

Lake County, OH

Risk-assessment baseline packet

County FIPS: 39085 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 2027-12-11. Plan: Lake County (FEMA plan 108640), approved 2022-12-12.

Since the plan was approved on 2022-12-12: no new hazard declaration and 67 NOAA Storm Events records; details under "What changed since your last plan".

Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Inland Flooding (\$30,879,555 a year), Tornado (\$3,510,275) and Strong Wind (\$1,790,385).

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; 39085 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 2027-12-11	Plan:	Lake County (FEMA plan 108640)
Approved:	2022-12-12	Days to expiry:	437

What changed since your last plan (approved 2022-12-12)

New federal declarations:	none	Storm Events records since approval:	67 records (data through 2026-06-30)
Repetitive loss now:	FMA RL 0, SRL 9 (44 CFR 77.2); any definition: 85	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: 24 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
Lake County	County	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Eastlake city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Fairport Harbor village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Grand River village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		this jurisdiction approved 2023-03-07
Kirtland city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Kirtland Hills village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Lakeline village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Madison village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Mentor city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Mentor-on-the-Lake city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
North Perry village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		this jurisdiction approved 2023-03-07
Painesville city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		this jurisdiction approved 2023-03-07
Perry village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Timberlake village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		this jurisdiction approved 2023-03-07
Waite Hill village	Village	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Wickliffe city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Willoughby city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Willoughby Hills city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Willowick city	City	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Concord township	Township	Plan 108640 approved 2022-12-12, pending adoption here; not yet eligible	Lake County (FEMA plan 108640), pending adoption here	2022-12-12 by FEMA; not yet adopted here	2027-12-11 once adopted		FEMA tracker shows a plan approvable pending adoption	Not yet eligible: adopt the approved plan.
Leroy township	Township	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Madison township	Township	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		

Jurisdiction	Type	Status	Plan	Approved	Expires	Days to expiry	Update underway	Notes
						<i>negative = days since expiry</i>		
Painesville township	Township	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		
Perry township	Township	Approved, expires 2027-12-11	Lake County (FEMA plan 108640)	2022-12-12	2027-12-11	437		

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	EAL agriculture	Cost of expected deaths and injuries	EAL total (see note)	Storm Events records, 1996 to 2026-06-30	Storm Events coverage note
				<i>modeled dollars per year</i>	<i>modeled dollars per year</i>	<i>FEMA's dollar value per year, not property damage</i>	<i>modeled dollars per year</i>	<i>count</i>	
1	Inland Flooding	Relatively Moderate	Relatively Moderate	\$30,292,418	\$17,338	\$569,799	\$30,879,555	50	
2	Tornado	Relatively Moderate	Relatively Moderate	\$2,163,038	\$332	\$1,346,905	\$3,510,275	4	
3	Strong Wind	Relatively High	Relatively High	\$1,235,521	\$3,965	\$550,900	\$1,790,385	246	Includes 58 High Wind and 8 Strong Wind records (NOAA non-thunderstorm wind types, outside NRI's Strong Wind definition).
4	Cold Wave	Relatively Low	Relatively Moderate	\$503,761	\$97,763	\$1,071,566	\$1,673,090	11	
5	Heat Wave	Relatively Low	Relatively Low	\$5,229	under \$1	\$887,967	\$893,196	2	
6	Hail	Relatively Moderate	Relatively Moderate	\$781,671	\$11,586	\$74,849	\$868,106	83	
7	Winter Weather	Relatively High	Relatively High	\$666,228	\$748	\$92,593	\$759,570	126	
8	Earthquake	Relatively Low	Relatively Low	\$446,237	n/a	\$85,696	\$531,934		Storm Events does not record earthquakes.

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
9	Ice Storm	Relatively Moderate	Relatively Moderate	\$296,971	n/a	\$164,214	\$461,185	1	
10	Lightning	Relatively Moderate	Relatively Moderate	\$22,042	n/a	\$382,965	\$405,007	1	
11	Hurricane	Very Low	Very Low	\$58,695	\$18,251	\$1,853	\$78,799	0	Declared 1 time; no Storm Events record of this type.
12	Wildfire	Very Low	Very Low	\$12,932	\$26	\$1,816	\$14,774	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).
13	Coastal Flooding	Very Low	Very Low	\$13,232	n/a	\$1,389	\$14,621	1	
14	Landslide	Very Low	Very Low	\$40	n/a	\$87	\$127	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	5	
	Tsunami	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	0	No recorded events in Storm Events since 1996 (data through 2026-06-30).

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

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

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

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

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

Supports FEMA checklist item B1-b: hazard location

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

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

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

Source: 5

Hazard	Highest-rated census tracts <i>NRI risk rating, score 0 to 100</i>
Earthquake	tract 2065 (Relatively Low, 63.8); tract 2043.04 (Relatively Low, 45.0); tract 2021 (Relatively Low, 41.8)
Hurricane	tract 2067 (Very Low, 51.3); tract 2052 (Very Low, 49.2); tract 2065 (Very Low, 47.2)
Landslide	tract 2064 (Very Low, 68.3); tract 2011.02 (Very Low, 67.0); tract 2037 (Very Low, 66.9)
Tornado	tract 2065 (Relatively Moderate, 73.7); tract 2067 (Relatively Moderate, 66.4); tract 2051 (Relatively Moderate, 61.4)
Tsunami	no tract has a National Risk Index rating for this hazard
Wildfire	tract 2063 (Very Low, 66.5); tract 2051 (Very Low, 65.2); tract 2011.02 (Very Low, 64.2)

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 2065 is Census Tract 2065). 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)	1 record, 2019 (1 zone-level)		Coastal Flood, 2019-04-14, \$75,000 property; \$0 crops (2019 dollars); NWS zone OHZ012		Countywide (zone-level records).	Flood depth: see the FEMA Flood Insurance Rate Map.
Cold/Wind Chill, Extreme Cold/Wind Chill	wind chill	11 records, 1996 to 2022 (11 zone-level)	1 day to 10 days (median 2 days); 11 with a recorded value	10 consecutive days, 1997-01-10 to 1997-01-19, zone-level	Extreme Cold/Wind Chill, 2012-04-29, \$10,000,000 property; \$0 crops (zone total, 2012 dollars)	Countywide (zone-level records).	
Frost/Freeze (outside NRI's Cold Wave definition)	crop damage		0				

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)	5 records, 1996 to 1999 (5 zone-level)	31 days to 122 days (median 76.5 days); 2 with a recorded value	122 days (4 months), 1999-06-01 to 1999-09-30, a run of 4 consecutive Storm Events drought records, zone-level	Drought, 1999-09-01, property not reported; \$1,000,000 crops (zone total, 1999 dollars)	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)	98 records, 1975 to 2024	0.25 in to 1.75 in (median 0.75 in); 98 with a recorded value	1.75 in hail, 2013-05-10; same size also recorded on 1975-07-03, 1982-06-22, 1987-06-27, 1991-04-09, 1991-10-04, 2011-08-01	Hail, 2013-06-12, \$250,000 property; \$0 crops (2013 dollars)	Event records naming jurisdictions in the plan: Mentor city (13 records), Madison township (12 records), Madison village (12 records), Painesville city (11 records), Painesville township (11 records), Willoughby city (10 records), Kirtland city (7 records), Concord township (5 records), Perry township (5 records), Perry village (5 records); and 6 more jurisdictions (see the Excel file).	
Excessive Heat, Heat	heat index (in event narratives)	2 records, 1999 (2 zone-level)	7 days to 31 days (median 19 days); 2 with a recorded value	July 1999 (1 monthly summary record), zone-level		Countywide (zone-level records).	
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)	1 record, 2005 (1 zone-level)		Ice Storm, 2005-01-05, \$500,000 property; crops not reported (2005 dollars); NWS zone OHZ012		Countywide (zone-level records).	
Flash Flood, Flood, Lakeshore Flood	damage and flood days (flood depth: FIRM)	50 records, 1996 to 2024 (10 zone-level)		Flash Flood, 2006-07-28, \$320,000,000 property; crops not reported (2006 dollars), 1 direct death		Event records naming jurisdictions in the plan: Painesville city (6 records), Painesville township (6 records), Mentor city (5 records), Willoughby city (5 records), Kirtland city (4 records), Concord township (2 records), Fairport Harbor village (2 records), Mentor-on-the-Lake city (2 records), Wickliffe city (2 records), Kirtland Hills village (1 record); and 3 more jurisdictions (see the Excel file). Zone-level records (10) apply countywide.	Flood depth: see the FEMA Flood Insurance Rate Map. Storm Events damage is often \$0 or blank for floods, major ones included; FEMA Public Assistance by declaration (B1-d) shows which floods cost the most.
Debris Flow	none (count and damage only)	0					

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Lightning	annualized frequency (the measure FEMA's Local Mitigation Planning Handbook names)	1 record, 2000		Lightning, 2000-04-20, \$50,000 property; crops not reported (2000 dollars)		No event record names a jurisdiction in the plan.	Storm Events lists lightning with damage or casualties.
High Wind and Strong Wind (outside NRI's Strong Wind definition)	wind speed (kt and mph)	66 records, 1996 to 2024 (65 zone-level)	35 kt (40 mph) to 69 kt (79 mph) (median 50 kt (58 mph)); 54 with a recorded value	69 kt (79 mph), measurement type not recorded, High Wind, 1996-10-30; NWS zone OHZ012	High Wind, 2008-09-14, \$5,000,000 property; \$0 crops (zone total, 2008 dollars)	No event record names a jurisdiction in the plan. Zone-level records (65) apply countywide.	
Thunderstorm Wind	wind speed (kt and mph)	234 records, 1960 to 2026	50 kt (58 mph) to 75 kt (86 mph) (median 50 kt (58 mph)); 182 with a recorded value	75 kt (86 mph) estimated gust, Thunderstorm Wind, 2024-08-06; same speed and measurement basis also recorded on 2024-08-06	Thunderstorm Wind, 1994-08-28, \$5,000,000 property; crops not recorded (1994 dollars)	Event records naming jurisdictions in the plan: Painesville city (29 records), Painesville township (29 records), Mentor city (27 records), Madison township (16 records), Madison village (16 records), Concord township (14 records), Willoughby city (12 records), Kirtland city (9 records), Wickliffe city (9 records), Mentor-on-the-Lake city (6 records); and 8 more jurisdictions (see the Excel file).	
Tornado	Enhanced Fujita (Fujita before Feb 2007)	5 records, 1969 to 2024	F/EF0 to F/EF2 (median F/EF1); 5 with a recorded value	F2 tornado, 1969-07-04, 7.2 mi path length (whole path, pre-1996), 100 yd wide, \$250,000 property; crops not recorded (1969 dollars), 40 direct injuries		Event records naming jurisdictions in the plan: Mentor city (2 records), Kirtland city (1 record).	Before 1996 a tornado is listed once, under the county where it began, with its whole path's rating and length; from 1996 on, each county lists its own segment. Length is not used to rank tornadoes (see Methods).
Tsunami	none (count and damage only)	0					
Wildfire	acres burned (local data)	0					
Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet	none in data (snowfall: local data)	126 records, 1996 to 2025 (125 zone-level)		Winter Storm, 2008-03-04, \$7,500,000 property; \$0 crops (2008 dollars); NWS zone OHZ012		No event record names a jurisdiction in the plan. Zone-level records (125) apply countywide.	

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".

In event narratives only (local data needed): wind chill, temperature, heat index, ice thickness, acres burned and snow depth; any physical measure of debris flow, lightning and tsunami.

Storm Events records are more complete after 1996; before 1996 only Tornado (from 1950), Hail and Thunderstorm Wind (from 1955) exist. Zone-level records from zones that 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: 15 declarations covering 9 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>	Notes
2020-03-31	2020-01-20	DR-4507-OH	Major disaster	COVID-19 Pandemic	Non-natural, not counted	\$9,619,571.06	
2020-03-13	2020-01-20	EM-3457-OH	Emergency	COVID-19	Non-natural, not counted	no Public Assistance recorded	same incident as DR-4507
2012-06-30	2012-06-29	EM-3346-OH	Emergency	Severe Storms	Hazard not mapped (severe storm title names no single hazard); not counted	no Public Assistance recorded	
2008-04-24	2008-03-07	EM-3286-OH	Emergency	Record Snow and Near Record Snow	Winter Weather	\$581,534.62	
2006-08-01	2006-07-27	DR-1656-OH	Major disaster	Severe Storms, Straight Line Winds, and Flooding	Inland Flooding; Strong Wind	\$4,875,507.64	
2005-09-13	2005-08-29	EM-3250-OH	Emergency	Hurricane Katrina Evacuation	Hurricane: evacuation support, not a local hazard event; not counted	no Public Assistance recorded	
2004-09-19	2004-08-27	DR-1556-OH	Major disaster	Severe Storms and Flooding	Inland Flooding: designated for Hazard Mitigation only (no Public or Individual Assistance for this county); not counted	PA not declared for this county	
2003-09-23	2003-08-14	EM-3187-OH	Emergency	Power Outage	Non-natural, not counted	\$99,806.71	
1989-06-10	1989-05-23	DR-831-OH	Major disaster	Severe Storms & Flooding	Inland Flooding	PA not declared for this county	
1978-01-26	1978-01-26	EM-3055-OH	Emergency	Blizzards & Snowstorms	Winter Weather	no Public Assistance recorded	
1975-09-11	1975-09-11	DR-480-OH	Major disaster	Winds, Tornadoes, Heavy Rains & Flooding	Inland Flooding (primary); also designated: Tornado	no Public Assistance recorded	
1973-04-27	1973-04-27	DR-377-OH	Major disaster	Severe Storms & Flooding	Inland Flooding	no Public Assistance recorded	
1972-11-24	1972-11-24	DR-362-OH	Major disaster	Severe Storms & Flooding	Inland Flooding	no Public Assistance recorded	
1972-07-19	1972-07-19	DR-345-OH	Major disaster	Tropical Storm Agnes	Inland Flooding (primary); also designated: Hurricane	no Public Assistance recorded	
1969-07-15	1969-07-15	DR-266-OH	Major disaster	Tornadoes, Severe Storms & Flooding	Tornado (primary); also designated: 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
1964-03-24	1964-03-24	DR-167-OH	Major disaster	Severe Storms & Flooding	Inland Flooding
1959-01-23	1959-01-23	DR-90-OH	Major disaster	Floods	Inland Flooding
1956-05-17	1956-05-17	DR-57-OH	Major disaster	Wind Storm	Other, not an NRI hazard; not counted

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: 1 row, \$3,333

Sources: 2, 3

FEMA number	Declared	Title	Applicant	PA obligated <i>federal share obligated, nominal dollars</i>
DR-1580-OH	2005-02-15	Severe Winter Storms, Flooding, and Mudslides	Cairo, Village of	\$3,333

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.

Public Assistance not placed in any Ohio county: 1 row, \$3,080,910.74; listed on the Ohio state page.

Source: 3

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	1	0	0	0	0	0	1996 to 2026-06-30	
Cold Wave	11	1	0	1	0	0	1996 to 2026-06-30	
Drought	5	0	0	0	0	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	98	4	5	9	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	1	0	1996 to 2026-06-30	No Storm Events records of this type; 1 federal declared incident (see declarations table)
Ice Storm	1	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
Inland Flooding	50	5	0	5	7	0	1996 to 2026-06-30	
Landslide	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Lightning	1	0	0	0	0	0	1996 to 2026-06-30	
Strong Wind	300	46	3	49	1	0	1955 to 2026-06-30	Includes 58 High Wind and 8 Strong Wind records.
Tornado	5	2	0	3	2	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	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	126	9	4	13	2	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	Flags	Why listed
2024-08-06	Thunderstorm Wind	75 kt (86 mph) estimated gust	\$20,000 property; \$0 crops (2024 dollars)	0, 0	(CGF)CUYAHOGA CO ARP	new since last plan; within last 5 years	B1-c worst recorded: Thunderstorm Wind
2019-04-14	Coastal Flood		\$75,000 property; \$0 crops (zone total, 2019 dollars)	0, 0	NWS zone OHZ012 (LAKE), zone-level		B1-c worst recorded: Coastal Flood, Storm Surge/Tide
2013-05-10	Hail	1.75 in	\$25,000 property; \$0 crops (2013 dollars)	0, 0	EAST LAKE		B1-c worst recorded: Hail
2008-03-04	Winter Storm		\$7,500,000 property; \$0 crops (zone total, 2008 dollars)	0, 0	NWS zone OHZ012 (LAKE), zone-level		B1-c worst recorded: Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet
2006-07-28	Flash Flood		\$320,000,000 property; crops not reported (2006 dollars)	1, 0	COUNTYWIDE		deaths or injuries recorded
2005-01-05	Ice Storm		\$500,000 property; crops not reported (zone total, 2005 dollars)	0, 0	NWS zone OHZ012 (LAKE), zone-level		B1-c worst recorded: Ice Storm
2000-04-20	Lightning		\$50,000 property; crops not reported (2000 dollars)	0, 0	EAST LAKE		B1-c worst recorded: Lightning
1999-07-01	Heat		damage not reported	0, 0	NWS zone OHZ012 (LAKE), zone-level		B1-c worst recorded: Excessive Heat, Heat
1998-01-13	Winter Weather		damage not reported	0, 45	COUNTYWIDE		deaths or injuries recorded
1997-01-10	Cold/Wind Chill		\$20,000 property; crops not reported (zone total, 1997 dollars)	0, 0	NWS zone OHZ012 (LAKE), zone-level		B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill
1996-10-30	High Wind	69 kt (79 mph), measurement type not recorded	\$100,000 property; \$25,000 crops (zone total, 1996 dollars)	0, 0	NWS zone OHZ012 (LAKE), zone-level		B1-c worst recorded: High Wind and Strong Wind
1969-07-04	Tornado	F2, 7.2 mi path length (whole path, pre-1996), 100 yd wide	\$250,000 property; crops not recorded (1969 dollars)	0, 40	location not recorded		deaths or injuries recorded

The full list is in the Excel file, sheet "B1-d Storm Events history" (600 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).

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

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	0.0163	events per year at a location (modeled)	about 0.016 per year at a given location in the county	Possible	Storm Events records in 1 of 30 years, 1996 to 2025 (3.33%)	not shown	modeled	see B1-f	
Cold Wave	3	event-days per year	about 3 days per year	Likely	Storm Events event-days in 9 of 30 years, 1996 to 2025 (30%)	57	2005-11-12 to 2024-11-12 (19 years)	countywide	
Drought	0	event-days per year	none modeled	Possible	Storm Events 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	0.000903	annual probability at a location	chance a given location in the county has at least minor-damage shaking in a year: 0.0903%			not shown	modeled	see B1-f	No descriptor (Storm Events does not record earthquakes).
Hail	2.68	events per year	about 2.68 per year	Highly likely	FEMA annualized frequency (modeled)	101.9 (modeled)	1986 to 2023 (38 years)	countywide	
Heat Wave	1.32	event-days per year	about 1.32 days per year	Possible	Storm Events event-days in 1 of 30 years, 1996 to 2025 (3.33%)	22	2005-11-12 to 2024-11-12 (19 years)	countywide	
Hurricane	0.0194	events per year	about 1 in 52 years	Possible	FEMA annualized frequency (modeled)	6	1851 to 2024 (Atlantic)	see B1-f	NRI counts hurricane and tropical storm tracks passing within storm-force wind range; federal declarations are in B1-d.
Ice Storm	0.984	event-days per year	about 0.984 days per year	Possible	Storm Events event-days in 1 of 30 years, 1996 to 2025 (3.33%)	16	1946-12-31 to 2014-02-12 (67 years)	countywide	
Inland Flooding	1.39	event-days per year	about 1.39 days per year	Likely	Storm Events event-days in 18 of 30 years, 1996 to 2025 (60%)	39	1996 to 2023 (28 years)	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
Landslide	0.0653	events per year (modeled)	about 1 in 15 years	Possible	FEMA annualized frequency (modeled)	not shown	modeled	see B1-f	
Lightning	38	days per year with a strike	about 38 days per year	Highly likely	FEMA annualized frequency (modeled)	not shown	1995 to 2023 (29 years; CONUS)	countywide	
Strong Wind	1.55	events per year	about 1.55 per year	Highly likely	FEMA annualized frequency (modeled)	14	1986 to 2023 (38 years)	countywide	
Tornado	0.226	events per year	about 1 in 4 years	Likely	FEMA annualized frequency (modeled)	not shown	1950 to 2023 (EF2+); 1986 to 2023 (EF0-1)	see B1-f	
Tsunami		annual probability at the most exposed location (used in place of a county value)			Storm Events records in 0 of 30 years, 1996 to 2025 (0%)	not shown	modeled	see B1-f	No descriptor: no Storm Events record 1996 to 2025
Wildfire	0.0000375	annual probability at a location	chance a given location in the county burns in a year: 0.00375%		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	23.8	event-days per year	about 23.8 days per year	Highly likely	Storm Events event-days in 29 of 30 years, 1996 to 2025 (96.7%)	452	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	24	30	0.8
Hail	2.00 in+	1996 to 2025	0	30	0
Thunderstorm Wind (counted as NRI Strong Wind)	50-64 kt	1996 to 2025	141	30	4.7
Thunderstorm Wind (counted as NRI Strong Wind)	65 kt+	1996 to 2025	12	30	0.4
Thunderstorm Wind (counted as NRI Strong Wind)	unmeasured or below 50 kt	1996 to 2025	17	30	0.567
Tornado	EF0-1	1996 to 2025	4	30	0.133
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	23 of 59	68.1	73.5	83.1	Relatively Low 6, Very Low 17, No Rating 36
Cold Wave	59 of 59	22.5	32.2	59.4	Relatively Moderate 6, Relatively Low 53
Drought	0 of 59				No Rating 59
Earthquake	59 of 59	4.5	21.5	63.8	Relatively Low 5, Very Low 54
Hail	59 of 59	27.9	58.0	85.7	Relatively Moderate 8, Relatively Low 48, Very Low 3
Heat Wave	59 of 59	6.0	17.0	40.1	Relatively Low 30, Very Low 29
Hurricane	59 of 59	19.6	32.7	51.3	Very Low 59
Ice Storm	59 of 59	23.2	55.7	88.1	Relatively Moderate 15, Relatively Low 41, Very Low 3
Inland Flooding	59 of 59	0.8	36.0	89.0	Relatively High 3, Relatively Moderate 12, Relatively Low 28, Very Low 16
Landslide	58 of 59	8.8	24.4	68.3	Very Low 58, No Rating 1
Lightning	59 of 59	14.3	30.6	53.9	Relatively Moderate 4, Relatively Low 47, Very Low 8
Strong Wind	59 of 59	25.5	59.0	91.7	Relatively High 3, Relatively Moderate 35, Relatively Low 21
Tornado	59 of 59	26.3	43.7	73.7	Relatively Moderate 15, Relatively Low 41, Very Low 3
Tsunami	0 of 59				Insufficient Data 59
Wildfire	59 of 59	18.9	39.9	66.5	Very Low 59
Winter Weather	59 of 59	40.9	81.4	98.6	Very High 1, Relatively High 37, Relatively Moderate 20, Relatively 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
Lake County	County	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 11	\$67,881.07	0 total; 0 since its plan	
Eastlake city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 2; any 41	\$265,873.15	0 total; 0 since its plan	Includes \$16,735.32 for declarations not counted as hazard incidents (DR-4507-OH, EM-3187-OH).
Fairport Harbor village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 1; any 2	\$60,348.37	7 total; 1 since its plan	Includes \$2,589 for declarations not counted as hazard incidents (EM-3187-OH).
Grand River village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 1; any 2	\$4,903.95	2 total; 1 since its plan	
Kirtland city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	\$121,316.30	21 total; 1 since its plan	Includes \$16,657.72 for declarations not counted as hazard incidents (DR-4507-OH, EM-3187-OH).
Kirtland Hills village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	\$33,902.47	5 total; 0 since its plan	Includes \$1,746.90 for declarations not counted as hazard incidents (EM-3187-OH).
Lakeline village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Madison village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 3	\$159,129.61	29 total; 3 since its plan	Includes \$1,857.75 for declarations not counted as hazard incidents (EM-3187-OH).
Mentor city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 2	\$400,093.49	47 total; 6 since its plan	Includes \$181,625.19 for declarations not counted as hazard incidents (DR-4507-OH, EM-3187-OH).
Mentor-on-the-Lake city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 1	\$24,249.09	10 total; 6 since its plan	
North Perry village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	\$21,613.50	1 total; 0 since its plan	
Painesville city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 5	no Public Assistance recorded	46 total; 6 since its plan	
Perry village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	\$9,803.06	10 total; 1 since its plan	
Timberlake village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	0 total; 0 since its plan	
Waite Hill village	Village	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	no Public Assistance recorded	3 total; 1 since its plan	
Wickliffe city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 0	\$111,721.38	13 total; 3 since its plan	Includes \$59,450.25 for declarations not counted as hazard incidents (DR-4507-OH, EM-3187-OH).
Willoughby city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 1; any 3	\$445,674.29	27 total; 4 since its plan	Includes \$63,754.16 for declarations not counted as hazard incidents (DR-4507-OH, EM-3187-OH).
Willoughby Hills city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 4; any 12	\$92,059.96	6 total; 0 since its plan	Includes \$29,967.11 for declarations not counted as hazard incidents (DR-4507-OH, EM-3187-OH).

Jurisdiction	Type	Plan status	Repetitive loss	Public Assistance to this jurisdiction	Event records naming this place	Notes
			<i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i>	<i>FEMA records matched by applicant name; federal share obligated, nominal dollars</i>	<i>all years; since its plan</i>	
Willowick city	City	Approved, expires 2027-12-11	FMA RL 0, SRL 0; any 2	\$121,583.39	1 total; 1 since its plan	Includes \$4,094.51 for declarations not counted as hazard incidents (EM-3187-OH).
Concord township	Township	Plan 108640 approved 2022-12-12, pending adoption here; not yet eligible		\$248,974.16	21 total; no approved plan	No NFIP community ID on this jurisdiction's plan row. Includes \$11,693.18 for declarations not counted as hazard incidents (DR-4507-OH).
Leroy township	Township	Approved, expires 2027-12-11		\$274,247.65	0 total; 0 since its plan	No NFIP community ID on this jurisdiction's plan row.
Madison township	Township	Approved, expires 2027-12-11		\$442,243.02	29 total; 3 since its plan	No NFIP community ID on this jurisdiction's plan row. Includes \$1,123.28 for declarations not counted as hazard incidents (EM-3187-OH).
Painesville township	Township	Approved, expires 2027-12-11		\$95,882.18	46 total; 6 since its plan	No NFIP community ID on this jurisdiction's plan row. Includes \$25,476.35 for declarations not counted as hazard incidents (DR-4507-OH, EM-3187-OH).
Perry township	Township	Approved, expires 2027-12-11		\$87,600.80	10 total; 1 since its plan	No NFIP community ID on this jurisdiction's plan row.

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

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

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

Local data needed

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

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

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

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

Hazard	Building exposure <i>modeled dollars</i>	Agriculture exposure <i>modeled dollars</i>	Population exposed <i>people</i>	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2022-12-12 <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Coastal Flooding	\$1,380,291,927	n/a	3,099	\$13,232	n/a	\$1,389	0.000959%				
Cold Wave	\$51,372,391,595	\$94,793,255	232,492	\$503,761	\$97,763	\$1,071,566	0.000981%				
Drought	n/a	\$0	n/a	n/a	\$0	n/a					agriculture exposure is 0 in NRI
Earthquake	\$88,069,440,094	n/a	232,603	\$446,237	n/a	\$85,696	0.000507%				
Hail	\$51,372,391,595	\$94,793,255	232,492	\$781,671	\$11,586	\$74,849	0.00152%	\$0			
Heat Wave	\$51,372,391,595	\$94,793,255	232,492	\$5,229	under \$1	\$887,967	under 0.0001%				
Hurricane	\$51,345,406,833	\$94,781,823	232,374	\$58,695	\$18,251	\$1,853	0.000114%				
Ice Storm	\$50,314,242,053	n/a	225,374	\$296,971	n/a	\$164,214	0.00059%				
Inland Flooding	\$51,347,254,871	\$876,522	2,495	\$30,292,418	\$17,338	\$569,799	n/a (see note)	\$110,000			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	\$422,908,731	n/a	1,731	\$40	n/a	\$87	under 0.0001%				
Lightning	\$51,372,391,595	n/a	232,492	\$22,042	n/a	\$382,965	under 0.0001%				
Strong Wind	\$51,372,391,595	\$94,793,255	232,492	\$1,235,521	\$3,965	\$550,900	0.00241%	\$173,500	\$0		
Tornado	\$51,372,391,595	\$94,793,255	232,492	\$2,163,038	\$332	\$1,346,905	0.00421%	\$210,000			
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 2022-12-12 <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	\$10,241,908,013	\$44,696,819	46,588	\$12,932	\$26	\$1,816	0.000126%				
Winter Weather	\$51,372,391,595	\$94,793,255	232,492	\$666,228	\$748	\$92,593	0.0013%		\$200,000		

Totals since 2022-12-12 (Storm Events through 2026-06-30): 53 county-coded records, 53 with a damage value recorded (including \$0), \$493,500; 14 zone-level records, 12 with a damage value recorded (including \$0), \$200,000 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	232,492
Building value (total, not at risk)	\$51,372,391,595
Agriculture value (total, not at risk)	\$94,793,255
NRI risk rating (all hazards)	Relatively Low
Expected annual loss, buildings and agriculture, all hazards	\$36,648,025
Expected annual loss, population equivalence, all hazards (NRI values each statistical life at \$13.7M; a modeled value of expected deaths and injuries, not property damage)	\$5,232,599
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)	0	Severe repetitive loss, FMA definition (44 CFR 77.2)	9
Repetitive loss, NFIP insurance definition	85	Severe repetitive loss, NFIP insurance definition	8

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	9	85	8	85	0	34
of which: Eastlake city	0	2	41	1	41	0	15
of which: Fairport Harbor village	0	1	2	1	2	0	2
of which: Grand River village	0	1	2	1	2	0	1
of which: Madison village	0	0	3	0	3	0	3
of which: Mentor city	0	0	2	0	2	0	0
of which: Mentor-on-the-Lake city	0	0	1	0	1	0	1
of which: Painesville city	0	0	5	0	5	0	1
of which: Willoughby city	0	1	3	1	3	0	0
of which: Willoughby Hills city	0	4	12	4	12	0	8
of which: Willowick city	0	0	2	0	2	0	0
of which: Youngstown city (plan jurisdiction listed on the Mahoning County and Trumbull County page)	0	0	1	0	1	0	0
of which: Lake County (unincorporated area)	0	0	11	0	11	0	3
Statewide, no county in FEMA's file	0	0	1	0	1	0	0

1 of the county's repeat-flood properties belong to NFIP communities whose plan jurisdiction is not listed on this page (the community rows above name the page that lists it).

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>
Lake County	390771	0	0	11	0	11	0	3
Eastlake city	390313	0	2	41	1	41	0	15
Fairport Harbor village	390314	0	1	2	1	2	0	2
Grand River village	390315	0	1	2	1	2	0	1
Kirtland city	390616	0	0	0	0	0	0	0
Kirtland Hills village	390810	0	0	0	0	0	0	0
Lakeline village	390888	0	0	0	0	0	0	0
Madison village	390316	0	0	3	0	3	0	3
Mentor city	390317	0	0	2	0	2	0	0
Mentor-on-the-Lake city	390318	0	0	1	0	1	0	1
North Perry village	390742	0	0	0	0	0	0	0
Painesville city	390319	0	0	5	0	5	0	1
Perry village	390320	0	0	0	0	0	0	0
Timberlake village	390890	0	0	0	0	0	0	0
Waite Hill village	390649	0	0	0	0	0	0	0
Wickliffe city	390321	0	0	0	0	0	0	0
Willoughby city	390322	0	1	3	1	3	0	0
Willoughby Hills city	390323	0	4	12	4	12	0	8
Willowick city	390324	0	0	2	0	2	0	0

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

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

County repeat-flood properties by occupancy group

Sources: 1, 4

Occupancy group	RL, FMA <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
single-family residential	0	7	71	6	71	0	27
2 to 4 unit residential	0	0	2	0	2	0	2
other residential	0	0	3	0	3	0	0
non-residential	0	2	9	2	9	0	5
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 85 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 (the summary on page 1 says how it is organized); the plan and FEMA's review decide whether each 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). Lake County, OH: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-30; County FIPS 39085). Automated baseline. <https://hazardplain.org/oh/39085/> 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