137,628 a year), Tornado (\$3,894,394) and Strong Wind (\$3,450,839). Repetitive-loss flood properties now: FMA RL 0, SRL 0 (44 CFR 77.2); any definition: 5. The tables that follow are organized by the items of FEMA's Local Mitigation Plan Review Tool, Element B (B1-a to B2-c); each heading says which item its tables support.

TERMS USED

EAL: expected annual loss: FEMA's modeled average yearly loss from a hazard.
NRI: FEMA's National Risk Index (version 1.20, December 2025).
NFIP: National Flood Insurance Program.
RL, SRL: repetitive loss and severe repetitive loss: flood-insured properties with repeated claims (definitions in B2-c).
FMA, HMGP: Flood Mitigation Assistance and Hazard Mitigation Grant Program, FEMA mitigation grants.
PA: FEMA Public Assistance: disaster aid to governments and some nonprofits.
Zone-level: NOAA logged the event for a National Weather Service forecast zone, which may include parts of neighboring counties.
County-coded: NOAA logged the event to this county.
FIPS: the federal code for a place; 26121 is this area.
D0 to D4: U.S. Drought Monitor categories, from abnormally dry (D0) to exceptional drought (D4).
F/EF, EFU: Fujita and Enhanced Fujita tornado ratings; EFU is an unrated tornado.
kt, CONUS: knots (1 kt is about 1.15 mph); the contiguous United States.
CFR: Code of Federal Regulations.
A4-a, E1-a: other items of FEMA's Local Mitigation Plan Review Tool (sources, and changes since the last plan).
Dollars: nominal (as reported, labeled with the year), not adjusted for inflation.

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Plan clock

Status:	Approved, expires 2030-05-20	Plan:	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)
Approved:	2025-05-21	Days to expiry:	1,328

What changed since your last plan (approved 2025-05-21)

New federal declarations:	1 new hazard declaration (1 incident): DR-4925-MI (Severe Storms, Tornadoes, and Flooding)	Storm Events records since approval:	7 records (data through 2026-06-30)
Repetitive loss now:	FMA RL 0, SRL 0 (44 CFR 77.2); any definition: 5	Repeat-flood change:	this release sets the baseline count.

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

Plan status for every jurisdiction listed in this county: 28 rows, in the section "Plan clock: Plan status for every jurisdiction listed in this county" on the following pages.

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

Plan clock

Plan status for every jurisdiction listed in this county

Source: 1

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry negative = days since expiry	Notes
Muskegon County	County	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30
Casnovia village	Village	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30
Fruitport village	Village	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-05-28
Lakewood Club village	Village	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-06-04
Montague city	City	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-23
Muskegon city	City	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-23
Muskegon Heights city	City	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30
North Muskegon city	City	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-05-28
Norton Shores city	City	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-06-04
Ravenna village	Village	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30
Roosevelt Park city	City	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30
Whitehall city	City	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-05-28
Blue Lake township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-05-28
Casnovia township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-23
Cedar Creek township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-06-10
Dalton township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30
Egelston township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	
Fruitland township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-05-28
Fruitport charter township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-02

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry <i>negative = days since expiry</i>	Notes
Holton township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-06-10
Laketon township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-05-28
Montague township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30
Moorland township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	
Muskegon charter township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	
Ravenna township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-06-18
Sullivan township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-16
White River township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	
Whitehall township	Township	Approved, expires 2030-05-20	Muskegon County 2025 Hazard Mitigation Plan (FEMA plan 110169)	2025-05-21	2030-05-20	1,328	this jurisdiction approved 2025-07-30

Supports FEMA checklist item B1-a: hazard identification

Hazards NRI does not cover (local data needed)

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

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

Sources: 5, 6

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL total (see note) <i>modeled dollars per year</i>	Storm Events records, 1996 to 2026-06-30 <i>count</i>	Storm Events coverage note
1	Inland Flooding	Relatively Moderate	Relatively Moderate	\$17,127,857	\$8,395	\$1,376	\$17,137,628	14	
2	Tornado	Relatively Moderate	Relatively Moderate	\$1,516,364	\$1,373	\$2,376,657	\$3,894,394	3	
3	Strong Wind	Relatively High	Relatively High	\$2,021,651	\$290,132	\$1,139,056	\$3,450,839	118	Includes 18 High Wind and 1 Strong Wind records (NOAA non-thunderstorm wind types, outside NRI's Strong Wind definition).
4	Cold Wave	Relatively Low	Relatively Moderate	\$127	\$30,771	\$1,233,079	\$1,263,978	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
5	Heat Wave	Relatively Low	Relatively Low	\$4,414	\$1	\$631,832	\$636,247	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
6	Lightning	Relatively Moderate	Relatively Moderate	\$37,924	n/a	\$444,501	\$482,425	1	
7	Hail	Relatively Low	Relatively Low	\$222,536	\$17,725	\$24,085	\$264,346	49	
8	Earthquake	Very Low	Very Low	\$184,791	n/a	\$61,032	\$245,823		Storm Events does not record earthquakes.
9	Ice Storm	Relatively Moderate	Relatively Moderate	\$193,732	n/a	\$51,559	\$245,291	3	
10	Winter Weather	Relatively Low	Relatively Low	\$31,062	\$941	\$9,955	\$41,958	131	Includes 1 Sleet record (outside NRI's Winter Weather definition).
11	Wildfire	Very Low	Very Low	\$11,685	\$9	\$2,416	\$14,110	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).

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>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL total (see note) <i>modeled dollars per year</i>	Storm Events records, 1996 to 2026-06-30 <i>count</i>	Storm Events coverage note
12	Coastal Flooding	Very Low	Very Low	\$6,832	n/a	\$616	\$7,448	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
13	Hurricane	Very Low	Very Low	\$5,700	\$1,030	\$4	\$6,734	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
14	Landslide	Very Low	Very Low	\$226	n/a	\$876	\$1,102	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
15	Drought	No Rating	No Expected Annual Losses	n/a	\$0	n/a	\$0	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Tsunami	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).

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

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

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

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

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

Supports FEMA checklist item B1-b: hazard location

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

Coastal Flooding and 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.

Hazards that vary within the county: highest-rated census tracts

Source: 5

Hazard	Highest-rated census tracts <i>NRI risk rating, score 0 to 100</i>
Earthquake	tract 4.02 (Very Low, 37.5); tract 26.02 (Very Low, 35.9); tract 21 (Very Low, 34.1)
Hurricane	tract 30 (Very Low, 27.3); tract 38 (Very Low, 27.0); tract 29 (Very Low, 26.5)
Landslide	tract 33 (Relatively Low, 85.7); tract 40 (Relatively Low, 82.6); tract 23 (Very Low, 79.4)
Tornado	tract 4.02 (Relatively Moderate, 73.1); tract 28 (Relatively Moderate, 71.5); tract 19.02 (Relatively Moderate, 68.0)
Tsunami	no tract has a National Risk Index rating for this hazard
Wildfire	tract 36 (Relatively Low, 71.3); tract 33 (Relatively Low, 70.7); tract 40 (Relatively Low, 69.7)

Up to 3 census tracts per hazard, highest National Risk Index rating first, then highest score; a tract number is the Census tract number (for example 4.02 is Census Tract 4.02). FEMA's Resilience Analysis and Planning Tool maps the National Risk Index for every tract: <https://www.fema.gov/emergency-managers/practitioners/resilience-analysis-and-planning-tool>

Supports FEMA checklist item B1-c: hazard extent

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

Sources: 6, 7

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Coastal Flood, Storm Surge/ Tide	none in data (flood depth: FIRM)	0					Flood depth: see the FEMA Flood Insurance Rate Map.
Cold/Wind Chill, Extreme Cold/Wind Chill	wind chill	0					Wind chill: in event narratives only (local data needed).
Frost/Freeze (outside NRI's Cold Wave definition)	crop damage	0					Temperature: in event narratives only (local data needed).
Drought	U.S. Drought Monitor scale (D0 to D4)	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					Storm Events does not record earthquakes; the USGS earthquake catalog is the source.
Hail	hail size (inches)	66 records, 1956 to 2024	0.75 in to 4 in (median 0.88 in); 66 with a recorded value	4 in hail, 1956-05-13	Hail, 2020-04-07, \$500,000 property; \$0 crops (2020 dollars)	Event records naming jurisdictions in the plan: Muskegon charter township (10 records), Muskegon city (10 records), Whitehall city (6 records), Whitehall township (6 records), Lakewood Club village (3 records), Montague city (3 records), Montague township (3 records), Fruitport charter township (2 records), Fruitport village (2 records), Holton township (2 records); and 3 more jurisdictions (see the Excel file).	
Excessive Heat, Heat	heat index (in event narratives)	0					Heat index: in event narratives only (local data needed).
Hurricane, Tropical Storm, Tropical Depression	Saffir-Simpson	0					Storm Events files every zone of a storm's episode under the storm's type; flooding from the storm is filed as Flood or Flash Flood records.

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Ice Storm	Sperry-Piltz ice scale (local data)	3 records, 1997 to 2019 (3 zone-level)		Ice Storm, 2019-02-05, \$2,000,000 property; \$0 crops (2019 dollars); NWS zone MIZ050		Countywide (zone-level records).	Ice thickness: in event narratives only (local data needed).
Flash Flood, Flood, Lakeshore Flood	damage and flood days (flood depth: FIRM)	14 records, 1997 to 2020 (3 zone-level)		Flood, 2020-05-18, \$6,000,000 property; \$0 crops (2020 dollars)		Event records naming jurisdictions in the plan: Muskegon charter township (2 records), Muskegon city (2 records), Montague city (1 record), Montague township (1 record), Whitehall city (1 record), Whitehall township (1 record). Zone-level records (3) apply countywide.	Flood depth: see the FEMA Flood Insurance Rate Map. Storm Events damage is often \$0 or blank for floods, major ones included; FEMA Public Assistance by declaration (B1-d) shows which floods cost the most.
Debris Flow	none (count and damage only)	0					Physical measure: in event narratives only (local data needed).
Lightning	annualized frequency (the measure FEMA's Local Mitigation Planning Handbook names)	1 record, 1998		Lightning, 1998-07-21, \$40,000 property; crops not reported (1998 dollars)		Event records naming jurisdictions in the plan: Muskegon charter township (1 record), Muskegon city (1 record).	Storm Events lists lightning with damage or casualties; physical measure in event narratives only (local data needed).
High Wind and Strong Wind (outside NRI's Strong Wind definition)	wind speed (kt and mph)	19 records, 1997 to 2024 (19 zone-level)	42 kt (48 mph) to 67 kt (77 mph) (median 53.5 kt (62 mph)); 18 with a recorded value	67 kt (77 mph), measurement type not recorded, High Wind, 1998-11-10, 1 direct death (reported for the zone); NWS zone MIZ050	High Wind, 2017-03-08, \$15,000,000 property; \$0 crops, reported for the zone (2017 dollars)	Countywide (zone-level records).	
Thunderstorm Wind	wind speed (kt and mph)	152 records, 1956 to 2026	50 kt (58 mph) to 74 kt (85 mph) (median 53 kt (61 mph)); 108 with a recorded value	74 kt (85 mph) estimated gust, Thunderstorm Wind, 2014-04-12	Thunderstorm Wind, 1998-05-31, \$24,210,000 property; \$5,000,000 crops (1998 dollars)	Event records naming jurisdictions in the plan: Muskegon charter township (24 records), Muskegon city (24 records), Montague city (7 records), Montague township (7 records), Ravenna township (7 records), Ravenna village (7 records), Whitehall city (7 records), Whitehall township (7 records), Fruitport charter township (5 records), Fruitport village (5 records); and 9 more jurisdictions (see the Excel file).	
Tornado	Enhanced Fujita (Fujita before Feb 2007)	8 records, 1956 to 2013	F/EF0 to F/EF2 (median F/EF0); 6 with a recorded value	F2 tornado, 1965-09-04, 33 yd wide, \$25,000 property; crops not recorded (1965 dollars)	Tornado, 2013-11-17, \$50,000 property; \$0 crops (2013 dollars)	Event records naming jurisdictions in the plan: Roosevelt Park city (1 record).	Before 1996 a tornado is listed once, under the county where it began, with its whole path's rating and length; from 1996 on, each county lists its own segment. Length is not used to rank tornadoes (see Methods).

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Tsunami	none (count and damage only)	0					Physical measure: in event narratives only (local data needed).
Wildfire	acres burned (local data)	0					Acres burned: in event narratives only (local data needed).
Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet	none in data (snowfall: local data)	131 records, 1996 to 2026 (131 zone-level)		Heavy Snow, 2023-10-31, \$500,000 property; \$0 crops (2023 dollars); NWS zone MIZ050		Countywide (zone-level records).	Snow depth: in event narratives only (local data needed).

Where a hazard names more than 10 jurisdictions, the table lists the 10 with the most records; every one is in the Excel file, sheet "B1-c Extent".

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

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

Supports FEMA checklist item B1-d: previous occurrences

Federal declarations for this county: 14 declarations covering 10 separate hazard incidents counted in this packet (declarations for the same incident count once; non-natural and evacuation-only declarations are not counted).

Federal disaster declarations for this county

Sources: 1, 2, 3

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance <i>federal share obligated, nominal dollars</i>	Flags	Notes
2026-06-30	2026-04-10	DR-4925-MI	Major disaster	Severe Storms, Tornadoes, and Flooding	Inland Flooding (primary); also designated: Tornado	PA not declared for this county	new since last plan; within last 5 years	
2020-03-27	2020-01-20	DR-4494-MI	Major disaster	COVID-19 Pandemic	Non-natural, not counted	\$3,499,763.35		
2020-03-13	2020-01-20	EM-3455-MI	Emergency	COVID-19	Non-natural, not counted	no Public Assistance recorded		same incident as DR-4494
2013-06-18	2013-04-16	DR-4121-MI	Major disaster	Flooding	Inland Flooding	no Public Assistance recorded		
2005-09-07	2005-08-29	EM-3225-MI	Emergency	Hurricane Katrina Evacuation	Hurricane: evacuation support, not a local hazard event; not counted	no Public Assistance recorded		
2004-06-30	2004-05-20	DR-1527-MI	Major disaster	Severe Storms, Tornadoes, and Flooding	Inland Flooding; Tornado	PA not declared for this county		
2001-01-10	2000-12-11	EM-3160-MI	Emergency	Snow	Winter Weather	\$89,884.50		
1999-01-27	1999-01-02	EM-3137-MI	Emergency	Mi - Severe Weather 1/2 / 99	Winter Weather	\$66,732.38		

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance	Flags	Notes
						<i>federal share obligated, nominal dollars</i>		
1998-06-24	1998-05-29	DR-1226-MI	Major disaster	Severe Storms	Hazard not mapped (severe storm title names no single hazard); not counted	no Public Assistance recorded		
1986-09-18	1986-09-10	DR-774-MI	Major disaster	Severe Storms & Flooding	Inland Flooding	no Public Assistance recorded		
1985-09-18	1985-09-05	DR-744-MI	Major disaster	Severe Storms and Flooding	Inland Flooding	no Public Assistance recorded		
1978-01-27	1978-01-27	EM-3057-MI	Emergency	Blizzards & Snowstorms	Winter Weather	no Public Assistance recorded		
1976-03-19	1976-03-19	DR-495-MI	Major disaster	Severe Storms, Tornadoes, Icing & Flooding	Inland Flooding; Tornado	no Public Assistance recorded		
1975-09-30	1975-09-30	DR-486-MI	Major disaster	Severe Storms, High Winds & Flooding	Inland Flooding (primary); also designated: Strong Wind	no Public Assistance recorded		

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

Statewide declarations

Source: 2

Declared	Incident began	FEMA number	Type	Title	Mapped hazard
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, so they are listed on every county page in the state and not counted with county rows. Local data needed: whether each one affected this county.

Previous occurrences by hazard, with explicit no-event rows

Sources: 2, 6, 7

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval <i>records</i>	In the 12 months before plan approval <i>records</i>	Last 5 years <i>records</i>	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
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	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Drought	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Earthquake	0	0	0	0	0	0		Storm Events does not record earthquakes; the USGS earthquake catalog is the source.
Hail	66	0	1	3	0	0	1955 to 2026-06-30	
Heat Wave	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval <i>records</i>	In the 12 months before plan approval <i>records</i>	Last 5 years <i>records</i>	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
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	0	0	0	1996 to 2026-06-30	
Inland Flooding	14	0	0	0	7	1	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	171	2	7	15	1	0	1955 to 2026-06-30	Includes 18 High Wind and 1 Strong Wind records.
Tornado	8	0	0	0	3	1	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
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	131	5	1	12	3	0	1996 to 2026-06-30	Includes 1 Sleet record.

Notable Storm Events records

Sources: 1, 6, 7

Date	Event type	Magnitude or extent	Damage <i>nominal dollars</i>	Deaths, injuries <i>direct only</i>	Location	Flags	Why listed
2023-10-31	Heavy Snow		\$500,000 property; \$0 crops, reported for the zone (2023 dollars)	0, 0	NWS zone MIZ050 (MUSKEGON), zone-level	within last 5 years	B1-c worst recorded: Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet
2020-05-18	Flood		\$6,000,000 property; \$0 crops (2020 dollars)	0, 0	MONTAGUE ARPT to NORTON SHRS		B1-c worst recorded: Flash Flood, Flood, Lakeshore Flood
2019-02-05	Ice Storm		\$2,000,000 property; \$0 crops, reported for the zone (2019 dollars)	0, 0	NWS zone MIZ050 (MUSKEGON), zone-level		B1-c worst recorded: Ice Storm
2017-03-08	High Wind	52 kt (60 mph) estimated gust	\$15,000,000 property; \$0 crops, reported for the zone (2017 dollars)	0, 0	NWS zone MIZ050 (MUSKEGON), zone-level		B1-c most damaging: High Wind and Strong Wind
2014-04-12	Thunderstorm Wind	74 kt (85 mph) estimated gust	\$1,000,000 property; \$0 crops (2014 dollars)	0, 0	MUSKEGON HGTS		B1-c worst recorded: Thunderstorm Wind
2013-11-17	Tornado	EF0, 3.86 mi within this county, 75 yd wide	\$50,000 property; \$0 crops (2013 dollars)	0, 0	TRENT to BAILEY		B1-c most damaging: Tornado
2002-08-21	Thunderstorm Wind	53 kt (61 mph) estimated	\$10,000 property; crops not reported (2002 dollars)	0, 2	NORTON SHRS		deaths or injuries recorded
1998-11-10	High Wind	67 kt (77 mph), measurement type not recorded	damage not reported	1, 0	NWS zone MIZ050 (MUSKEGON), zone-level		deaths or injuries recorded
1998-07-21	Lightning		\$40,000 property; crops not reported (1998 dollars)	0, 0	MUSKEGON		B1-c worst recorded: Lightning
1998-05-31	Thunderstorm Wind	speed not recorded	\$24,210,000 property; \$5,000,000 crops (1998 dollars)	0, 2	MONTAGUE to RAVENNA		deaths or injuries recorded
1965-09-04	Tornado	F2, 33 yd wide	\$25,000 property; crops not recorded (1965 dollars)	0, 0	location not recorded		B1-c worst recorded: Tornado
1956-05-13	Hail	4 in	damage not recorded (pre-1996 record)	0, 0	location not recorded		B1-c worst recorded: Hail

The full list is in the Excel file, sheet "B1-d Storm Events history" (394 rows).

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

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

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

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

Probability: FEMA annualized frequency and descriptor per hazard

Sources: 5, 6

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area-weighted, so can be fractional)	NRI period	Location	Note
Coastal Flooding	0.0123	events per year at a location (modeled)	about 0.012 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 descriptor: no Storm Events record 1996 to 2025
Cold Wave	0.894	event-days per year	about 0.894 days per year		event-days in 0 of 30 years, 1996 to 2025 (0%)	6.14	2005-11-12 to 2024-11-12 (19 years)	countywide	No Storm Events cold wave record, 1996 to 2025.
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 Storm Events drought record, 1996 to 2025
Earthquake	0.00063	annual probability at a location	chance a given location in the county has at least minor-damage shaking in a year: 0.063%			not shown	modeled	see B1-f	No descriptor (Storm Events does not record earthquakes).
Hail	1.03	events per year	about 1.03 per year	Highly likely	FEMA annualized frequency (modeled)	40.8 (modeled)	1986 to 2023 (38 years)	countywide	
Heat Wave	1.79	event-days per year	about 1.79 days per year		event-days in 0 of 30 years, 1996 to 2025 (0%)	10.5	2005-11-12 to 2024-11-12 (19 years)	countywide	No Storm Events heat wave record, 1996 to 2025
Hurricane	0.00616	events per year	about 1 in 162 years	Unlikely	FEMA annualized frequency (modeled)	2	1851 to 2024 (Atlantic)	see B1-f	NRI counts hurricane and tropical storm tracks passing within storm-force wind range; federal declarations are in B1-d.
Ice Storm	1.04	event-days per year	about 1.04 days per year	Likely (from Storm Events: 3 of 30 years)	event-days in 3 of 30 years, 1996 to 2025 (10%)	27	1946-12-31 to 2014-02-12 (67 years)	countywide	
Inland Flooding	0.429	event-days per year	about 0.429 days per year	Likely (from Storm Events: 7 of 30 years)	event-days in 7 of 30 years, 1996 to 2025 (23.3%)	12	1996 to 2023 (28 years)	see B1-f	
Landslide	0.102	events per year (modeled)	about 1 in 10 years	Likely	FEMA annualized frequency (modeled)	not shown	modeled	see B1-f	

Hazard	FEMA annualized frequency (modeled)	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)				Location	Note
	<i>unit per row</i>						NRI period				
Lightning	31.1	days per year with a strike	about 31.1 days per year	Highly likely	FEMA annualized frequency (modeled)	not shown	1995 to 2023 (29 years; CONUS)			countywide	
Strong Wind	1.77	events per year	about 1.77 per year	Highly likely	FEMA annualized frequency (modeled)	25	1986 to 2023 (38 years)			countywide	
Tornado	0.274	events per year	about 1 in 4 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 descriptor: no Storm Events record 1996 to 2025
Wildfire	0.0000632	annual probability at a location	chance a given location in the county burns in a year: 0.00632%		Storm Events records in 0 of 30 years, 1996 to 2025 (0%)	not shown	modeled			see B1-f	No descriptor: no Storm Events record 1996 to 2025
Winter Weather	29.7	event-days per year	about 29.7 days per year	Highly likely (from Storm Events: 28 of 30 years)	event-days in 28 of 30 years, 1996 to 2025 (93.3%)	204	2005-11-12 to 2024-11-12 (19 years)			countywide	

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

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

Descriptor scale used in this packet (defined per unit)

Sources: 5, 6

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

Intensity bands: historical frequency (Storm Events)

Source: 6

Hazard	Band	Years	Events <i>county-coded records</i>	Years in period	Events per year <i>events / years</i>
Hail	1.00-1.99 in	1996 to 2025	17	30	0.567
Hail	2.00 in+	1996 to 2025	1	30	0.0333
Thunderstorm Wind (counted as NRI Strong Wind)	50-64 kt	1996 to 2025	79	30	2.63
Thunderstorm Wind (counted as NRI Strong Wind)	65 kt+	1996 to 2025	9	30	0.3
Thunderstorm Wind (counted as NRI Strong Wind)	unmeasured or below 50 kt	1996 to 2025	9	30	0.3
Tornado	EF0-1	1996 to 2025	3	30	0.1
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

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

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

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

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

Range of census tract risk within the county

Source: 5

Hazard	Tracts <i>rated of all</i>	NRI risk score, 0 to 100			Tracts by rating
		Min	Median	Max	
Coastal Flooding	36 of 45	68.0	72.3	80.0	Relatively Low 3, Very Low 33, No Rating 9
Cold Wave	45 of 45	25.3	36.6	48.5	Relatively Moderate 1, Relatively Low 44
Drought	0 of 45				No Rating 45
Earthquake	45 of 45	4.3	17.1	37.5	Very Low 45
Hail	45 of 45	32.5	45.8	62.7	Relatively Low 37, Very Low 8
Heat Wave	45 of 45	7.2	20.2	34.6	Relatively Low 31, Very Low 14
Hurricane	45 of 45	17.0	21.3	27.3	Very Low 45
Ice Storm	45 of 45	26.3	53.2	75.5	Relatively Moderate 3, Relatively Low 40, Very Low 2
Inland Flooding	45 of 45	4.5	27.1	61.8	Relatively Moderate 6, Relatively Low 29, Very Low 10
Landslide	44 of 45	10.6	53.7	85.7	Relatively Low 2, Very Low 42, No Rating 1
Lightning	45 of 45	25.4	47.7	65.5	Relatively Moderate 20, Relatively Low 25
Strong Wind	45 of 45	64.1	87.0	96.1	Relatively High 30, Relatively Moderate 15
Tornado	45 of 45	33.4	56.2	73.1	Relatively Moderate 29, Relatively Low 16
Tsunami	0 of 45				Insufficient Data 45
Wildfire	43 of 45	20.4	42.5	71.3	Relatively Low 3, Very Low 40, No Rating 2
Winter Weather	45 of 45	23.0	31.1	45.0	Relatively Low 45

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.

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

Frequency data for cold wave, hail, heat wave, ice storm, lightning, strong wind and winter weather are county-wide or coarse (49 km grid or NWS zone), the same for every jurisdiction; the tract range mostly reflects where buildings and people are.

Each jurisdiction (starting figures from federal data)

Sources: 1, 3, 4, 6

Jurisdiction	Type	Plan status	Repetitive loss <i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	Public Assistance to this jurisdiction <i>FEMA records matched by applicant name; federal share obligated, nominal dollars</i>	Event records naming this place <i>all years; since its plan</i>	Notes
Muskegon County	County	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Casnovia village	Village	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	1 total; 0 since its plan	
Fruitport village	Village	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	7 total; 0 since its plan	
Lakewood Club village	Village	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	6 total; 0 since its plan	
Montague city	City	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	\$7,684.50	11 total; 0 since its plan	
Muskegon city	City	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 2	\$64,314	37 total; 0 since its plan	Includes \$22,140 for declarations not counted as hazard incidents (DR-4494-MI).
Muskegon Heights city	City	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	5 total; 0 since its plan	
North Muskegon city	City	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	\$9,526.50	5 total; 0 since its plan	
Norton Shores city	City	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 2	\$22,514.25	1 total; 0 since its plan	
Ravenna village	Village	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	7 total; 1 since its plan	
Roosevelt Park city	City	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	\$6,338.25	2 total; 0 since its plan	
Whitehall city	City	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	14 total; 0 since its plan	
Blue Lake township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Casnovia township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	1 total; 0 since its plan	
Cedar Creek township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Dalton township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	3 total; 0 since its plan	
Egelston township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	\$768	0 total; 0 since its plan	
Fruitland township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	

Jurisdiction	Type	Plan status	Repetitive loss	Public Assistance to this jurisdiction	Event records naming this place	Notes
			<i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	<i>FEMA records matched by applicant name; federal share obligated, nominal dollars</i>	<i>all years; since its plan</i>	
Fruitport charter township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	7 total; 0 since its plan	
Holton township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	4 total; 0 since its plan	
Laketon township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 1	no Public Assistance recorded	0 total; 0 since its plan	
Montague township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	11 total; 0 since its plan	
Moorland township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Muskegon charter township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	\$7,553.25	37 total; 0 since its plan	
Ravenna township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	7 total; 1 since its plan	
Sullivan township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
White River township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Whitehall township	Township	Approved, expires 2030-05-20	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	14 total; 0 since its plan	

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

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

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

Local data needed

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

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

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

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

Hazard	Building exposure <i>modeled dollars</i>	Agriculture exposure <i>modeled dollars</i>	Population exposed <i>people</i>	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2025-05-21 <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	\$7,526,820,136	n/a	1,098	\$6,832	n/a	\$616	under 0.0001%				
Cold Wave	\$31,925,861,628	\$96,140,584	175,775	\$127	\$30,771	\$1,233,079	under 0.0001%				
Drought	n/a	\$0	n/a	n/a	\$0	n/a					agriculture exposure is 0 in NRI
Earthquake	\$56,420,751,920	n/a	175,824	\$184,791	n/a	\$61,032	0.000328%				
Hail	\$31,925,861,628	\$96,140,584	175,775	\$222,536	\$17,725	\$24,085	0.000697%				
Heat Wave	\$31,925,861,628	\$96,140,584	175,775	\$4,414	\$1	\$631,832	under 0.0001%				
Hurricane	\$31,874,791,799	\$96,140,584	175,585	\$5,700	\$1,030	\$4	under 0.0001%				
Ice Storm	\$31,869,274,325	n/a	175,551	\$193,732	n/a	\$51,559	0.000608%				
Inland Flooding	\$31,889,838,403	\$988,718	955	\$17,127,857	\$8,395	\$1,376	n/a (see note)			no Public Assistance recorded (1 declaration)	NRI counts the full building value of any census block with some flood loss; this is not the value of buildings in the floodplain. Use local FIRM overlays for B2-a/B2-b.
Landslide	\$270,584,871	n/a	1,156	\$226	n/a	\$876	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>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2025-05-21 <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
Lightning	\$31,925,861,628	n/a	175,775	\$37,924	n/a	\$444,501	0.000119%				
Strong Wind	\$31,925,861,628	\$96,140,584	175,775	\$2,021,651	\$290,132	\$1,139,056	0.00633%				
Tornado	\$31,925,861,628	\$96,140,584	175,775	\$1,516,364	\$1,373	\$2,376,657	0.00475%			no Public Assistance recorded (1 declaration)	
Tsunami	n/a	n/a	n/a	n/a	n/a	n/a					NRI publishes no building exposure for this county
Wildfire	\$2,624,890,296	\$17,025,772	22,110	\$11,685	\$9	\$2,416	0.000445%				
Winter Weather	\$31,925,861,628	\$96,140,584	175,775	\$31,062	\$941	\$9,955	under 0.0001%		\$0		

Totals since 2025-05-21 (Storm Events through 2026-06-30): 2 county-coded records, 0 with a damage value recorded (including \$0), \$0; 5 zone-level records, 1 with a damage value recorded (including \$0), \$0 reported for the zone; Public Assistance: none recorded on the 1 counted declaration.

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

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

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

County context

Source: 5

Measure	Value
Population	175,775
Building value (total, not at risk)	\$31,925,861,628
Agriculture value (total, not at risk)	\$96,140,584
NRI risk rating (all hazards)	Relatively Low
Expected annual loss, buildings and agriculture, all hazards	\$21,715,280
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)	\$5,977,044
Social vulnerability rating	Relatively Moderate
Community resilience rating	Very High
NRI version	December 2025

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

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

Supports FEMA checklist item B2-c: repetitive loss properties

Repetitive loss in this county, both definitions

Sources: 1, 4

Definition	Properties	Severe repetitive loss	Properties
Repetitive loss, FMA definition (44 CFR 77.2)	0	Severe repetitive loss, FMA definition (44 CFR 77.2)	0
Repetitive loss, NFIP insurance definition	5	Severe repetitive loss, NFIP insurance definition	0

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

Repeat-flood properties: county and state-level rows

Sources: 1, 4

Scope	RL, FMA <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
County total	0	0	5	0	5	0	3
of which: Laketon township	0	0	1	0	1	0	1
of which: Muskegon city	0	0	2	0	2	0	2
of which: Norton Shores city	0	0	2	0	2	0	0
Statewide, no county in FEMA's file	0	0	4	0	4	0	0

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

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

Sources: 1, 4

Jurisdiction	NFIP community ID	RL, FMA <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
Muskegon County	261816	0	0	0	0	0	0	0
Casnovia village	260965	0	0	0	0	0	0	0
Fruitport village	261201	0	0	0	0	0	0	0
Lakewood Club village	261204	0	0	0	0	0	0	0
Montague city	260160	0	0	0	0	0	0	0
Muskegon city	260161	0	0	2	0	2	0	2
Muskegon Heights city	260162	0	0	0	0	0	0	0
North Muskegon city	260164	0	0	0	0	0	0	0
Norton Shores city	260165	0	0	2	0	2	0	0
Ravenna village	260464	0	0	0	0	0	0	0
Roosevelt Park city	261206	0	0	0	0	0	0	0
Whitehall city	260166	0	0	0	0	0	0	0
Blue Lake township	261196	0	0	0	0	0	0	0
Casnovia township	261197	0	0	0	0	0	0	0
Cedar Creek township	261198	0	0	0	0	0	0	0
Dalton township	261199	0	0	0	0	0	0	0
Egelston township	260680	0	0	0	0	0	0	0
Fruitland township	260265	0	0	0	0	0	0	0
Fruitport charter township	261200	0	0	0	0	0	0	0
Holton township	261203	0	0	0	0	0	0	0
Laketon township	260159	0	0	1	0	1	0	1
Montague township	261240	0	0	0	0	0	0	0

Jurisdiction	NFIP community ID	RL, FMA <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
Moorland township	261205	0	0	0	0	0	0	0
Muskegon charter township	260163	0	0	0	0	0	0	0
Ravenna township	260731	0	0	0	0	0	0	0
Sullivan township	261207	0	0	0	0	0	0	0
White River township	260299	0	0	0	0	0	0	0
Whitehall township	261208	0	0	0	0	0	0	0

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

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

County repeat-flood properties by occupancy group

Sources: 1, 4

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	0	0	5	0	5	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

FEMA's occupancy groups have no institutional class; institutional properties are counted in non-residential or other residential in the table by occupancy group.

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

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

In this county 0 properties are FMA repetitive loss but not NFIP repetitive loss, and 5 properties are NFIP repetitive loss but not FMA repetitive loss.

Exact counts; no count suppression.

Sources

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

1. FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-29T134039Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)
2. FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-29T162832Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)
3. FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-29T150754Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)
4. FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)

5. FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-30, https://www.fema.gov/about/reports-and-data/openfema/nri/v120/NRI_Table_Counties.zip (download, 25 MB), https://www.fema.gov/about/reports-and-data/openfema/nri/v120/NRI_Table_CensusTracts.zip (download, 635 MB)
6. NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-30, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>
7. NOAA National Weather Service, NWS county-public forecast zones correlation file, version bp03mr20 to bp16ap26 (11 files; newest bp16ap26), pulled 2026-09-30, <https://www.weather.gov/gis/ZoneCounty>
8. U.S. Census Bureau, Census 2024 Gazetteer, 2020 place by county, CT county-to-cousub crosswalk, version 2024-gazetteer, pulled 2026-09-30, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gazetteer/2024_Gaz_counties_national.zip, [https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_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_scsd_national.zip](https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gaz_scsd_national.zip), https://www2.census.gov/geo/docs/reference/codes2020/national_place_by_county2020.txt, https://www2.census.gov/geo/docs/reference/ct_change/ct_cou_to_cousub_crosswalk.xlsx (used to match place names and codes; no table prints its values)

What this packet is and what the plan adds

This packet is the federal data for the plan's risk assessment, organized by the items of FEMA's Local Mitigation Plan Review Tool, Element B. Each section heading names the item its tables support; the plan and FEMA's review decide whether the item is met.

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

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

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).

Reuse, citation and corrections

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Cite this: Hazard Plain (2026). Muskegon County, MI: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-30; County FIPS 26121). Automated baseline. <https://hazardplain.org/mi/26121/> 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: contact@hazardplain.org

Hazard Plain release 2026-10. As of 2026-09-30; Storm Events data through 2026-06-30. Automated baseline.