

# Gladwin County, MI

Risk-assessment baseline packet

County FIPS: 26051    Release: 2026-10    Data as of: 2026-09-30    Storm Events data through: 2026-06-30

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## Summary

Plan status as of 2026-09-30: Approved, expires 2029-12-29. Plan: Gladwin County (FEMA plan 110227), approved 2024-12-30.

Since the plan was approved on 2024-12-30: no new federal declaration.

NOAA Storm Events records since that date: 4 records (data through 2026-06-30).

Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Inland Flooding (\$5,458,662 a year), Cold Wave (\$1,389,817) and Tornado (\$883,332).

Repetitive-loss flood properties now: FMA RL 0, SRL 0 (44 CFR 77.2); any definition: 4.

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; 26051 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 2029-12-29 | Plan:           | Gladwin County (FEMA plan 110227) |
| Approved: | 2024-12-30                   | Days to expiry: | 1,186                             |

What changed since your last plan (approved 2024-12-30)

|                           |                                                  |                                      |                                       |
|---------------------------|--------------------------------------------------|--------------------------------------|---------------------------------------|
| New federal declarations: | none                                             | Storm Events records since approval: | 4 records (data through 2026-06-30)   |
| Repetitive loss now:      | FMA RL 0, SRL 0 (44 CFR 77.2); any definition: 4 | 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: 13 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<br><i>negative = days since expiry</i> | Update underway                                       | Notes                                      |
|--------------------|----------|--------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------|-------------------------|-------------------------------------------------------|-------------------------------------------------------|--------------------------------------------|
| Gladwin County     | County   | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       |                                            |
| Beaverton city     | City     | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       |                                            |
| Gladwin city       | City     | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       |                                            |
| Beaverton township | Township | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       | this jurisdiction approved 2025-04-14      |
| Billings township  | Township | Plan 110227 approved 2024-12-30, pending adoption here; not yet eligible | Gladwin County (FEMA plan 110227), pending adoption here | 2024-12-30 by FEMA; not yet adopted here | 2029-12-29 once adopted |                                                       | FEMA tracker shows a plan approvable pending adoption | Not yet eligible: adopt the approved plan. |
| Buckeye township   | Township | Plan 110227 approved 2024-12-30, pending adoption here; not yet eligible | Gladwin County (FEMA plan 110227), pending adoption here | 2024-12-30 by FEMA; not yet adopted here | 2029-12-29 once adopted |                                                       | FEMA tracker shows a plan approvable pending adoption | Not yet eligible: adopt the approved plan. |
| Butman township    | Township | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       |                                            |
| Gladwin township   | Township | Plan 110227 approved 2024-12-30, pending adoption here; not yet eligible | Gladwin County (FEMA plan 110227), pending adoption here | 2024-12-30 by FEMA; not yet adopted here | 2029-12-29 once adopted |                                                       | FEMA tracker shows a plan approvable pending adoption | Not yet eligible: adopt the approved plan. |
| Hay township       | Township | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       | this jurisdiction approved 2025-04-14      |
| Sage township      | Township | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       | this jurisdiction approved 2025-01-29      |
| Secord township    | Township | Plan 110227 approved 2024-12-30, pending adoption here; not yet eligible | Gladwin County (FEMA plan 110227), pending adoption here | 2024-12-30 by FEMA; not yet adopted here | 2029-12-29 once adopted |                                                       | FEMA tracker shows a plan approvable pending adoption | Not yet eligible: adopt the approved plan. |
| Sherman township   | Township | Plan 110227 approved 2024-12-30, pending adoption here; not yet eligible | Gladwin County (FEMA plan 110227), pending adoption here | 2024-12-30 by FEMA; not yet adopted here | 2029-12-29 once adopted |                                                       | FEMA tracker shows a plan approvable pending adoption | Not yet eligible: adopt the approved plan. |
| Tobacco township   | Township | Approved, expires 2029-12-29                                             | Gladwin County (FEMA plan 110227)                        | 2024-12-30                               | 2029-12-29              | 1,186                                                 |                                                       | this jurisdiction approved 2025-01-29      |

## 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<br>by EAL | Hazard          | NRI risk<br>rating  | EAL rating          | EAL buildings<br><i>modeled dollars<br/>per year</i> | EAL<br>agriculture<br><i>modeled dollars<br/>per year</i> | Cost of expected<br>deaths and injuries<br><i>FEMA's dollar value per<br/>year, not property damage</i> | EAL total (see<br>note)<br><i>modeled dollars<br/>per year</i> | Storm Events<br>records, 1996 to<br>2026-06-30<br><i>count</i> | Storm Events coverage note                                                                                               |
|----------------|-----------------|---------------------|---------------------|------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 1              | Inland Flooding | Relatively Low      | Relatively Low      | \$5,458,290                                          | \$113                                                     | \$258                                                                                                   | \$5,458,662                                                    | 14                                                             |                                                                                                                          |
| 2              | Cold Wave       | Relatively Moderate | Relatively Moderate | \$273                                                | \$5,972                                                   | \$1,383,572                                                                                             | \$1,389,817                                                    | 4                                                              |                                                                                                                          |
| 3              | Tornado         | Relatively Low      | Relatively Low      | \$510,547                                            | \$305                                                     | \$372,480                                                                                               | \$883,332                                                      | 3                                                              |                                                                                                                          |
| 4              | Strong Wind     | Relatively Moderate | Relatively Moderate | \$440,256                                            | \$2,341                                                   | \$237,161                                                                                               | \$679,758                                                      | 61                                                             | Includes 3 High Wind and 3 Strong Wind records (NOAA non-thunderstorm wind types, outside NRI's Strong Wind definition). |
| 5              | Lightning       | Relatively Moderate | Relatively Low      | \$4,524                                              | n/a                                                       | \$307,535                                                                                               | \$312,059                                                      | 1                                                              |                                                                                                                          |
| 6              | Hail            | Relatively Low      | Relatively Low      | \$216,008                                            | \$2,346                                                   | \$13,536                                                                                                | \$231,890                                                      | 36                                                             |                                                                                                                          |
| 7              | Winter Weather  | Relatively Moderate | Relatively Moderate | \$4,316                                              | \$81                                                      | \$165,509                                                                                               | \$169,906                                                      | 45                                                             |                                                                                                                          |
| 8              | Heat Wave       | Very Low            | Very Low            | \$569                                                | under \$1                                                 | \$38,599                                                                                                | \$39,168                                                       | 2                                                              |                                                                                                                          |
| 9              | Ice Storm       | Relatively Low      | Relatively Low      | \$30,540                                             | n/a                                                       | \$274                                                                                                   | \$30,814                                                       | 4                                                              |                                                                                                                          |
| 10             | Earthquake      | Very Low            | Very Low            | \$19,985                                             | n/a                                                       | \$6,206                                                                                                 | \$26,191                                                       |                                                                | Storm Events does not record earthquakes.                                                                                |
| 11             | Wildfire        | Very Low            | Very Low            | \$15,684                                             | \$7                                                       | \$1,922                                                                                                 | \$17,612                                                       | 0                                                              | No recorded events in Storm Events since 1996 (data through 2026-06-30).                                                 |
| 12             | Hurricane       | Very Low            | Very Low            | \$5,196                                              | \$327                                                     | \$4                                                                                                     | \$5,528                                                        | 0                                                              | No recorded events in Storm Events since 1996 (data through 2026-06-30).                                                 |

| Rank<br>by EAL | Hazard    | NRI risk<br>rating | EAL rating                   | EAL buildings<br><i>modeled dollars<br/>per year</i> | EAL<br>agriculture<br><i>modeled dollars<br/>per year</i> | Cost of expected<br>deaths and injuries<br><i>FEMA's dollar value per<br/>year, not property damage</i> | EAL total (see<br>note)<br><i>modeled dollars<br/>per year</i> | Storm Events<br>records, 1996 to<br>2026-06-30<br><i>count</i> | Storm Events coverage note                                               |
|----------------|-----------|--------------------|------------------------------|------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------|
| 13             | Landslide | Very Low           | Very Low                     | \$62                                                 | n/a                                                       | \$455                                                                                                   | \$516                                                          | 0                                                              | No recorded events in Storm Events since 1996 (data through 2026-06-30). |
| 14             | Drought   | No Rating          | No Expected<br>Annual Losses | n/a                                                  | \$0                                                       | n/a                                                                                                     | \$0                                                            | 0                                                              | Declared 1 time; no Storm Events record of this type.                    |

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, tsunami 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<br><i>NRI risk rating, score 0 to 100</i>                                     |
|------------|-----------------------------------------------------------------------------------------------------------|
| Earthquake | tract 7 (Very Low, 26.0); tract 8 (Very Low, 20.5); tract 5 (Very Low, 13.9)                              |
| Hurricane  | tract 3 (Very Low, 35.7); tract 9 (Very Low, 33.7); tract 7 (Very Low, 33.1)                              |
| Landslide  | tract 3 (Relatively Low, 83.7); tract 1.01 (Relatively Low, 82.7); tract 5 (Very Low, 79.7)               |
| Tornado    | tract 7 (Relatively High, 74.9); tract 8 (Relatively Moderate, 70.8); tract 4 (Relatively Moderate, 66.3) |
| Wildfire   | tract 8 (Relatively Low, 77.2); tract 3 (Relatively Low, 76.5); tract 1.01 (Relatively Low, 76.5)         |

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 7 is Census Tract 7). 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<br><i>count and years</i>      | Observed range                                               | Worst recorded event                                                                | Most damaging<br>(when different) | How it applies to jurisdictions                                                                                                                                                                     | Note                                                                                                                                                                 |
|---------------------------------------------------|---------------------------------------|----------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cold/Wind Chill, Extreme Cold/Wind Chill          | wind chill                            | 4 records, 2007 to 2019 (4 zone-level) | 1 day to 2 days (median 2 days); 4 with a recorded value     | 2 consecutive days, 2015-02-14 to 2015-02-15, 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) | 0                                      |                                                              |                                                                                     |                                   |                                                                                                                                                                                                     | Storm Events enters a drought at D2 or worse east of the Rockies and D3 or worse from the Rockies west (NWS Instruction 10-1605); NRI drought counts D3 and D4 only. |
| Earthquake                                        | Modified Mercalli (local data)        | 0                                      |                                                              |                                                                                     |                                   |                                                                                                                                                                                                     | Storm Events does not record earthquakes; the USGS earthquake catalog is the source.                                                                                 |
| Hail                                              | hail size (inches)                    | 41 records, 1983 to 2026               | 0.75 in to 2.5 in (median 0.88 in); 41 with a recorded value | 2.5 in hail, 1998-09-26; same size also recorded on 1983-07-21                      |                                   | Event records naming jurisdictions in the plan: Gladwin city (19 records), Gladwin township (19 records), Beaverton city (3 records), Beaverton township (3 records), Buckeye township (2 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)   | 4 records, 2001 to 2022 (4 zone-level) |                                                              | Ice Storm, 2013-04-11, \$60,000 property; \$0 crops (2013 dollars); NWS zone MIZ041 |                                   | Countywide (zone-level records).                                                                                                                                                                    | Ice thickness: in event narratives only (local data needed).                                                                                                         |

| Hazard                                                           | Scale                                                                              | Records<br><i>count and years</i>       | Observed range                                                                      | Worst recorded event                                                                  | Most damaging<br>(when different)                                          | How it applies to jurisdictions                                                                                                                                                                                                   | Note                                                                                                                                                                                                                 |
|------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flash Flood, Flood, Lakeshore Flood                              | damage and flood days (flood depth: FIRM)                                          | 14 records, 1996 to 2020 (5 zone-level) |                                                                                     | Flood, 2020-05-18, \$11,000,000 property; \$0 crops (2020 dollars)                    |                                                                            | Event records naming jurisdictions in the plan: Gladwin city (2 records), Gladwin township (2 records), Butman township (1 record). Zone-level records (5) apply countywide.                                                      | Flood depth: see the FEMA Flood Insurance Rate Map. Storm Events damage is often \$0 or blank for floods, major ones included; FEMA Public Assistance by declaration (B1-d) shows which floods cost the most.        |
| Debris Flow                                                      | none (count and damage only)                                                       | 0                                       |                                                                                     |                                                                                       |                                                                            |                                                                                                                                                                                                                                   | Physical measure: in event narratives only (local data needed).                                                                                                                                                      |
| Lightning                                                        | annualized frequency (the measure FEMA's Local Mitigation Planning Handbook names) | 1 record, 1996                          |                                                                                     | Lightning, 1996-07-18, damage not reported, 1 direct death, 6 direct injuries         |                                                                            | Event records naming jurisdictions in the plan: Gladwin city (1 record), Gladwin township (1 record).                                                                                                                             | Storm Events lists lightning with damage or casualties; physical measure in event narratives only (local data needed).                                                                                               |
| High Wind and Strong Wind (outside NRI's Strong Wind definition) | wind speed (kt and mph)                                                            | 6 records, 1998 to 2024 (6 zone-level)  | 35 kt (40 mph) to 54 kt (62 mph) (median 46.5 kt (54 mph)); 6 with a recorded value | 54 kt (62 mph) estimated gust, High Wind, 2005-11-13; NWS zone MIZ041                 |                                                                            | Countywide (zone-level records).                                                                                                                                                                                                  |                                                                                                                                                                                                                      |
| Thunderstorm Wind                                                | wind speed (kt and mph)                                                            | 80 records, 1958 to 2025                | 44 kt (51 mph) to 78 kt (90 mph) (median 50 kt (58 mph)); 57 with a recorded value  | 78 kt (90 mph), measurement type not recorded, Thunderstorm Wind, 1998-05-31          | Thunderstorm Wind, 2008-06-08, \$80,000 property; \$0 crops (2008 dollars) | Event records naming jurisdictions in the plan: Gladwin city (26 records), Gladwin township (26 records), Beaverton city (10 records), Beaverton township (10 records), Buckeye township (2 records), Butman township (1 record). |                                                                                                                                                                                                                      |
| Tornado                                                          | Enhanced Fujita (Fujita before Feb 2007)                                           | 10 records, 1955 to 2024                | F/EF0 to F/EF3 (median F/EF1); 10 with a recorded value                             | F3 tornado, 1976-03-30, 100 yd wide, \$30 property; crops not recorded (1976 dollars) | Tornado, 2024-06-22, \$100,000 property; \$0 crops (2024 dollars)          | Event records naming jurisdictions in the plan: Gladwin city (2 records), Gladwin township (2 records), Butman 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<br><i>count and years</i>        | Observed range | Worst recorded event                                                                   | Most damaging<br>(when different) | How it applies to jurisdictions  | Note                                                        |
|-----------------------------------------------------------------------------|-------------------------------------|------------------------------------------|----------------|----------------------------------------------------------------------------------------|-----------------------------------|----------------------------------|-------------------------------------------------------------|
| Wildfire                                                                    | acres burned<br>(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) | 45 records, 1997 to 2025 (45 zone-level) |                | Winter Storm, 2024-01-12, \$15,000 property; \$0 crops (2024 dollars); NWS zone MIZ041 |                                   | 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: 12 declarations covering 8 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<br><i>federal share obligated, nominal dollars</i> | Notes                    |
|------------|----------------|-------------|----------------|--------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------|
| 2020-07-09 | 2020-05-16     | DR-4547-MI  | Major disaster | Severe Storms and Flooding                 | Dam/Levee Break (not an NRI hazard); also designated: Inland Flooding | \$2,495,477.18                                                              |                          |
| 2020-05-21 | 2020-05-16     | EM-3525-MI  | Emergency      | Severe Storms and Flooding                 | Dam/Levee Break (not an NRI hazard); also designated: Inland Flooding | no Public Assistance recorded                                               | same incident as DR-4547 |
| 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 |
| 2017-08-02 | 2017-06-22     | DR-4326-MI  | Major disaster | Severe Storms and Flooding                 | Inland Flooding                                                       | PA not declared for this county                                             |                          |
| 2005-09-07 | 2005-08-29     | EM-3225-MI  | Emergency      | Hurricane Katrina Evacuation               | Hurricane: evacuation support, not a local hazard event; not counted  | no Public Assistance recorded                                               |                          |
| 2004-06-30 | 2004-05-20     | DR-1527-MI  | Major disaster | Severe Storms, Tornadoes, and Flooding     | Inland Flooding; Tornado                                              | PA not declared for this county                                             |                          |
| 2001-01-10 | 2000-12-11     | EM-3160-MI  | Emergency      | Snow                                       | Winter Weather                                                        | \$5,189.25                                                                  |                          |
| 1986-09-18 | 1986-09-10     | DR-774-MI   | Major disaster | Severe Storms & Flooding                   | Inland Flooding                                                       | no Public Assistance recorded                                               |                          |
| 1978-01-27 | 1978-01-27     | EM-3057-MI  | Emergency      | Blizzards & Snowstorms                     | Winter Weather                                                        | no Public Assistance recorded                                               |                          |
| 1977-03-02 | 1977-03-02     | EM-3035-MI  | Emergency      | Drought                                    | Drought                                                               | no Public Assistance recorded                                               |                          |
| 1976-03-19 | 1976-03-19     | DR-495-MI   | Major disaster | Severe Storms, Tornadoes, Icing & Flooding | Inland Flooding; Tornado                                              | no Public Assistance recorded                                               |                          |

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

### Statewide declarations

Source: 2

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

FEMA recorded these with designated area Statewide and no county, so they are listed on every county page in the state and not counted with county rows. Local data needed: whether each one affected this county.

## Previous occurrences by hazard, with explicit no-event rows

Sources: 2, 6, 7

| <b>Hazard</b>      | <b>Storm Events records,<br/>all years on file</b><br><i>(years in the Period column)</i> | <b>Since plan<br/>approval</b><br><i>records</i> | <b>In the 12 months before<br/>plan approval</b><br><i>records</i> | <b>Last 5<br/>years</b><br><i>records</i> | <b>Declared incidents,<br/>all years</b><br><i>separate disasters</i> | <b>Declared since<br/>approval</b><br><i>separate disasters</i> | <b>Period</b>         | <b>Statement</b>                                                                              |
|--------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------|
| Cold Wave          | 4                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                                               |
| Drought            | 0                                                                                         | 0                                                | 0                                                                  | 0                                         | 1                                                                     | 0                                                               | 1996 to<br>2026-06-30 | No Storm Events records of this type; 1 federal<br>declared incident (see declarations table) |
| Earthquake         | 0                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               |                       | Storm Events does not record earthquakes; the<br>USGS earthquake catalog is the source.       |
| Hail               | 41                                                                                        | 1                                                | 1                                                                  | 3                                         | 0                                                                     | 0                                                               | 1955 to<br>2026-06-30 |                                                                                               |
| Heat Wave          | 2                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                                               |
| Hurricane          | 0                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 | No recorded events, 1996 to 2026-06-30, NOAA<br>NCEI Storm Events                             |
| Ice Storm          | 4                                                                                         | 0                                                | 0                                                                  | 1                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                                               |
| Inland<br>Flooding | 14                                                                                        | 0                                                | 0                                                                  | 0                                         | 5                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                                               |
| Landslide          | 0                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 | No recorded events, 1996 to 2026-06-30, NOAA<br>NCEI Storm Events                             |
| Lightning          | 1                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                                               |
| Strong Wind        | 86                                                                                        | 2                                                | 6                                                                  | 13                                        | 0                                                                     | 0                                                               | 1955 to<br>2026-06-30 | Includes 3 High Wind and 3 Strong Wind records.                                               |
| Tornado            | 10                                                                                        | 0                                                | 1                                                                  | 1                                         | 2                                                                     | 0                                                               | 1950 to<br>2026-06-30 |                                                                                               |
| Wildfire           | 0                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 | No recorded events, 1996 to 2026-06-30, NOAA<br>NCEI Storm Events                             |
| Winter<br>Weather  | 45                                                                                        | 1                                                | 1                                                                  | 2                                         | 2                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                                               |

## Notable Storm Events records

Sources: 1, 6, 7

| Date       | Event type                  | Magnitude or extent                           | Damage<br><i>nominal dollars</i>                                            | Deaths,<br>injuries<br><i>direct only</i> | Location                              | Flags                                                      | Why listed                                                                                       |
|------------|-----------------------------|-----------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 2024-06-22 | Tornado                     | EF1, 10.3 mi within this county, 200 yd wide  | \$100,000 property; \$0 crops (2024 dollars)                                | 0, 0                                      | BUTMAN to GLADWIN FORTIER ARPT        | in the 12 months before plan approval; within last 5 years | B1-c most damaging: Tornado                                                                      |
| 2024-01-12 | Winter Storm                |                                               | \$15,000 property; \$0 crops, reported for the zone (2024 dollars)          | 0, 0                                      | NWS zone MIZ041 (GLADWIN), zone-level | in the 12 months before plan approval; within last 5 years | B1-c worst recorded: Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet |
| 2020-05-18 | Flood                       |                                               | \$11,000,000 property; \$0 crops (2020 dollars)                             | 0, 0                                      | GLADWIN FORTIER ARPT to SKEELS        |                                                            | B1-c worst recorded: Flash Flood, Flood, Lakeshore Flood                                         |
| 2015-02-14 | Extreme Cold/<br>Wind Chill |                                               | \$0 property; \$0 crops, reported for the zone (2015 dollars)               | 0, 0                                      | NWS zone MIZ041 (GLADWIN), zone-level |                                                            | B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill                                    |
| 2013-04-11 | Ice Storm                   |                                               | \$60,000 property; \$0 crops, reported for the zone (2013 dollars)          | 0, 0                                      | NWS zone MIZ041 (GLADWIN), zone-level |                                                            | B1-c worst recorded: Ice Storm                                                                   |
| 2008-06-08 | Thunderstorm<br>Wind        | 55 kt (63 mph) estimated gust                 | \$80,000 property; \$0 crops (2008 dollars)                                 | 0, 0                                      | HIGHWOOD                              |                                                            | B1-c most damaging: Thunderstorm Wind                                                            |
| 2005-11-13 | High Wind                   | 54 kt (62 mph) estimated gust                 | \$20,000 property; crops not reported, reported for the zone (2005 dollars) | 0, 0                                      | NWS zone MIZ041 (GLADWIN), zone-level |                                                            | B1-c worst recorded: High Wind and Strong Wind                                                   |
| 2001-08-01 | Heat                        |                                               | damage not reported                                                         | 0, 0                                      | NWS zone MIZ041 (GLADWIN), zone-level |                                                            | B1-c worst recorded: Excessive Heat, Heat                                                        |
| 1998-09-26 | Hail                        | 2.5 in                                        | damage not reported                                                         | 0, 0                                      | GLADWIN                               |                                                            | B1-c worst recorded: Hail                                                                        |
| 1998-05-31 | Thunderstorm<br>Wind        | 78 kt (90 mph), measurement type not recorded | damage not reported                                                         | 0, 0                                      | GLADWIN                               |                                                            | B1-c worst recorded: Thunderstorm Wind                                                           |
| 1996-07-18 | Lightning                   |                                               | damage not reported                                                         | 1, 6                                      | GLADWIN                               |                                                            | deaths or injuries recorded                                                                      |
| 1976-03-30 | Tornado                     | F3, 100 yd wide                               | \$30 property; crops not recorded (1976 dollars)                            | 0, 0                                      | location not recorded                 |                                                            | B1-c worst recorded: Tornado                                                                     |

The full list is in the Excel file, sheet "B1-d Storm Events history" (207 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<br>annualized<br>frequency<br>(modeled)<br><i>unit per row</i> | Unit                                   | In plain terms                                                                                         | Descriptor                                        | Descriptor basis                                        | NRI events or days in its<br>record period (hail, wind and<br>tornado are area-weighted,<br>so can be fractional) | NRI period                                       | Location   | Note                                                                                                                             |
|--------------------|---------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------|
| Cold Wave          | 2.16                                                                | event-days<br>per year                 | about 2.16 days per<br>year                                                                            | Likely (from<br>Storm Events: 4<br>of 30 years)   | event-days in 4 of<br>30 years, 1996 to<br>2025 (13.3%) | 41                                                                                                                | 2005-11-12 to<br>2024-11-12 (19<br>years)        | countywide |                                                                                                                                  |
| Drought            | 0                                                                   | event-days<br>per year                 | none modeled                                                                                           |                                                   | event-days in 0 of<br>30 years, 1996 to<br>2025 (0%)    | 0                                                                                                                 | 2000 to 2025<br>(25.25 years; D3<br>and D4 only) | countywide | No Storm Events drought<br>record, 1996 to 2025                                                                                  |
| Earthquake         | 0.000461                                                            | annual<br>probability at<br>a location | chance a given location<br>in the county has at<br>least minor-damage<br>shaking in a year:<br>0.0461% |                                                   |                                                         | not shown                                                                                                         | modeled                                          | see B1-f   | No descriptor (Storm Events<br>does not record earthquakes).                                                                     |
| Hail               | 1.7                                                                 | events per<br>year                     | about 1.7 per year                                                                                     | Highly likely                                     | FEMA annualized<br>frequency<br>(modeled)               | 64.8 (modeled)                                                                                                    | 1986 to 2023 (38<br>years)                       | countywide |                                                                                                                                  |
| Heat Wave          | 1                                                                   | event-day per<br>year                  | about 1 day per year                                                                                   | Possible (from<br>Storm Events: 2<br>of 30 years) | event-days in 2 of<br>30 years, 1996 to<br>2025 (6.67%) | 17                                                                                                                | 2005-11-12 to<br>2024-11-12 (19<br>years)        | countywide |                                                                                                                                  |
| Hurricane          | 0.0095                                                              | events per<br>year                     | about 1 in 105 years                                                                                   | Unlikely                                          | FEMA annualized<br>frequency<br>(modeled)               | 2                                                                                                                 | 1851 to 2024<br>(Atlantic)                       | see B1-f   | NRI counts hurricane and<br>tropical storm tracks passing<br>within storm-force wind range;<br>federal declarations are in B1-d. |
| Ice Storm          | 0.517                                                               | event-days<br>per year                 | about 0.517 days per<br>year                                                                           | Likely (from<br>Storm Events: 4<br>of 30 years)   | event-days in 4 of<br>30 years, 1996 to<br>2025 (13.3%) | 35                                                                                                                | 1946-12-31 to<br>2014-02-12 (67<br>years)        | countywide |                                                                                                                                  |
| Inland<br>Flooding | 0.393                                                               | event-days<br>per year                 | about 0.393 days per<br>year                                                                           | Likely (from<br>Storm Events: 7<br>of 30 years)   | event-days in 7 of<br>30 years, 1996 to<br>2025 (23.3%) | 11                                                                                                                | 1996 to 2023 (28<br>years)                       | see B1-f   |                                                                                                                                  |
| Landslide          | 0.075                                                               | events per<br>year<br>(modeled)        | about 1 in 13 years                                                                                    | Possible                                          | FEMA annualized<br>frequency<br>(modeled)               | not shown                                                                                                         | modeled                                          | see B1-f   |                                                                                                                                  |
| Lightning          | 28.7                                                                | days per year<br>with a strike         | about 28.7 days per<br>year                                                                            | Highly likely                                     | FEMA annualized<br>frequency<br>(modeled)               | not shown                                                                                                         | 1995 to 2023 (29<br>years; CONUS)                | countywide |                                                                                                                                  |
| Strong<br>Wind     | 2.25                                                                | events per<br>year                     | about 2.25 per year                                                                                    | Highly likely                                     | FEMA annualized<br>frequency<br>(modeled)               | 86                                                                                                                | 1986 to 2023 (38<br>years)                       | countywide |                                                                                                                                  |

| Hazard            | FEMA<br>annualized<br>frequency<br>(modeled)<br><i>unit per row</i> | Unit                                   | In plain terms                                                       | Descriptor                                       | Descriptor basis                                                  | NRI events or days in its<br>record period (hail, wind and<br>tornado are area-weighted,<br>so can be fractional) | NRI period                                      | Location   | Note                                                  |
|-------------------|---------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------|-------------------------------------------------------|
| Tornado           | 0.146                                                               | events per<br>year                     | about 1 in 7 years                                                   | Likely                                           | FEMA annualized<br>frequency<br>(modeled)                         | not shown                                                                                                         | 1950 to 2023<br>(EF2+); 1986 to<br>2023 (EF0-1) | see B1-f   |                                                       |
| Wildfire          | 0.000245                                                            | annual<br>probability at<br>a location | chance a given location<br>in the county burns in a<br>year: 0.0245% |                                                  | Storm Events<br>records in 0 of 30<br>years, 1996 to<br>2025 (0%) | not shown                                                                                                         | modeled                                         | see B1-f   | No descriptor: no Storm Events<br>record 1996 to 2025 |
| Winter<br>Weather | 12.1                                                                | event-days<br>per year                 | about 12.1 days per<br>year                                          | Likely (from<br>Storm Events:<br>22 of 30 years) | event-days in 22 of<br>30 years, 1996 to<br>2025 (73.3%)          | 229                                                                                                               | 2005-11-12 to<br>2024-11-12 (19<br>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<br><i>county-coded records</i> | Years in period | Events per year<br><i>events / years</i> |
|------------------------------------------------|---------------------------|--------------|---------------------------------------|-----------------|------------------------------------------|
| Hail                                           | 1.00-1.99 in              | 1996 to 2025 | 11                                    | 30              | 0.367                                    |
| Hail                                           | 2.00 in+                  | 1996 to 2025 | 4                                     | 30              | 0.133                                    |
| Thunderstorm Wind (counted as NRI Strong Wind) | 50-64 kt                  | 1996 to 2025 | 52                                    | 30              | 1.73                                     |
| Thunderstorm Wind (counted as NRI Strong Wind) | 65 kt+                    | 1996 to 2025 | 2                                     | 30              | 0.0667                                   |
| Thunderstorm Wind (counted as NRI Strong Wind) | unmeasured or below 50 kt | 1996 to 2025 | 1                                     | 30              | 0.0333                                   |
| Tornado                                        | EF0-1                     | 1996 to 2025 | 3                                     | 30              | 0.1                                      |
| Tornado                                        | EF2-3                     | 1996 to 2025 | 0                                     | 30              | 0                                        |
| Tornado                                        | EF4-5                     | 1996 to 2025 | 0                                     | 30              | 0                                        |
| Tornado                                        | unrated (EFU)             | 1996 to 2025 | 0                                     | 30              | 0                                        |

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

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

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

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

Range of census tract risk within the county

Source: 5

| Hazard          | Tracts<br><i>rated of all</i> | NRI risk score, 0 to 100 |        |      | Tracts by rating                         |
|-----------------|-------------------------------|--------------------------|--------|------|------------------------------------------|
|                 |                               | Min                      | Median | Max  |                                          |
| Cold Wave       | 10 of 10                      | 63.8                     | 75.7   | 89.7 | Relatively High 5, Relatively Moderate 5 |
| Drought         | 0 of 10                       |                          |        |      | No Rating 10                             |
| Earthquake      | 10 of 10                      | 7.6                      | 11.1   | 26.0 | Very Low 10                              |
| Hail            | 10 of 10                      | 68.1                     | 73.7   | 82.5 | Relatively Moderate 9, Relatively Low 1  |
| Heat Wave       | 10 of 10                      | 3.4                      | 5.0    | 10.8 | Very Low 10                              |
| Hurricane       | 10 of 10                      | 28.8                     | 31.1   | 35.7 | Very Low 10                              |
| Ice Storm       | 10 of 10                      | 13.7                     | 43.3   | 61.4 | Relatively Low 7, Very Low 3             |
| Inland Flooding | 10 of 10                      | 27.9                     | 58.2   | 74.3 | Relatively Moderate 8, Relatively Low 2  |
| Landslide       | 10 of 10                      | 61.5                     | 77.8   | 83.7 | Relatively Low 2, Very Low 8             |
| Lightning       | 10 of 10                      | 65.5                     | 81.2   | 95.8 | Relatively High 5, Relatively Moderate 5 |
| Strong Wind     | 10 of 10                      | 74.7                     | 87.8   | 94.9 | Relatively High 7, Relatively Moderate 3 |

| Hazard         | Tracts<br><i>rated of all</i> | NRI risk score, 0 to 100 |        |      | Tracts by rating                                           |
|----------------|-------------------------------|--------------------------|--------|------|------------------------------------------------------------|
|                |                               | Min                      | Median | Max  |                                                            |
| Tornado        | 10 of 10                      | 41.1                     | 58.8   | 74.9 | Relatively High 1, Relatively Moderate 6, Relatively Low 3 |
| Wildfire       | 10 of 10                      | 49.7                     | 74.0   | 77.2 | Relatively Low 8, Very Low 2                               |
| Winter Weather | 10 of 10                      | 83.2                     | 91.0   | 97.1 | Very High 2, Relatively High 8                             |

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<br>loss<br><i>FMA RL and<br/>SRL (44 CFR<br/>77.2); repeat-<br/>flood, any<br/>definition</i> | Public Assistance to<br>this jurisdiction<br><i>FEMA records matched<br/>by applicant name;<br/>federal share obligated,<br/>nominal dollars</i> | Event records<br>naming this<br>place<br><i>all years; since its<br/>plan</i> | Notes                                                 |
|--------------------|----------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------|
| Gladwin County     | County   | Approved, expires<br>2029-12-29                                                   |                                                                                                          | \$3,782.90                                                                                                                                       | 0 total; 0 since<br>its plan                                                  | No NFIP community ID on this jurisdiction's plan row. |
| Beaverton city     | City     | Approved, expires<br>2029-12-29                                                   | FMA RL 0,<br>SRL 0; any 0                                                                                | \$357,651.56                                                                                                                                     | 13 total; 0 since<br>its plan                                                 |                                                       |
| Gladwin city       | City     | Approved, expires<br>2029-12-29                                                   | FMA RL 0,<br>SRL 0; any 0                                                                                | \$319,550.48                                                                                                                                     | 50 total; 0 since<br>its plan                                                 |                                                       |
| Beaverton township | Township | Approved, expires<br>2029-12-29                                                   | FMA RL 0,<br>SRL 0; any 0                                                                                | no Public Assistance<br>recorded                                                                                                                 | 13 total; 0 since<br>its plan                                                 |                                                       |
| Billings township  | Township | Plan 110227 approved<br>2024-12-30, pending<br>adoption here; not yet<br>eligible | FMA RL 0,<br>SRL 0; any 0                                                                                | \$55,340.19                                                                                                                                      | 0 total; no<br>approved plan                                                  |                                                       |
| Buckeye township   | Township | Plan 110227 approved<br>2024-12-30, pending<br>adoption here; not yet<br>eligible | FMA RL 0,<br>SRL 0; any 0                                                                                | no Public Assistance<br>recorded                                                                                                                 | 4 total; no<br>approved plan                                                  |                                                       |
| Butman township    | Township | Approved, expires<br>2029-12-29                                                   | FMA RL 0,<br>SRL 0; any 0                                                                                | no Public Assistance<br>recorded                                                                                                                 | 3 total; 1 since<br>its plan                                                  |                                                       |
| Gladwin township   | Township | Plan 110227 approved<br>2024-12-30, pending<br>adoption here; not yet<br>eligible | FMA RL 0,<br>SRL 0; any 0                                                                                | no Public Assistance<br>recorded                                                                                                                 | 50 total; no<br>approved plan                                                 |                                                       |
| Hay township       | Township | Approved, expires<br>2029-12-29                                                   | FMA RL 0,<br>SRL 0; any 4                                                                                | no Public Assistance<br>recorded                                                                                                                 | 0 total; 0 since<br>its plan                                                  |                                                       |
| Sage township      | Township | Approved, expires<br>2029-12-29                                                   | FMA RL 0,<br>SRL 0; any 0                                                                                | no Public Assistance<br>recorded                                                                                                                 | 0 total; 0 since<br>its plan                                                  |                                                       |

| Jurisdiction     | Type     | Plan status                                                              | Repetitive loss                                                   | Public Assistance to this jurisdiction                                                  | Event records naming this place  | Notes |
|------------------|----------|--------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------|-------|
|                  |          |                                                                          | <i>FMA RL and SRL (44 CFR 77.2); repeat-flood, any definition</i> | <i>FEMA records matched by applicant name; federal share obligated, nominal dollars</i> | <i>all years; since its plan</i> |       |
| Secord township  | Township | Plan 110227 approved 2024-12-30, pending adoption here; not yet eligible | FMA RL 0, SRL 0; any 0                                            | no Public Assistance recorded                                                           | 0 total; no approved plan        |       |
| Sherman township | Township | Plan 110227 approved 2024-12-30, pending adoption here; not yet eligible | FMA RL 0, SRL 0; any 0                                            | no Public Assistance recorded                                                           | 0 total; no approved plan        |       |
| Tobacco township | Township | Approved, expires 2029-12-29                                             | FMA RL 0, SRL 0; any 0                                            | \$40,852.50                                                                             | 0 total; 0 since its plan        |       |

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

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

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

Local data needed

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

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

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

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

| Hazard     | Building exposure      | Agriculture exposure   | Population exposed | EAL buildings                   | EAL agriculture                 | Cost of expected deaths and injuries                     | EAL as % of exposure                      | Storm Events damage since 2024-12-30                              | Zone-level damage since plan                      | Public Assistance since plan     | Note                             |
|------------|------------------------|------------------------|--------------------|---------------------------------|---------------------------------|----------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------|----------------------------------|----------------------------------|
|            | <i>modeled dollars</i> | <i>modeled dollars</i> | <i>people</i>      | <i>modeled dollars per year</i> | <i>modeled dollars per year</i> | <i>FEMA's dollar value per year, not property damage</i> | <i>buildings; agriculture where noted</i> | <i>county-coded records, property plus crops, nominal dollars</i> | <i>property plus crops, reported for the zone</i> | <i>nominal dollars; see note</i> |                                  |
| Cold Wave  | \$7,359,534,166        | \$20,285,053           | 25,371             | \$273                           | \$5,972                         | \$1,383,572                                              | under 0.0001%                             |                                                                   |                                                   |                                  |                                  |
| Drought    | n/a                    | \$0                    | n/a                | n/a                             | \$0                             | n/a                                                      |                                           |                                                                   |                                                   |                                  | agriculture exposure is 0 in NRI |
| Earthquake | \$11,905,787,432       | n/a                    | 25,386             | \$19,985                        | n/a                             | \$6,206                                                  | 0.000168%                                 |                                                                   |                                                   |                                  |                                  |
| Hail       | \$7,359,536,530        | \$20,285,053           | 25,371             | \$216,008                       | \$2,346                         | \$13,536                                                 | 0.00294%                                  |                                                                   |                                                   |                                  |                                  |
| Heat Wave  | \$7,359,534,166        | \$20,285,053           | 25,371             | \$569                           | under \$1                       | \$38,599                                                 | under 0.0001%                             |                                                                   |                                                   |                                  |                                  |

| <b>Hazard</b>   | <b>Building exposure</b><br><i>modeled dollars</i> | <b>Agriculture exposure</b><br><i>modeled dollars</i> | <b>Population exposed</b><br><i>people</i> | <b>EAL buildings</b><br><i>modeled dollars per year</i> | <b>EAL agriculture</b><br><i>modeled dollars per year</i> | <b>Cost of expected deaths and injuries</b><br><i>FEMA's dollar value per year; not property damage</i> | <b>EAL as % of exposure</b><br><i>buildings; agriculture where noted</i> | <b>Storm Events damage since 2024-12-30</b><br><i>county-coded records, property plus crops, nominal dollars</i> | <b>Zone-level damage since plan</b><br><i>property plus crops, reported for the zone</i> | <b>Public Assistance since plan</b><br><i>nominal dollars; see note</i> | <b>Note</b>                                                                                                                                                               |
|-----------------|----------------------------------------------------|-------------------------------------------------------|--------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hurricane       | \$7,324,793,519                                    | \$20,031,880                                          | 25,303                                     | \$5,196                                                 | \$327                                                     | \$4                                                                                                     | under 0.0001%                                                            |                                                                                                                  |                                                                                          |                                                                         |                                                                                                                                                                           |
| Ice Storm       | \$7,359,534,166                                    | n/a                                                   | 25,371                                     | \$30,540                                                | n/a                                                       | \$274                                                                                                   | 0.000415%                                                                |                                                                                                                  |                                                                                          |                                                                         |                                                                                                                                                                           |
| Inland Flooding | \$7,286,105,255                                    | \$20,825                                              | 301                                        | \$5,458,290                                             | \$113                                                     | \$258                                                                                                   | n/a (see note)                                                           |                                                                                                                  |                                                                                          |                                                                         | NRI counts the full building value of any census block with some flood loss; this is not the value of buildings in the floodplain. Use local FIRM overlays for B2-a/B2-b. |
| Landslide       | \$52,061,256                                       | n/a                                                   | 151                                        | \$62                                                    | n/a                                                       | \$455                                                                                                   | 0.000118%                                                                |                                                                                                                  |                                                                                          |                                                                         |                                                                                                                                                                           |
| Lightning       | \$7,359,536,530                                    | n/a                                                   | 25,371                                     | \$4,524                                                 | n/a                                                       | \$307,535                                                                                               | under 0.0001%                                                            |                                                                                                                  |                                                                                          |                                                                         |                                                                                                                                                                           |
| Strong Wind     | \$7,359,536,530                                    | \$20,285,053                                          | 25,371                                     | \$440,256                                               | \$2,341                                                   | \$237,161                                                                                               | 0.00598%                                                                 | \$12,000                                                                                                         |                                                                                          |                                                                         |                                                                                                                                                                           |
| Tornado         | \$7,359,536,530                                    | \$20,285,053                                          | 25,371                                     | \$510,547                                               | \$305                                                     | \$372,480                                                                                               | 0.00694%                                                                 |                                                                                                                  |                                                                                          |                                                                         |                                                                                                                                                                           |
| Wildfire        | \$791,737,364                                      | \$3,556,449                                           | 4,822                                      | \$15,684                                                | \$7                                                       | \$1,922                                                                                                 | 0.00198%                                                                 |                                                                                                                  |                                                                                          |                                                                         |                                                                                                                                                                           |
| Winter Weather  | \$7,359,534,166                                    | \$20,285,053                                          | 25,371                                     | \$4,316                                                 | \$81                                                      | \$165,509                                                                                               | under 0.0001%                                                            |                                                                                                                  |                                                                                          |                                                                         |                                                                                                                                                                           |

Totals since 2024-12-30 (Storm Events through 2026-06-30): 3 county-coded records, 1 with a damage value recorded (including \$0), \$12,000; 1 zone-level records, 0 with a damage value recorded (including \$0), \$0 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                                                                                                                                                                    | 25,371              |
| Building value (total, not at risk)                                                                                                                                           | \$7,359,536,530     |
| Agriculture value (total, not at risk)                                                                                                                                        | \$20,285,053        |
| NRI risk rating (all hazards)                                                                                                                                                 | Very Low            |
| Expected annual loss, buildings and agriculture, all hazards                                                                                                                  | \$6,717,743         |
| 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) | \$2,527,511         |
| Social vulnerability rating                                                                                                                                                   | Relatively High     |
| Community resilience rating                                                                                                                                                   | Relatively Moderate |
| 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    | 4          | 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<br><i>properties</i> | SRL, FMA<br><i>properties</i> | RL, NFIP<br><i>properties</i> | SRL, NFIP<br><i>properties</i> | Any category<br><i>properties</i> | Mitigated<br><i>properties</i> | Currently insured<br><i>properties</i> |
|-------------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------------|-----------------------------------|--------------------------------|----------------------------------------|
| County total                        | 0                            | 0                             | 4                             | 0                              | 4                                 | 0                              | 1                                      |
| of which: Hay township              | 0                            | 0                             | 4                             | 0                              | 4                                 | 0                              | 1                                      |
| Statewide, no county in FEMA's file | 0                            | 0                             | 4                             | 0                              | 4                                 | 0                              | 0                                      |

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

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

Sources: 1, 4

| <b>Jurisdiction</b> | <b>NFIP community ID</b> | <b>RL, FMA<br/><i>properties</i></b> | <b>SRL, FMA<br/><i>properties</i></b> | <b>RL, NFIP<br/><i>properties</i></b> | <b>SRL, NFIP<br/><i>properties</i></b> | <b>Any category<br/><i>properties</i></b> | <b>Mitigated<br/><i>properties</i></b> | <b>Currently insured<br/><i>properties</i></b> |
|---------------------|--------------------------|--------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|-------------------------------------------|----------------------------------------|------------------------------------------------|
| Beaverton city      | 261339                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Gladwin city        | 261347                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Beaverton township  | 261340                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Billings township   | 261342                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Buckeye township    | 261344                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Butman township     | 261024                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Gladwin township    | 261348                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Hay township        | 260984                   | 0                                    | 0                                     | 4                                     | 0                                      | 4                                         | 0                                      | 1                                              |
| Sage township       | 261350                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Secord township     | 260985                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Sherman township    | 261266                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| Tobacco township    | 261060                   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |

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

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

**County repeat-flood properties by occupancy group**

Sources: 1, 4

| <b>Occupancy group</b>    | <b>RL, FMA<br/><i>properties</i></b> | <b>SRL, FMA<br/><i>properties</i></b> | <b>RL, NFIP<br/><i>properties</i></b> | <b>SRL, NFIP<br/><i>properties</i></b> | <b>Any category<br/><i>properties</i></b> | <b>Mitigated<br/><i>properties</i></b> | <b>Currently insured<br/><i>properties</i></b> |
|---------------------------|--------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|-------------------------------------------|----------------------------------------|------------------------------------------------|
| single-family residential | 0                                    | 0                                     | 4                                     | 0                                      | 4                                         | 0                                      | 1                                              |
| 2 to 4 unit residential   | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| other residential         | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| non-residential           | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |
| not reported              | 0                                    | 0                                     | 0                                     | 0                                      | 0                                         | 0                                      | 0                                              |

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

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

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

In this county 0 properties are FMA repetitive loss but not NFIP repetitive loss, and 4 properties are NFIP repetitive loss but not FMA repetitive loss.

Exact counts; no count suppression.

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## 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](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](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_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/codes2020/national_place_by_county2020.txt), [https://www2.census.gov/geo/docs/reference/ct\\_change/ct\\_cou\\_to\\_cousub\\_crosswalk.xlsx](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.

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## 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).

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## Reuse, citation and corrections

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Cite this: Hazard Plain (2026). Gladwin County, MI: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-30; County FIPS 26051). Automated baseline. <https://hazardplain.org/mi/26051/> 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](mailto:contact@hazardplain.org)

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