

Macomb County, MI

Risk-assessment baseline packet

County FIPS: 26099 Release: 2026-10 Data as of: 2026-09-30 Storm Events data through: 2026-06-30

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

Summary

Plan status as of 2026-09-30: Approved, expires 2030-11-17. Plan: Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977), approved 2025-11-18.

Since the plan was approved on 2025-11-18: no new federal declaration.

NOAA Storm Events records since that date: 17 records (data through 2026-06-30).

Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Inland Flooding (\$145,923,352 a year), Tornado (\$58,501,660) and Cold Wave (\$40,629,113).

Repetitive-loss flood properties now: FMA RL 3, SRL 4 (44 CFR 77.2); any definition: 48.

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; 26099 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 2030-11-17	Plan:	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)
Approved:	2025-11-18	Days to expiry:	1,509

What changed since your last plan (approved 2025-11-18)

New federal declarations:	none	Storm Events records since approval:	17 records (data through 2026-06-30)
Repetitive loss now:	FMA RL 3, SRL 4 (44 CFR 77.2); any definition: 48	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 <i>negative = days since expiry</i>	Update underway	Notes
Macomb County	County	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2025-12-03
Armada village	Village	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977), pending adoption here	2025-11-18 by FEMA; not yet adopted here	2030-11-17 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Center Line city	City	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977), pending adoption here	2025-11-18 by FEMA; not yet adopted here	2030-11-17 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Eastpointe city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2025-12-03
Fraser city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-05-04
Memphis city	City	Approved, expires 2027-08-29	St. Clair County Update (FEMA plan 108393)	2022-08-30	2027-08-29	333		this jurisdiction approved 2022-10-05
Mount Clemens city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-06-10
New Baltimore city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-02-04
New Haven village	Village	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-01-07
Richmond city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		
Romeo village	Village	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-01-07
Roseville city	City	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977), pending adoption here	2025-11-18 by FEMA; not yet adopted here	2030-11-17 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 <i>negative = days since expiry</i>	Update underway	Notes
St. Clair Shores city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-06-10
Sterling Heights city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-01-07
Utica city	City	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-06-10
Warren city	City	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977), pending adoption here	2025-11-18 by FEMA; not yet adopted here	2030-11-17 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Armada township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		
Bruce township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-02-04
Chesterfield township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-01-07
Clinton charter township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2025-12-17
Harrison charter township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2025-12-03
Lenox township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2025-12-10
Macomb township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		
Ray township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-06-10
Richmond township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2025-12-17
Shelby charter township	Township	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977), pending adoption here	2025-11-18 by FEMA; not yet adopted here	2030-11-17 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 <i>negative = days since expiry</i>	Update underway	Notes
Washington charter township	Township	Approved, expires 2030-11-17	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977)	2025-11-18	2030-11-17	1,509		this jurisdiction approved 2026-06-10
Huron-Clinton Metropolitan Authority	Special District	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	Macomb County 2025 Hazard Mitigation Plan (FEMA plan 110977), pending adoption here	2025-11-18 by FEMA; not yet adopted here	2030-11-17 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.

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 High	Relatively High	\$145,828,886	\$58,627	\$35,840	\$145,923,352	71	
2	Tornado	Very High	Very High	\$24,326,625	\$1,710	\$34,173,326	\$58,501,660	7	
3	Cold Wave	Very High	Very High	\$11,243	\$65,489	\$40,552,381	\$40,629,113	17	Includes 2 Frost/Freeze records (outside NRI's Cold Wave definition; counted in this table and in B1-d, not in the B1-e descriptor).
4	Strong Wind	Very High	Very High	\$6,687,215	\$1,966	\$582,319	\$7,271,500	412	Includes 36 High Wind and 6 Strong Wind records (NOAA non-thunderstorm wind types, outside NRI's Strong Wind definition).
5	Heat Wave	Relatively Moderate	Relatively Moderate	\$59,287	\$1	\$5,802,745	\$5,862,034	16	
6	Ice Storm	Very High	Very High	\$3,309,197	n/a	\$43,342	\$3,352,539	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
7	Earthquake	Relatively Low	Relatively Low	\$1,987,699	n/a	\$636,075	\$2,623,773		Storm Events does not record earthquakes.
8	Hail	Relatively Moderate	Relatively Moderate	\$1,886,964	\$25,565	\$104,754	\$2,017,282	160	
9	Lightning	Relatively High	Relatively High	\$215,520	n/a	\$1,000,541	\$1,216,061	25	
10	Winter Weather	Relatively High	Relatively High	\$287,570	\$384	\$115,188	\$403,141	60	
11	Hurricane	Very Low	Very Low	\$71,546	\$8,156	\$835	\$80,537	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
12	Coastal Flooding	Relatively Low	Relatively Low	\$57,820	n/a	\$8,113	\$65,932	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
13	Wildfire	Very Low	Very Low	\$29,572	\$3	\$2,717	\$32,292	2	
14	Landslide	Very Low	Very Low	\$294	n/a	\$263	\$557	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	2	
	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 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 9820.01 (Relatively Low, 63.8); tract 2684 (Relatively Low, 60.1); tract 9822 (Relatively Low, 56.4)
Hurricane	tract 2120 (Very Low, 41.1); tract 2100 (Very Low, 40.6); tract 2211 (Very Low, 38.0)
Landslide	tract 2145 (Relatively Low, 82.6); tract 2150 (Very Low, 77.4); tract 2100 (Very Low, 73.1)
Tornado	tract 2211 (Very High, 97.8); tract 2270 (Very High, 96.0); tract 2306.02 (Very High, 96.0)
Tsunami	no tract has a National Risk Index rating for this hazard
Wildfire	tract 2150 (Very Low, 67.6); tract 2120 (Very Low, 65.5); tract 2252 (Very Low, 64.6)

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 9820.01 is Census Tract 9820.01). 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	15 records, 1996 to 2019 (15 zone-level)	1 day to 21 days (median 3 days); 14 with a recorded value	2003-01-10 to 2003-01-30 (2 records, 1 of them a monthly summary record), 1 direct death, zone-level	Cold/Wind Chill, 2007-02-03, \$25,000 property; \$0 crops, reported for the zone (2007 dollars)	Countywide (zone-level records).	Wind chill: in event narratives only (local data needed).
Frost/Freeze (outside NRI's Cold Wave definition)	crop damage	2 records, 2007 to 2012 (2 zone-level)		Frost/Freeze, 2012-04-27, \$1,300,000 crop damage (2012 dollars); NWS zone MIZ070		Countywide (zone-level records).	Temperature: in event narratives only (local data needed).

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Drought	U.S. Drought Monitor scale (D0 to D4)	2 records, 2001 to 2002 (2 zone-level)	30 days to 31 days (median 30.5 days); 2 with a recorded value	31 days (1 month), 2001-07-01 to 2001-07-31, zone-level		Countywide (zone-level records).	Storm Events enters a drought at D2 or worse east of the Rockies and D3 or worse from the Rockies west (NWS Instruction 10-1605); NRI drought counts D3 and D4 only.
Earthquake	Modified Mercalli (local data)	0					Storm Events does not record earthquakes; the USGS earthquake catalog is the source.
Hail	hail size (inches)	187 records, 1958 to 2026	0.75 in to 4.5 in (median 0.88 in); 187 with a recorded value	4.5 in hail, 1978-07-26	Hail, 2009-06-25, \$1,000 property; \$0 crops (2009 dollars)	Event records naming jurisdictions in the plan: Mount Clemens city (17 records), Warren city (15 records), Roseville city (12 records), Sterling Heights city (12 records), Washington charter township (11 records), Utica city (10 records), Center Line city (9 records), New Baltimore city (7 records), Armada township (6 records), Armada village (6 records); and 8 more jurisdictions (see the Excel file).	
Excessive Heat, Heat	heat index (in event narratives)	16 records, 1999 to 2026 (16 zone-level)	1 day to 7 days (median 4.5 days); 12 with a recorded value	7 consecutive days, 2012-07-01 to 2012-07-07, zone-level		Countywide (zone-level records).	Heat index: in event narratives only (local data needed). Heat records from November to March (unseasonable warmth, not a heat wave) are counted but not used for the longest run.
Hurricane, Tropical Storm, Tropical Depression	Saffir-Simpson	0					Storm Events files every zone of a storm's episode under the storm's type; flooding from the storm is filed as Flood or Flash Flood records.
Ice Storm	Sperry-Piltz ice scale (local data)	6 records, 1997 to 2023 (6 zone-level)		Ice Storm, 2003-04-03, \$50,000,000 property; crops not reported (2003 dollars); NWS zone MIZ070		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)	71 records, 1996 to 2025 (28 zone-level)		Flash Flood, 2014-08-11, \$300,000,000 property; \$0 crops (2014 dollars)		Event records naming jurisdictions in the plan: Sterling Heights city (9 records), Chesterfield township (5 records), Roseville city (5 records), Mount Clemens city (4 records), Warren city (3 records), Fraser city (2 records), Richmond city (2 records), Richmond township (2 records), Romeo village (2 records), Utica city (2 records); and 3 more jurisdictions (see the Excel file). Zone-level records (28) 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.

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
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)	25 records, 1998 to 2012		Lightning, 2005-07-16, \$1,000,000 property; crops not reported (2005 dollars)		Event records naming jurisdictions in the plan: Mount Clemens city (3 records), Chesterfield township (2 records), Macomb township (2 records), New Baltimore city (2 records), Romeo village (2 records), Sterling Heights city (2 records), Warren city (2 records), Armada township (1 record), Armada village (1 record), Richmond city (1 record); and 3 more jurisdictions (see the Excel file).	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)	42 records, 1996 to 2026 (42 zone-level)	39 kt (45 mph) to 70 kt (81 mph) (median 52 kt (60 mph)); 41 with a recorded value	70 kt (81 mph), measurement type not recorded, High Wind, 1997-04-06; NWS zone MIZ070	High Wind, 2017-03-08, \$30,000,000 property; \$0 crops, reported for the zone (2017 dollars)	Countywide (zone-level records).	
Thunderstorm Wind	wind speed (kt and mph)	443 records, 1960 to 2026	50 kt (58 mph) to 95 kt (109 mph) (median 52 kt (60 mph)); 400 with a recorded value	95 kt (109 mph), measurement type not recorded, Thunderstorm Wind, 1996-07-07, 1 direct injury	Thunderstorm Wind, 1998-07-21, \$5,800,000 property; crops not reported (1998 dollars)	Event records naming jurisdictions in the plan: Mount Clemens city (48 records), Sterling Heights city (28 records), Washington charter township (25 records), Roseville city (24 records), Romeo village (23 records), Utica city (21 records), Chesterfield township (16 records), Armada township (14 records), Armada village (14 records), Fraser city (14 records); and 8 more jurisdictions (see the Excel file).	
Tornado	Enhanced Fujita (Fujita before Feb 2007)	22 records, 1964 to 2025	F/EF0 to F/EF4 (median F/EF1); 21 with a recorded value	F4 tornado, 1964-05-08, 3.3 mi path length (whole path, pre-1996), 833 yd wide, \$2,500,000 property; crops not recorded (1964 dollars), 11 direct deaths, 224 direct injuries	Tornado, 1997-07-02, \$30,000,000 property; crops not reported (1997 dollars)	Event records naming jurisdictions in the plan: Armada township (1 record), Armada village (1 record), Fraser city (1 record), Mount Clemens city (1 record), Romeo village (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).
Tsunami	none (count and damage only)	0					Physical measure: in event narratives only (local data needed).

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Wildfire	acres burned (local data)	2 records, 2003 to 2007 (1 zone-level)		Wildfire, 2003-04-26, \$20,000 property; crops not reported (2003 dollars)		Event records naming jurisdictions in the plan: Chesterfield township (1 record). Zone-level records (1) apply countywide.	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)	60 records, 1996 to 2023 (60 zone-level)		Winter Storm, 2018-04-14, \$5,000,000 property; \$0 crops (2018 dollars); NWS zone MIZ070		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.

A monthly summary record covers most or all of a month; it does not count days at wave conditions.

Supports FEMA checklist item B1-d: previous occurrences

Federal declarations for this county: 18 declarations covering 14 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
2024-02-08	2023-08-24	DR-4757-MI	Major disaster	Severe Storms, Tornadoes, and Flooding	Inland Flooding (primary); also designated: Tornado	PA not declared for this county	within last 5 years	
2021-07-15	2021-06-25	DR-4607-MI	Major disaster	Severe Storms, Flooding, and Tornadoes	Inland Flooding; Tornado	PA not declared for this county		
2020-03-27	2020-01-20	DR-4494-MI	Major disaster	COVID-19 Pandemic	Non-natural, not counted	\$20,538,900.34		
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
2014-09-25	2014-08-11	DR-4195-MI	Major disaster	Severe Storms and Flooding	Inland Flooding	\$1,764,656.01		
2005-09-07	2005-08-29	EM-3225-MI	Emergency	Hurricane Katrina Evacuation	Hurricane: evacuation support, not a local hazard event; not counted	\$1,405.69		
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		
2003-09-23	2003-08-14	EM-3189-MI	Emergency	Power Outage	Non-natural, not counted	\$631,602.95		
2001-01-10	2000-12-11	EM-3160-MI	Emergency	Snow	Winter Weather	\$611,397.89		

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance	Flags	Notes
						<i>federal share obligated, nominal dollars</i>		
1999-01-27	1999-01-02	EM-3137-MI	Emergency	Mi - Severe Weather 1/2 /99	Winter Weather	\$334,612.45		
1998-08-05	1998-07-21	DR-1237-MI	Major disaster	Severe Storms and High Winds	Strong Wind	no Public Assistance recorded		
1997-07-11	1997-07-02	DR-1181-MI	Major disaster	Severe Storms, Tornadoes,and Flooding	Inland Flooding; Tornado	no Public Assistance recorded		
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	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		
1975-04-26	1975-04-26	DR-465-MI	Major disaster	Severe Storms, High Winds & Flooding	Inland Flooding (primary); also designated: Strong Wind	no Public Assistance recorded		
1973-04-12	1973-04-12	DR-371-MI	Major disaster	Severe Storms & Flooding	Inland Flooding	no Public Assistance recorded		
1972-12-01	1972-12-01	DR-363-MI	Major disaster	Severe Storms & Flooding	Inland Flooding	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	17	0	0	0	0	0	1996 to 2026-06-30	Includes 2 Frost/Freeze records.
Drought	2	0	0	0	0	0	1996 to 2026-06-30	

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval <i>records</i>	In the 12 months before plan approval <i>records</i>	Last 5 years <i>records</i>	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
Earthquake	0	0	0	0	0	0		Storm Events does not record earthquakes; the USGS earthquake catalog is the source.
Hail	187	2	1	12	0	0	1955 to 2026-06-30	
Heat Wave	16	1	0	1	0	0	1996 to 2026-06-30	
Hurricane	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Ice Storm	6	0	0	1	0	0	1996 to 2026-06-30	
Inland Flooding	71	0	2	4	10	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	25	0	0	0	0	0	1996 to 2026-06-30	
Strong Wind	485	14	10	65	2	0	1955 to 2026-06-30	Includes 36 High Wind and 6 Strong Wind records.
Tornado	22	0	1	1	5	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
Wildfire	2	0	0	0	0	0	1996 to 2026-06-30	
Winter Weather	60	0	0	4	3	0	1996 to 2026-06-30	

Notable Storm Events records

Sources: 1, 6, 7

Date	Event type	Magnitude or extent	Damage <i>nominal dollars</i>	Deaths, injuries <i>direct only</i>	Location	Why listed
2018-01-01	Cold/Wind Chill		\$0 property; \$0 crops, reported for the zone (2018 dollars)	1, 0	NWS zone MIZ070 (MACOMB), zone-level	deaths or injuries recorded
2014-08-11	Flash Flood		\$300,000,000 property; \$0 crops (2014 dollars)	0, 0	ST CLAIR SHRS to RICHMOND	B1-c worst recorded: Flash Flood, Flood, Lakeshore Flood
2012-07-01	Heat		\$0 property; \$0 crops, reported for the zone (2012 dollars)	0, 15	NWS zone MIZ070 (MACOMB), zone-level	B1-c worst recorded: Excessive Heat, Heat
2012-04-27	Frost/Freeze		\$0 property; \$1,300,000 crops, reported for the zone (2012 dollars)	0, 0	NWS zone MIZ070 (MACOMB), zone-level	B1-c worst recorded: Frost/Freeze
2005-07-16	Lightning		\$1,000,000 property; crops not reported (2005 dollars)	0, 0	MACOMB	B1-c worst recorded: Lightning
2003-04-03	Ice Storm		\$50,000,000 property; crops not reported, reported for the zone (2003 dollars)	0, 0	NWS zone MIZ070 (MACOMB), zone-level	B1-c worst recorded: Ice Storm
2003-01-10	Cold/Wind Chill		damage not reported	0, 0	NWS zone MIZ070 (MACOMB), zone-level	B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill
1997-04-06	High Wind	70 kt (81 mph), measurement type not recorded	\$100,000 property; crops not reported, reported for the zone (1997 dollars)	0, 0	NWS zone MIZ070 (MACOMB), zone-level	B1-c worst recorded: High Wind and Strong Wind
1996-07-07	Thunderstorm Wind	95 kt (109 mph), measurement type not recorded	\$3,000,000 property; crops not reported (1996 dollars)	0, 1	STERLING HEIGHTS to SAINT CLAIR SHORES	B1-c worst recorded: Thunderstorm Wind
1978-07-26	Hail	4.5 in	damage not recorded (pre-1996 record)	0, 0	location not recorded	B1-c worst recorded: Hail
1976-03-20	Tornado	F3, 17.1 mi path length (whole path, pre-1996), 100 yd wide	\$250,000 property; crops not recorded (1976 dollars)	1, 3	location not recorded	deaths or injuries recorded
1964-05-08	Tornado	F4, 3.3 mi path length (whole path, pre-1996), 833 yd wide	\$2,500,000 property; crops not recorded (1964 dollars)	11, 224	location not recorded	deaths or injuries recorded

The full list is in the Excel file, sheet "B1-d Storm Events history" (893 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	0.012	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	2.63	event-days per year	about 2.63 days per year	Likely (from Storm Events: 11 of 30 years)	event-days in 11 of 30 years, 1996 to 2025 (36.7%)	50	2005-11-12 to 2024-11-12 (19 years)	countywide	
Drought	0	event-days per year	none modeled	Possible (from Storm Events: 2 of 30 years)	event-days in 2 of 30 years, 1996 to 2025 (6.67%)	0	2000 to 2025 (25.25 years; D3 and D4 only)	countywide	NRI models no drought event-days here (2000 to 2025, 25.25 years; D3 and D4 only); Storm Events has a record in 2 of 30 years. The descriptor comes from Storm Events, which counts D2 drought that NRI leaves out.
Earthquake	0.000775	annual probability at a location	chance a given location in the county has at least minor-damage shaking in a year: 0.0775%			not shown	modeled	see B1-f	No descriptor (Storm Events does not record earthquakes).
Hail	2.39	events per year	about 2.39 per year	Highly likely	FEMA annualized frequency (modeled)	94.1 (modeled)	1986 to 2023 (38 years)	countywide	
Heat Wave	4.21	event-days per year	about 4.21 days per year	Likely (from Storm Events: 10 of 30 years)	event-days in 10 of 30 years, 1996 to 2025 (33.3%)	66	2005-11-12 to 2024-11-12 (19 years)	countywide	
Hurricane	0.0154	events per year	about 1 in 65 years	Possible	FEMA annualized frequency (modeled)	4	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	1.98	event-days per year	about 1.98 days per year	Likely (from Storm Events: 6 of 30 years)	event-days in 6 of 30 years, 1996 to 2025 (20%)	117	1946-12-31 to 2014-02-12 (67 years)	countywide	
Inland Flooding	1.93	event-days per year	about 1.93 days per year	Likely (from Storm Events: 21 of 30 years)	event-days in 21 of 30 years, 1996 to 2025 (70%)	54	1996 to 2023 (28 years)	see B1-f	
Landslide	0.0707	events per year (modeled)	about 1 in 14 years	Possible	FEMA annualized frequency (modeled)	not shown	modeled	see B1-f	

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area- weighted, so can be fractional)	NRI period	Location	Note
Lightning	34.4	days per year with a strike	about 34.4 days per year	Highly likely	FEMA annualized frequency (modeled)	not shown	1995 to 2023 (29 years; CONUS)	countywide	
Strong Wind	4.87	events per year	about 4.87 per year	Highly likely	FEMA annualized frequency (modeled)	163	1986 to 2023 (38 years)	countywide	
Tornado	0.209	events per year	about 1 in 5 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	0.0000124	annual probability at a location	chance a given location in the county burns in a year: 0.00124%	Possible (from Storm Events: 2 of 30 years)	Storm Events records in 2 of 30 years, 1996 to 2025 (6.67%)	not shown	modeled	see B1-f	Descriptor from Storm Events, not NRI.
Winter Weather	11.5	event-days per year	about 11.5 days per year	Likely (from Storm Events: 25 of 30 years)	event-days in 25 of 30 years, 1996 to 2025 (83.3%)	218	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	69	30	2.3
Hail	2.00 in+	1996 to 2025	1	30	0.0333
Thunderstorm Wind (counted as NRI Strong Wind)	50-64 kt	1996 to 2025	339	30	11.3
Thunderstorm Wind (counted as NRI Strong Wind)	65 kt+	1996 to 2025	19	30	0.633
Thunderstorm Wind (counted as NRI Strong Wind)	unmeasured or below 50 kt	1996 to 2025	0	30	0
Tornado	EF0-1	1996 to 2025	7	30	0.233
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	24 of 243	69.9	79.4	86.8	Relatively Low 19, Very Low 5, No Rating 219
Cold Wave	243 of 243	15.7	77.5	94.0	Relatively High 120, Relatively Moderate 112, Relatively Low 4, Very Low 7
Drought	0 of 243				No Rating 243
Earthquake	243 of 243	3.2	23.8	63.8	Relatively Low 29, Very Low 214
Hail	243 of 243	17.4	50.2	76.1	Relatively Moderate 2, Relatively Low 213, Very Low 28
Heat Wave	243 of 243	1.7	32.0	66.0	Relatively Moderate 6, Relatively Low 194, Very Low 43
Hurricane	243 of 243	14.4	24.9	41.1	Very Low 243
Ice Storm	243 of 243	15.9	73.5	94.3	Relatively High 5, Relatively Moderate 148, Relatively Low 89, Very Low 1
Inland Flooding	243 of 243	0.7	38.3	94.7	Relatively High 20, Relatively Moderate 75, Relatively Low 101, Very Low 47
Landslide	200 of 243	8.7	30.2	82.6	Relatively Low 1, Very Low 199, No Rating 43
Lightning	243 of 243	0.5	26.3	55.2	Relatively Moderate 2, Relatively Low 169, Very Low 72
Strong Wind	243 of 243	15.2	62.3	93.0	Relatively High 11, Relatively Moderate 153, Relatively Low 78, Very Low 1
Tornado	243 of 243	20.8	76.3	97.8	Very High 6, Relatively High 131, Relatively Moderate 99, Relatively Low 6, Very Low 1
Tsunami	0 of 243				Insufficient Data 243
Wildfire	217 of 243	18.6	36.6	67.6	Very Low 217, No Rating 26
Winter Weather	243 of 243	16.5	38.4	71.1	Relatively Moderate 33, Relatively Low 209, Very Low 1

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
Macomb County	County	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	\$934,008.10	0 total; 0 since its plan	Includes \$927,071.16 for declarations not counted as hazard incidents (DR-4494-MI, EM-3189-MI).
Armada village	Village	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	\$6,472.90	22 total; no approved plan	Includes \$6,472.90 for declarations not counted as hazard incidents (EM-3189-MI).
Center Line city	City	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 0	\$84,521.99	16 total; no approved plan	Includes \$35,857.89 for declarations not counted as hazard incidents (DR-4494-MI, EM-3189-MI).
Eastpointe city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	\$109,984.91	0 total; 0 since its plan	Includes \$19,121.45 for declarations not counted as hazard incidents (EM-3189-MI).
Fraser city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	\$26,726.64	21 total; 1 since its plan	Includes \$17,969.58 for declarations not counted as hazard incidents (EM-3189-MI).
Memphis city	City	Approved, expires 2027-08-29	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	7 total; 0 since its plan	
Mount Clemens city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 1	\$73,882.54	73 total; 0 since its plan	Includes \$20,042.11 for declarations not counted as hazard incidents (DR-4494-MI, EM-3189-MI).
New Baltimore city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 3	no Public Assistance recorded	16 total; 0 since its plan	
New Haven village	Village	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Richmond city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	\$15,592.51	16 total; 0 since its plan	Includes \$7,214.34 for declarations not counted as hazard incidents (EM-3189-MI).
Romeo village	Village	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	\$7,140.84	34 total; 1 since its plan	Includes \$7,140.84 for declarations not counted as hazard incidents (DR-4494-MI).
Roseville city	City	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 1	\$225,391.60	42 total; no approved plan	Includes \$88,511.18 for declarations not counted as hazard incidents (DR-4494-MI, EM-3189-MI).
St. Clair Shores city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 4	\$45,113.60	3 total; 0 since its plan	Includes \$20,552.22 for declarations not counted as hazard incidents (EM-3189-MI).
Sterling Heights city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 2	\$1,767,201.81	51 total; 0 since its plan	Includes \$837,897.17 for declarations not counted as hazard incidents (DR-4494-MI, EM-3189-MI, EM-3225-MI).
Utica city	City	Approved, expires 2030-11-17	FMA RL 0, SRL 1; any 3	\$22,240.14	34 total; 2 since its plan	Includes \$11,817.25 for declarations not counted as hazard incidents (EM-3189-MI).

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
Warren city	City	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 1	\$942,266.56	32 total; no approved plan	Includes \$56,210.18 for declarations not counted as hazard incidents (EM-3189-MI).
Armada township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	22 total; 0 since its plan	
Bruce township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Chesterfield township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 1; any 5	\$99,762.46	30 total; 0 since its plan	Includes \$97,085.27 for declarations not counted as hazard incidents (DR-4494-MI, EM-3189-MI).
Clinton charter township	Township	Approved, expires 2030-11-17	FMA RL 1, SRL 1; any 7	\$61,184.22	0 total; 0 since its plan	
Harrison charter township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 1; any 14	no Public Assistance recorded	0 total; 0 since its plan	
Lenox township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Macomb township	Township	Approved, expires 2030-11-17	FMA RL 2, SRL 0; any 4	\$18,220.76	11 total; 1 since its plan	Includes \$18,220.76 for declarations not counted as hazard incidents (DR-4494-MI, EM-3189-MI).
Ray township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Richmond township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	\$1,087.50	16 total; 0 since its plan	
Shelby charter township	Township	Plan 110977 approved 2025-11-18, pending adoption here; not yet eligible	FMA RL 0, SRL 0; any 2	no Public Assistance recorded	0 total; no approved plan	
Washington charter township	Township	Approved, expires 2030-11-17	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	37 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).

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

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

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

Local data needed

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

- 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 2025-11-18 <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	\$6,250,437,417	n/a	27,365	\$57,820	n/a	\$8,113	0.000925%				
Cold Wave	\$182,069,762,917	\$101,488,042	880,347	\$11,243	\$65,489	\$40,552,381	under 0.0001%				
Drought	n/a	\$0	n/a	n/a	\$0	n/a					agriculture exposure is 0 in NRI
Earthquake	\$315,443,186,599	n/a	881,217	\$1,987,699	n/a	\$636,075	0.00063%				
Hail	\$182,069,762,917	\$101,488,042	880,347	\$1,886,964	\$25,565	\$104,754	0.00104%	\$0			
Heat Wave	\$182,069,762,917	\$101,488,042	880,347	\$59,287	\$1	\$5,802,745	under 0.0001%		\$0		
Hurricane	\$181,723,176,815	\$99,371,719	879,266	\$71,546	\$8,156	\$835	under 0.0001%				
Ice Storm	\$182,030,462,860	n/a	880,022	\$3,309,197	n/a	\$43,342	0.00182%				
Inland Flooding	\$181,973,251,873	\$2,838,167	12,189	\$145,828,886	\$58,627	\$35,840	n/a (see note)				NRI counts the full building value of any census block with some flood loss; this is not the value of buildings in the floodplain. Use local FIRM overlays for B2-a/B2-b.
Landslide	\$295,048,406	n/a	1,172	\$294	n/a	\$263	under 0.0001%				
Lightning	\$182,069,762,917	n/a	880,347	\$215,520	n/a	\$1,000,541	0.000118%				
Strong Wind	\$182,069,762,917	\$101,488,042	880,347	\$6,687,215	\$1,966	\$582,319	0.00367%	\$0	\$1,350,000		Storm Events damage since the plan includes 2 zone-level High Wind records (\$1,350,000): a NOAA non-thunderstorm wind type, outside NRI's Strong Wind definition.
Tornado	\$182,069,762,917	\$101,488,042	880,347	\$24,326,625	\$1,710	\$34,173,326	0.0134%				
Tsunami	n/a	n/a	n/a	n/a	n/a	n/a					NRI publishes no building exposure 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>	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 2025-11-18 <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Wildfire	\$28,295,929,335	\$33,141,085	131,969	\$29,572	\$3	\$2,717	0.000105%				
Winter Weather	\$182,069,762,917	\$101,488,042	880,347	\$287,570	\$384	\$115,188	0.000158%				

Totals since 2025-11-18 (Storm Events through 2026-06-30): 14 county-coded records, 14 with a damage value recorded (including \$0), \$0; 3 zone-level records, 3 with a damage value recorded (including \$0), \$1,350,000 reported for the zone; Public Assistance: no counted declaration since the plan.

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	880,347
Building value (total, not at risk)	\$182,069,762,917
Agriculture value (total, not at risk)	\$101,488,042
NRI risk rating (all hazards)	Relatively High
Expected annual loss, buildings and agriculture, all hazards	\$184,921,337
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)	\$83,058,438
Social vulnerability rating	Relatively Low
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)	3	Severe repetitive loss, FMA definition (44 CFR 77.2)	4
Repetitive loss, NFIP insurance definition	48	Severe repetitive loss, NFIP insurance definition	4

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	3	4	48	4	48	0	14
of which: Chesterfield township	0	1	5	1	5	0	2
of which: Clinton charter township	1	1	7	1	7	0	3
of which: Harrison township	0	1	14	1	14	0	5
of which: Mount Clemens city	0	0	1	0	1	0	0
of which: New Baltimore city	0	0	3	0	3	0	1
of which: Shelby charter township	0	0	2	0	2	0	1
of which: St. Clair Shores city	0	0	4	0	4	0	0
of which: Sterling Heights city	0	0	2	0	2	0	0
of which: Warren city	0	0	1	0	1	0	0
of which: Macomb township	2	0	4	0	4	0	1
of which: Utica city	0	1	3	1	3	0	1
of which: Roseville city	0	0	1	0	1	0	0
of which: Unknown (community ID Unknown in FEMA data)	0	0	1	0	1	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>
Macomb County	261890	0	0	0	0	0	0	0
Armada village	260742	0	0	0	0	0	0	0
Center Line city	260724	0	0	0	0	0	0	0
Eastpointe city	261071	0	0	0	0	0	0	0
Fraser city	260122	0	0	0	0	0	0	0
Memphis city	260202	0	0	0	0	0	0	0
Mount Clemens city	260124	0	0	1	0	1	0	0
New Baltimore city	260125	0	0	3	0	3	0	1
New Haven village	260446	0	0	0	0	0	0	0
Richmond city	261475	0	0	0	0	0	0	0
Romeo village	261072	0	0	0	0	0	0	0
Roseville city	260909	0	0	1	0	1	0	0
St. Clair Shores city	260127	0	0	4	0	4	0	0
Sterling Heights city	260128	0	0	2	0	2	0	0
Utica city	260608	0	1	3	1	3	0	1
Warren city	260129	0	0	1	0	1	0	0
Armada township	261043	0	0	0	0	0	0	0
Bruce township	260884	0	0	0	0	0	0	0
Chesterfield township	260120	0	1	5	1	5	0	2
Clinton charter township	260121	1	1	7	1	7	0	3
Harrison charter township	260123	0	1	14	1	14	0	5
Lenox township	261014	0	0	0	0	0	0	0
Macomb township	260445	2	0	4	0	4	0	1
Ray township	260910	0	0	0	0	0	0	0
Richmond township	261112	0	0	0	0	0	0	0
Shelby charter township	260126	0	0	2	0	2	0	1
Washington charter township	260447	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	3	3	43	3	43	0	12
2 to 4 unit residential	0	0	1	0	1	0	0
other residential	0	1	1	1	1	0	1
non-residential	0	0	3	0	3	0	1
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 45 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). Macomb County, MI: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-30; County FIPS 26099). Automated baseline. <https://hazardplain.org/mi/26099/> 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.