

Otsego County, MI

Risk-assessment baseline packet

County FIPS: 26137 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: Expired on 2026-05-31. Plan: Otsego County HMP (FEMA plan 107297), approved 2021-06-01.
Since the plan was approved on 2021-06-01: 1 new hazard declaration (1 incident): DR-4880-MI (Severe Winter Storm).
NOAA Storm Events records since that date: 55 records (data through 2026-06-30).
Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Inland Flooding (\$3,750,580 a year), Cold Wave (\$1,650,751) and Hail (\$671,386).
Repetitive-loss flood properties now: FMA RL 0, SRL 0 (44 CFR 77.2); any definition: 0.
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; 26137 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:	Expired on 2026-05-31	Plan:	Otsego County HMP (FEMA plan 107297)
Approved:	2021-06-01	Days since expiry:	122
Update underway:	none recorded in FEMA's plan tracker		

Until a new plan is approved, FEMA mitigation project grants (HMGP, FMA) need a FEMA exception (44 CFR 201.6(a)(3)).

What changed since your last plan (approved 2021-06-01)

New federal declarations:	1 new hazard declaration (1 incident): DR-4880-MI (Severe Winter Storm)	Storm Events records since approval:	55 records (data through 2026-06-30)
Repetitive loss now:	FMA RL 0, SRL 0 (44 CFR 77.2); any definition: 0	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

Source: 1

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry <i>negative = days since expiry</i>	Notes
Otsego County	County	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	
Gaylord city	City	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	
Vanderbilt village	Village	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2025-09-30
Bagley township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2021-07-01
Charlton township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	
Chester township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2025-11-18
Corwith township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2025-09-30
Dover township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2021-07-01
Elmira township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2021-06-23
Hayes township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2021-06-23
Livingston township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	this jurisdiction approved 2021-07-01
Otsego Lake township	Township	Expired on 2026-05-31	Otsego County HMP (FEMA plan 107297)	2021-06-01	2026-05-31	-122	

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

Supports FEMA checklist item B1-a: hazard identification

Hazards NRI does not cover (local data needed)

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

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

Sources: 5, 6

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings <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	Very Low	Very Low	\$3,750,580	\$0	under \$1	\$3,750,580	3	
2	Cold Wave	Relatively Low	Relatively Moderate	\$56	\$4,739	\$1,645,956	\$1,650,751	7	
3	Hail	Relatively Low	Relatively Moderate	\$485,802	\$3,200	\$182,385	\$671,386	51	
4	Strong Wind	Relatively Low	Relatively Low	\$163,612	\$348	\$330,327	\$494,288	67	Includes 10 High Wind records (a NOAA non-thunderstorm wind type, outside NRI's Strong Wind definition).
5	Tornado	Relatively Low	Relatively Low	\$204,433	\$64	\$287,760	\$492,257	3	
6	Lightning	Relatively Moderate	Relatively Moderate	\$27,793	n/a	\$408,872	\$436,665	4	
7	Heat Wave	Very Low	Very Low	\$481	under \$1	\$53,210	\$53,691	2	
8	Wildfire	Very Low	Very Low	\$35,194	\$2	\$3,070	\$38,266	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
9	Winter Weather	Very Low	Very Low	\$1,491	\$86	\$10,535	\$12,112	146	
10	Earthquake	Very Low	Very Low	\$8,725	n/a	\$2,047	\$10,771		Storm Events does not record earthquakes.
11	Ice Storm	Very Low	Very Low	\$4,471	n/a	\$1,281	\$5,752	5	
12	Hurricane	Very Low	Very Low	\$5,362	\$149	\$2	\$5,513	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
13	Landslide	Relatively Low	Very Low	\$284	n/a	\$3,945	\$4,229	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
14	Drought	No Rating	No Expected Annual Losses	n/a	\$0	n/a	\$0	1	

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 and landslide records (Storm Events records these hazards only in part).

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

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

Supports FEMA checklist item B1-b: hazard location

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

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

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 9503 (Very Low, 20.4); tract 9502 (Very Low, 9.1); tract 9501 (Very Low, 6.0)
Hurricane	tract 9503 (Very Low, 37.7); tract 9502 (Very Low, 36.2); tract 9506 (Very Low, 33.7)
Landslide	tract 9501 (Relatively Low, 94.5); tract 9502 (Relatively Low, 93.3); tract 9506 (Relatively Low, 91.8)
Tornado	tract 9503 (Relatively Moderate, 61.5); tract 9506 (Relatively Moderate, 58.5); tract 9502 (Relatively Moderate, 58.0)
Wildfire	tract 9506 (Relatively Low, 84.8); tract 9504 (Relatively Low, 83.7); tract 9502 (Relatively Low, 82.4)

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 9503 is Census Tract 9503). FEMA's Resilience Analysis and Planning Tool maps the National Risk Index for every tract: <https://www.fema.gov/emergency-managers/practitioners/resilience-analysis-and-planning-tool>

Supports FEMA checklist item B1-c: hazard extent

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

Sources: 6, 7

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Cold/Wind Chill, Extreme Cold/Wind Chill	wind chill	7 records, 2007 to 2026 (7 zone-level)	1 day to 3 days (median 2 days); 6 with a recorded value	3 consecutive days, 2026-01-28 to 2026-01-30, zone-level		Countywide (zone-level records).	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)	1 record, 2001 (1 zone-level)	9 days; 1 with a recorded value	9 days, 2001-08-01 to 2001-08-09, 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)	57 records, 1993 to 2025	0.75 in to 2 in (median 0.88 in); 57 with a recorded value	2 in hail, 2022-05-20; same size also recorded on 1993-04-24	Hail, 2018-05-26, \$5,000 property; \$0 crops (2018 dollars)	Event records naming jurisdictions in the plan: Gaylord city (24 records), Elmira township (7 records), Vanderbilt village (5 records), Otsego Lake township (3 records).	
Excessive Heat, Heat	heat index (in event narratives)	2 records, 2001 to 2018 (2 zone-level)	1 day to 9 days (median 5 days); 2 with a recorded value	9 consecutive days, 2001-08-01 to 2001-08-09, zone-level		Countywide (zone-level records).	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.
Ice Storm	Sperry-Piltz ice scale (local data)	5 records, 2001 to 2026 (5 zone-level)		No damage reported in 5 records.		Countywide (zone-level records).	Ice thickness: 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
Flash Flood, Flood, Lakeshore Flood	damage and flood days (flood depth: FIRM)	3 records, 2003 to 2024		Flood, 2024-07-29, \$15,000 property; \$0 crops (2024 dollars)		Event records naming jurisdictions in the plan: Elmira township (1 record), Gaylord city (1 record).	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)	4 records, 1998 to 2009		Lightning, 2009-07-22, \$500,000 property; \$0 crops (2009 dollars)		Event records naming jurisdictions in the plan: Elmira township (2 records), Gaylord city (2 records).	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)	10 records, 1998 to 2025 (10 zone-level)	50 kt (58 mph) to 60 kt (69 mph) (median 55 kt (63 mph)); 10 with a recorded value	60 kt (69 mph) measured gust, High Wind, 2021-12-16; NWS zone MIZ022		Countywide (zone-level records).	
Thunderstorm Wind	wind speed (kt and mph)	82 records, 1963 to 2024	50 kt (58 mph) to 78 kt (90 mph) (median 50 kt (58 mph)); 60 with a recorded value	78 kt (90 mph) estimated gust, Thunderstorm Wind, 2014-09-04	Thunderstorm Wind, 2018-08-28, \$1,200,000 property; \$0 crops (2018 dollars)	Event records naming jurisdictions in the plan: Gaylord city (29 records), Elmira township (6 records), Otsego Lake township (6 records), Vanderbilt village (6 records).	
Tornado	Enhanced Fujita (Fujita before Feb 2007)	5 records, 1969 to 2022	F/EF0 to F/EF3 (median F/EF2); 4 with a recorded value	EF3 tornado, 2022-05-20, 15.79 mi within this county, 200 yd wide, \$50,000,000 property; \$0 crops (2022 dollars), 2 direct deaths, 44 direct injuries		Event records naming jurisdictions in the plan: Elmira township (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
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)	146 records, 1996 to 2026 (146 zone-level)		Heavy Snow, 2012-03-02, \$215,000 property; \$0 crops (2012 dollars); NWS zone MIZ022		Countywide (zone-level records).	Snow depth: in event narratives only (local data needed).

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: 7 declarations covering 4 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
2025-07-22	2025-03-28	DR-4880-MI	Major disaster	Severe Winter Storm	Ice Storm (primary); also designated: Winter Weather	\$3,447,594.16	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	no Public Assistance recorded		
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
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		
1999-01-27	1999-01-02	EM-3137-MI	Emergency	Mi - Severe Weather 1/2 /99	Winter Weather	\$23,771.44		
1978-01-27	1978-01-27	EM-3057-MI	Emergency	Blizzards & Snowstorms	Winter Weather	no Public Assistance recorded		
1977-03-02	1977-03-02	EM-3035-MI	Emergency	Drought	Drought	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.

Public Assistance filed under this county for declarations that do not list it: 2 rows, \$7,803.39

Sources: 2, 3

FEMA number	Declared	Title	Applicant	PA obligated <i>federal share obligated, nominal dollars</i>
DR-1777-MI	2008-07-14	Severe Storms, Tornadoes, and Flooding	Otsego County	\$4,438.14
EM-3160-MI	2001-01-10	Snow	Otsego County	\$3,365.25

FEMA's Public Assistance summaries file these applicants under this county, but FEMA's declaration rows for these disasters do not designate it (an electric cooperative or district serving several counties, for example). Not in any declaration row above and not counted.

Previous occurrences by hazard, with explicit no-event rows

Sources: 2, 6, 7

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval records	In the 12 months before plan approval records	Last 5 years records	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
Cold Wave	7	4	0	4	0	0	1996 to 2026-06-30	
Drought	1	0	0	0	1	0	1996 to 2026-06-30	
Earthquake	0	0	0	0	0	0		Storm Events does not record earthquakes; the USGS earthquake catalog is the source.
Hail	57	11	0	11	0	0	1955 to 2026-06-30	
Heat Wave	2	0	0	0	0	0	1996 to 2026-06-30	
Hurricane	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Ice Storm	5	2	0	2	1	1	1996 to 2026-06-30	
Inland Flooding	3	2	0	2	0	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

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
Lightning	4	0	0	0	0	0	1996 to 2026-06-30	
Strong Wind	92	15	4	9	0	0	1955 to 2026-06-30	Includes 10 High Wind records.
Tornado	5	1	0	1	0	0	1950 to 2026-06-30	
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	146	20	1	20	3	1	1996 to 2026-06-30	

Notable Storm Events records

Sources: 1, 6, 7

Date	Event type	Magnitude or extent	Damage <i>nominal dollars</i>	Deaths, injuries <i>direct only</i>	Location	Flags	Why listed
2026-01-28	Cold/Wind Chill		damage not reported	0, 0	NWS zone MIZ022 (OTSEGO), zone-level	new since last plan; within last 5 years	B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill
2024-07-29	Flood		\$15,000 property; \$0 crops (2024 dollars)	0, 0	ELMIRA	new since last plan; within last 5 years	B1-c worst recorded: Flash Flood, Flood, Lakeshore Flood
2022-05-20	Hail	2 in	\$0 property; \$0 crops (2022 dollars)	0, 0	ELMIRA	new since last plan; within last 5 years	B1-c worst recorded: Hail
2022-05-20	Tornado	EF3, 15.79 mi within this county, 200 yd wide	\$50,000,000 property; \$0 crops (2022 dollars)	2, 44	ELMIRA to SPARR	new since last plan; within last 5 years	deaths or injuries recorded
2021-12-16	High Wind	60 kt (69 mph) measured gust	\$30,000 property; \$0 crops, reported for the zone (2021 dollars)	0, 0	NWS zone MIZ022 (OTSEGO), zone-level	new since last plan; within last 5 years	B1-c worst recorded: High Wind and Strong Wind
2018-08-28	Thunderstorm Wind	70 kt (81 mph) estimated gust	\$1,200,000 property; \$0 crops (2018 dollars)	0, 1	GAYLORD OTSEGO ARPT to GAYLORD		deaths or injuries recorded
2018-05-26	Hail	1.25 in	\$5,000 property; \$0 crops (2018 dollars)	0, 0	OTSEGO LAKE to WATERS		B1-c most damaging: Hail
2014-09-04	Thunderstorm Wind	78 kt (90 mph) estimated gust	\$295,000 property; \$0 crops (2014 dollars)	0, 0	OTSEGO LAKE to ARBUTUS BEACH		B1-c worst recorded: Thunderstorm Wind
2012-03-02	Heavy Snow		\$215,000 property; \$0 crops, reported for the zone (2012 dollars)	0, 0	NWS zone MIZ022 (OTSEGO), zone-level		B1-c worst recorded: Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet
2009-07-22	Lightning		\$500,000 property; \$0 crops (2009 dollars)	0, 0	GAYLORD		B1-c worst recorded: Lightning
2001-08-01	Heat		damage not reported	0, 0	NWS zone MIZ022 (OTSEGO), zone-level		B1-c worst recorded: Excessive Heat, Heat
2001-08-01	Drought		damage not reported	0, 0	NWS zone MIZ022 (OTSEGO), zone-level		B1-c worst recorded: Drought

The full list is in the Excel file, sheet "B1-d Storm Events history" (322 rows).

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

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

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

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

Probability: FEMA annualized frequency and descriptor per hazard

Sources: 5, 6

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area- weighted, so can be fractional)	NRI period	Location	Note
Cold Wave	1.74	event-days per year	about 1.74 days per year	Possible (from Storm Events: 2 of 30 years)	event-days in 2 of 30 years, 1996 to 2025 (6.67%)	33	2005-11-12 to 2024-11-12 (19 years)	countywide	
Drought	0	event-days per year	none modeled	Possible (from Storm Events: 1 of 30 years)	event-days in 1 of 30 years, 1996 to 2025 (3.33%)	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 1 of 30 years. The descriptor comes from Storm Events, which counts D2 drought that NRI leaves out.
Earthquake	0.000299	annual probability at a location	chance a given location in the county has at least minor-damage shaking in a year: 0.0299%			not shown	modeled	see B1-f	No descriptor (Storm Events does not record earthquakes).
Hail	0.983	events per year	about 0.98 per year	Likely	FEMA annualized frequency (modeled)	37.5 (modeled)	1986 to 2023 (38 years)	countywide	
Heat Wave	0.737	event-days per year	about 0.737 days per year	Possible (from Storm Events: 2 of 30 years)	event-days in 2 of 30 years, 1996 to 2025 (6.67%)	12	2005-11-12 to 2024-11-12 (19 years)	countywide	
Hurricane	0.01	events per year	about 1 in 100 years	Possible	FEMA annualized frequency (modeled)	0	1851 to 2024 (Atlantic)	see B1-f	NRI counts hurricane and tropical storm tracks passing within storm-force wind range; federal declarations are in B1-d.
Ice Storm	0.0744	event-days per year	about 0.0744 days per year	Likely (from Storm Events: 4 of 30 years)	event-days in 4 of 30 years, 1996 to 2025 (13.3%)	5	1946-12-31 to 2014-02-12 (67 years)	countywide	
Inland Flooding	0.0357	event-days per year	about 0.0357 days per year	Possible (from Storm Events: 2 of 30 years)	event-days in 2 of 30 years, 1996 to 2025 (6.67%)	1	1996 to 2023 (28 years)	see B1-f	
Landslide	0.152	events per year (modeled)	about 1 in 7 years	Likely	FEMA annualized frequency (modeled)	not shown	modeled	see B1-f	
Lightning	24.7	days per year with a strike	about 24.7 days per year	Highly likely	FEMA annualized frequency (modeled)	not shown	1995 to 2023 (29 years; CONUS)	countywide	

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area-weighted, so can be fractional)	NRI period	Location	Note
Strong Wind	0.873	events per year	about 0.87 per year	Likely	FEMA annualized frequency (modeled)	34	1986 to 2023 (38 years)	countywide	
Tornado	0.0794	events per year	about 1 in 13 years	Possible	FEMA annualized frequency (modeled)	not shown	1950 to 2023 (EF2+); 1986 to 2023 (EF0-1)	see B1-f	
Wildfire	0.000263	annual probability at a location	chance a given location in the county burns in a year: 0.0263%		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	32.6	event-days per year	about 32.6 days per year	Highly likely (from Storm Events: 30 of 30 years)	event-days in 30 of 30 years, 1996 to 2025 (100%)	619	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	21	30	0.7
Hail	2.00 in+	1996 to 2025	1	30	0.0333
Thunderstorm Wind (counted as NRI Strong Wind)	50-64 kt	1996 to 2025	54	30	1.8
Thunderstorm Wind (counted as NRI Strong Wind)	65 kt+	1996 to 2025	3	30	0.1
Thunderstorm Wind (counted as NRI Strong Wind)	unmeasured or below 50 kt	1996 to 2025	0	30	0
Tornado	EF0-1	1996 to 2025	2	30	0.0667
Tornado	EF2-3	1996 to 2025	1	30	0.0333
Tornado	EF4-5	1996 to 2025	0	30	0
Tornado	unrated (EFU)	1996 to 2025	0	30	0

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

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

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

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

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	
Cold Wave	6 of 6	75.7	88.5	93.1	Relatively High 5, Relatively Moderate 1
Drought	0 of 6				No Rating 6
Earthquake	6 of 6	4.2	5.8	20.4	Very Low 6
Hail	6 of 6	85.2	92.7	94.9	Relatively High 5, Relatively Moderate 1
Heat Wave	6 of 6	5.6	11.7	18.0	Relatively Low 1, Very Low 5
Hurricane	6 of 6	28.6	33.4	37.7	Very Low 6
Ice Storm	6 of 6	4.9	11.5	21.7	Very Low 6
Inland Flooding	6 of 6	27.6	55.4	73.8	Relatively Moderate 3, Relatively Low 3
Landslide	6 of 6	51.1	89.7	94.5	Relatively Low 5, Very Low 1
Lightning	6 of 6	86.1	96.4	98.5	Very High 4, Relatively High 2
Strong Wind	6 of 6	77.3	90.0	92.0	Relatively High 5, Relatively Moderate 1

Hazard	Tracts <i>rated of all</i>	NRI risk score, 0 to 100			Tracts by rating
		Min	Median	Max	
Tornado	6 of 6	43.9	57.5	61.5	Relatively Moderate 4, Relatively Low 2
Wildfire	6 of 6	73.9	80.7	84.8	Relatively Low 6
Winter Weather	6 of 6	32.5	44.5	53.3	Relatively Moderate 2, Relatively Low 4

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
Otsego County	County	Expired on 2026-05-31		\$2,925,852.31	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Gaylord city	City	Expired on 2026-05-31		\$404,830.65	56 total; 6 since its plan	No NFIP community ID on this jurisdiction's plan row.
Vanderbilt village	Village	Expired on 2026-05-31		\$72,142.34	11 total; 1 since its plan	No NFIP community ID on this jurisdiction's plan row.
Bagley township	Township	Expired on 2026-05-31		no Public Assistance recorded	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Charlton township	Township	Expired on 2026-05-31		no Public Assistance recorded	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Chester township	Township	Expired on 2026-05-31		no Public Assistance recorded	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Corwith township	Township	Expired on 2026-05-31		no Public Assistance recorded	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Dover township	Township	Expired on 2026-05-31		no Public Assistance recorded	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Elmira township	Township	Expired on 2026-05-31		no Public Assistance recorded	17 total; 4 since its plan	No NFIP community ID on this jurisdiction's plan row.
Hayes township	Township	Expired on 2026-05-31		no Public Assistance recorded	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Livingston township	Township	Expired on 2026-05-31		no Public Assistance recorded	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Otsego Lake township	Township	Expired on 2026-05-31		\$54,340.10	9 total; 3 since its plan	No NFIP community ID on this jurisdiction's plan row.

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 2021-06-01 <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Cold Wave	\$8,444,864,477	\$8,027,200	25,061	\$56	\$4,739	\$1,645,956	under 0.0001%				
Drought	n/a	\$0	n/a	n/a	\$0	n/a					agriculture exposure is 0 in NRI
Earthquake	\$14,636,888,525	n/a	25,091	\$8,725	n/a	\$2,047	under 0.0001%				
Hail	\$8,444,864,477	\$8,027,200	25,061	\$485,802	\$3,200	\$182,385	0.00575%	\$0			
Heat Wave	\$8,444,864,477	\$8,027,200	25,061	\$481	under \$1	\$53,210	under 0.0001%				
Hurricane	\$8,444,864,477	\$8,027,200	25,061	\$5,362	\$149	\$2	under 0.0001%				
Ice Storm	\$8,443,992,476	n/a	25,060	\$4,471	n/a	\$1,281	under 0.0001%			\$3,447,594.16	
Inland Flooding	\$8,442,611,677	\$0	under 1	\$3,750,580	\$0	under \$1	n/a (see note)	\$15,500			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	\$118,409,686	n/a	347	\$284	n/a	\$3,945	0.00024%				
Lightning	\$8,444,864,477	n/a	25,061	\$27,793	n/a	\$408,872	0.000329%				
Strong Wind	\$8,444,864,477	\$8,027,200	25,061	\$163,612	\$348	\$330,327	0.00194%	\$23,000	\$30,000		Storm Events damage since the plan includes 1 zone-level High Wind record (\$30,000); a NOAA non-thunderstorm wind type, outside NRI's Strong Wind definition.
Tornado	\$8,444,864,477	\$8,027,200	25,061	\$204,433	\$64	\$287,760	0.00242%	\$50,000,000			
Wildfire	\$1,187,210,411	\$1,699,755	5,638	\$35,194	\$2	\$3,070	0.00296%				
Winter Weather	\$8,444,864,477	\$8,027,200	25,061	\$1,491	\$86	\$10,535	under 0.0001%		\$0	\$3,447,594.16	

Totals since 2021-06-01 (Storm Events through 2026-06-30): 27 county-coded records, 26 with a damage value recorded (including \$0), \$50,038,500; 28 zone-level records, 12 with a damage value recorded (including \$0), \$30,000 reported for the zone; Public Assistance: \$3,447,594.16 on 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	25,061
Building value (total, not at risk)	\$8,444,864,477
Agriculture value (total, not at risk)	\$8,027,200
NRI risk rating (all hazards)	Very Low
Expected annual loss, buildings and agriculture, all hazards	\$4,696,872
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)	\$2,929,388
Social vulnerability rating	Relatively Low
Community resilience rating	Relatively 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	0	Severe repetitive loss, NFIP insurance definition	0

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

Repeat-flood properties: county and state-level rows

Sources: 1, 4

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

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

Sources: 1, 4

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

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

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

Exact counts; no count suppression.

Sources

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

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 3. FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-29T150754Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)
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 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)
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What this packet is and what the plan adds

This packet is the federal data for the plan's risk assessment, 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

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Reuse, citation and corrections

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Cite this: Hazard Plain (2026). Otsego County, MI: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-30; County FIPS 26137). Automated baseline. <https://hazardplain.org/mi/26137/> 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.