

# Musselshell County, MT

Risk-assessment baseline packet

County FIPS: 30065    Release: 2026-10    Data as of: 2026-09-30    Storm Events data through: 2026-06-30

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

## Summary

Plan status as of 2026-09-30: Approved, expires 2030-03-11. Plan: Eastern Montana Regional Hazard Mitigation Plan 2025 (FEMA plan 110310), approved 2025-03-12.

Since the plan was approved on 2025-03-12: no new federal declaration.

NOAA Storm Events records since that date: 10 records (data through 2026-06-30).

Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Inland Flooding (\$1,407,507 a year), Wildfire (\$1,403,019) and Cold Wave (\$1,316,080).

Repetitive-loss flood properties now: FMA RL 1, SRL 0 (44 CFR 77.2); any definition: 3.

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; 30065 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.

## CONTENTS

1. Summary and terms used, page 1
2. Plan clock, page 2
3. What changed since your last plan (approved 2025-03-12), page 2
4. Supports FEMA checklist item B1-a: hazard identification, page 3
5. Supports FEMA checklist item B1-b: hazard location, page 4
6. Supports FEMA checklist item B1-c: hazard extent, page 5
7. Supports FEMA checklist item B1-d: previous occurrences, page 7
8. Supports FEMA checklist item B1-e: probability of future events, page 11
9. Supports FEMA checklist item B1-f: hazards that vary across jurisdictions, page 13
10. Supports FEMA checklist items B2-a and B2-b: vulnerability and potential impacts, page 15
11. Supports FEMA checklist item B2-a: vulnerability (county context), page 16
12. Supports FEMA checklist item B2-c: repetitive loss properties, page 17
13. Sources, what the plan adds, disclaimer and citation, page 18

Plan clock

|                                                         |                                                  |                                      |                                                                         |
|---------------------------------------------------------|--------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------|
| Status:                                                 | Approved, expires 2030-03-11                     | Plan:                                | Eastern Montana Regional Hazard Mitigation Plan 2025 (FEMA plan 110310) |
| Approved:                                               | 2025-03-12                                       | Days to expiry:                      | 1,258                                                                   |
| What changed since your last plan (approved 2025-03-12) |                                                  |                                      |                                                                         |
| New federal declarations:                               | none                                             | Storm Events records since approval: | 10 records (data through 2026-06-30)                                    |
| Repetitive loss now:                                    | FMA RL 1, SRL 0 (44 CFR 77.2); any definition: 3 | Repeat-flood change:                 | this release sets the baseline count.                                   |
| Sources: 1, 2, 4, 6 (numbered list at the end)          |                                                  |                                      |                                                                         |

Plan status for every jurisdiction listed in this county

Source: 1

| Jurisdiction       | Type   | Status                       | Plan                                                                    | Approved   | Expires    | Days to expiry<br><small>negative = days since expiry</small> | Notes                                 |
|--------------------|--------|------------------------------|-------------------------------------------------------------------------|------------|------------|---------------------------------------------------------------|---------------------------------------|
| Musselshell County | County | Approved, expires 2030-03-11 | Eastern Montana Regional Hazard Mitigation Plan 2025 (FEMA plan 110310) | 2025-03-12 | 2030-03-11 | 1,258                                                         | this jurisdiction approved 2025-05-16 |
| Melstone town      | Town   | Approved, expires 2030-03-11 | Eastern Montana Regional Hazard Mitigation Plan 2025 (FEMA plan 110310) | 2025-03-12 | 2030-03-11 | 1,258                                                         | this jurisdiction approved 2026-01-12 |
| Roundup city       | City   | Approved, expires 2030-03-11 | Eastern Montana Regional Hazard Mitigation Plan 2025 (FEMA plan 110310) | 2025-03-12 | 2030-03-11 | 1,258                                                         | this jurisdiction approved 2025-06-27 |

Plan 110310 covers 67 other participants, named in the Excel file.

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

## Supports FEMA checklist item B1-a: hazard identification

Hazards NRI does not cover (local data needed)

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

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

Sources: 5, 6

| Rank by EAL | Hazard          | NRI risk rating     | EAL rating          | EAL buildings<br><i>modeled dollars per year</i> | EAL agriculture<br><i>modeled dollars per year</i> | Cost of expected deaths and injuries<br><i>FEMA's dollar value per year, not property damage</i> | EAL total (see note)<br><i>modeled dollars per year</i> | Storm Events records, 1996 to 2026-06-30<br><i>count</i> | Why this hazard can be left out<br><i>NRI Not Applicable, no declaration and no Storm Events record since 1996</i> | Storm Events coverage note                                                                               |
|-------------|-----------------|---------------------|---------------------|--------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 1           | Inland Flooding | Very Low            | Very Low            | \$1,327,091                                      | \$65,072                                           | \$15,343                                                                                         | \$1,407,507                                             | 35                                                       |                                                                                                                    |                                                                                                          |
| 2           | Wildfire        | Relatively Moderate | Relatively Moderate | \$1,358,799                                      | \$329                                              | \$43,891                                                                                         | \$1,403,019                                             | 5                                                        |                                                                                                                    |                                                                                                          |
| 3           | Cold Wave       | Relatively Moderate | Relatively Moderate | \$3,307                                          | \$113,697                                          | \$1,199,075                                                                                      | \$1,316,080                                             | 2                                                        |                                                                                                                    |                                                                                                          |
| 4           | Lightning       | Relatively Moderate | Relatively Moderate | \$1,974                                          | n/a                                                | \$423,804                                                                                        | \$425,778                                               | 0                                                        |                                                                                                                    | No recorded events in Storm Events since 1996 (data through 2026-06-30).                                 |
| 5           | Hail            | Relatively Low      | Very Low            | \$77,179                                         | \$28,213                                           | \$6,954                                                                                          | \$112,346                                               | 218                                                      |                                                                                                                    |                                                                                                          |
| 6           | Winter Weather  | Relatively Moderate | Relatively Moderate | \$33,441                                         | \$52                                               | \$43,843                                                                                         | \$77,336                                                | 86                                                       |                                                                                                                    |                                                                                                          |
| 7           | Strong Wind     | Very Low            | Very Low            | \$16,195                                         | \$10,335                                           | \$25,346                                                                                         | \$51,875                                                | 114                                                      |                                                                                                                    | Includes 73 High Wind records (a NOAA non-thunderstorm wind type, outside NRI's Strong Wind definition). |
| 8           | Heat Wave       | Very Low            | Very Low            | \$16                                             | \$2,906                                            | \$33,194                                                                                         | \$36,115                                                | 0                                                        |                                                                                                                    | No recorded events in Storm Events since 1996 (data through 2026-06-30).                                 |
| 9           | Tornado         | Very Low            | Very Low            | \$28,756                                         | \$514                                              | \$4,702                                                                                          | \$33,972                                                | 3                                                        |                                                                                                                    |                                                                                                          |
| 10          | Earthquake      | Very Low            | Very Low            | \$20,375                                         | n/a                                                | \$2,422                                                                                          | \$22,797                                                |                                                          |                                                                                                                    | Storm Events does not record earthquakes.                                                                |
| 11          | Drought         | Very Low            | Very Low            | n/a                                              | \$8,899                                            | n/a                                                                                              | \$8,899                                                 | 1                                                        |                                                                                                                    |                                                                                                          |

| Rank by EAL | Hazard    | NRI risk rating | EAL rating     | EAL buildings modeled dollars per year | EAL agriculture modeled dollars per year | Cost of expected deaths and injuries FEMA's dollar value per year, not property damage | EAL total (see note) modeled dollars per year | Storm Events records, 1996 to 2026-06-30 count | Why this hazard can be left out NRI Not Applicable, no declaration and no Storm Events record since 1996                                                                                  | Storm Events coverage note                                               |
|-------------|-----------|-----------------|----------------|----------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 12          | Landslide | Relatively Low  | Very Low       | \$1,303                                | n/a                                      | \$1,298                                                                                | \$2,601                                       | 1                                              |                                                                                                                                                                                           |                                                                          |
| 13          | Ice Storm | Very Low        | Very Low       | \$1,738                                | n/a                                      | \$321                                                                                  | \$2,059                                       | 1                                              |                                                                                                                                                                                           |                                                                          |
|             | Hurricane | Not Applicable  | Not Applicable |                                        |                                          |                                                                                        |                                               | 0                                              | NRI rates hurricane Not Applicable for this county, and no counted federal declaration for this county names it (EM-3253-MT names it but is not counted as a local occurrence; see B1-d). | No recorded events in Storm Events since 1996 (data through 2026-06-30). |

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

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

Local data needed: state and local lightning records (Storm Events records this hazard 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 NRI risk rating, score 0 to 100    |
|------------|----------------------------------------------------------------|
| Earthquake | tract 1 (Very Low, 38.9); tract 2 (Very Low, 29.8)             |
| Hurricane  | no tract has a National Risk Index rating for this hazard      |
| Landslide  | tract 1 (Relatively Moderate, 96.0); tract 2 (Very Low, 24.4)  |
| Tornado    | tract 1 (Relatively Low, 38.8); tract 2 (Very Low, 24.9)       |
| Wildfire   | tract 1 (Very High, 99.4); tract 2 (Relatively Moderate, 95.4) |

Up to 3 census tracts per hazard, highest National Risk Index rating first, then highest score; a tract number is the Census tract number (for example 1 is Census Tract 1). 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                            | 2 records, 1998 to 2000 (2 zone-level) | 1 day to 7 days (median 4 days); 2 with a recorded value   | 7 consecutive days, 1998-12-18 to 1998-12-24, zone-level |                                   | Countywide (zone-level records).                                                                        | Wind chill: in event narratives only (local data needed).                                                                                                            |
| Frost/Freeze (outside NRI's Cold Wave definition) | crop damage                           | 0                                      |                                                            |                                                          |                                   |                                                                                                         | Temperature: in event narratives only (local data needed).                                                                                                           |
| Drought                                           | U.S. Drought Monitor scale (D0 to D4) | 1 record, 2021 (1 zone-level)          | 31 days; 1 with a recorded value                           | 31 days (1 month), 2021-08-01 to 2021-08-31, zone-level  |                                   | Countywide (zone-level records).                                                                        | Storm Events enters a drought at D2 or worse east of the Rockies and D3 or worse from the Rockies west (NWS Instruction 10-1605); NRI drought counts D3 and D4 only. |
| Earthquake                                        | Modified Mercalli (local data)        | 0                                      |                                                            |                                                          |                                   |                                                                                                         | Storm Events does not record earthquakes; the USGS earthquake catalog is the source.                                                                                 |
| Hail                                              | hail size (inches)                    | 230 records, 1955 to 2025              | 0.75 in to 4.5 in (median 1 in); 230 with a recorded value | 4.5 in hail, 1996-06-26                                  |                                   | Event records naming jurisdictions in the plan: Roundup city (104 records), Melstone town (25 records). |                                                                                                                                                                      |
| Excessive Heat, Heat                              | heat index (in event narratives)      | 0                                      |                                                            |                                                          |                                   |                                                                                                         | Heat index: in event narratives only (local data needed).                                                                                                            |
| Hurricane, Tropical Storm, Tropical Depression    | Saffir-Simpson                        | 0                                      |                                                            |                                                          |                                   |                                                                                                         | Storm Events files every zone of a storm's episode under the storm's type; flooding from the storm is filed as Flood or Flash Flood records.                         |
| Ice Storm                                         | Sperry-Piltz ice scale (local data)   | 1 record, 1998 (1 zone-level)          |                                                            | No damage reported in 1 record.                          |                                   | 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)                                          | 35 records, 1997 to 2025                 |                                                                                    | Flood, 2011-05-23, \$6,000,000 property; \$0 crops (2011 dollars)                                                                  |                                                                                     | Event records naming jurisdictions in the plan: Roundup city (11 records), Melstone town (5 records). | 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)                                                       | 1 record, 2013                           |                                                                                    | No damage reported in 1 record.                                                                                                    |                                                                                     | No event record names a jurisdiction in the plan.                                                     | Physical measure: in event narratives only (local data needed).                                                                                                                                                      |
| Lightning                                                        | annualized frequency (the measure FEMA's Local Mitigation Planning Handbook names) | 0                                        |                                                                                    |                                                                                                                                    |                                                                                     |                                                                                                       | 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)                                                            | 73 records, 1999 to 2026 (73 zone-level) | 35 kt (40 mph) to 81 kt (93 mph) (median 52 kt (60 mph)); 73 with a recorded value | 81 kt (93 mph) measured gust, High Wind, 2006-02-01; NWS zone MTZ029                                                               |                                                                                     | Countywide (zone-level records).                                                                      |                                                                                                                                                                                                                      |
| Thunderstorm Wind                                                | wind speed (kt and mph)                                                            | 45 records, 1983 to 2024                 | 50 kt (58 mph) to 80 kt (92 mph) (median 57 kt (66 mph)); 41 with a recorded value | 80 kt (92 mph) estimated, Thunderstorm Wind, 2001-07-02                                                                            | Thunderstorm Wind, 1998-08-14, \$10,000 property; crops not reported (1998 dollars) | Event records naming jurisdictions in the plan: Roundup city (15 records), Melstone town (3 records). |                                                                                                                                                                                                                      |
| Tornado                                                          | Enhanced Fujita (Fujita before Feb 2007)                                           | 5 records, 1986 to 2013                  | F/EF0 to F/EF2 (median F/EF0); 5 with a recorded value                             | F2 tornado, 1986-05-04, 0.1 mi path length (whole path, pre-1996), 10 yd wide, \$2,500 property; crops not recorded (1986 dollars) | Tornado, 1999-05-20, \$25,000 property; crops not reported (1999 dollars)           | Event records naming jurisdictions in the plan: Melstone town (1 record), Roundup city (1 record).    | Before 1996 a tornado is listed once, under the county where it began, with its whole path's rating and length; from 1996 on, each county lists its own segment. Length is not used to rank tornadoes (see Methods). |

| Hazard                                                                      | Scale                                  | Records<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)           | 5 records,<br>2012 to 2020<br>(5 zone-level)   |                | No damage reported in 5 records.  |                                   | Countywide (zone-level records). | Acres burned: in event narratives only (local data needed). |
| Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet | none in data<br>(snowfall: local data) | 86 records,<br>1996 to 2026<br>(86 zone-level) |                | No damage reported in 86 records. |                                   | 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: 15 declarations covering 12 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> | Flags               | Notes                    |
|------------|----------------|-------------|-----------------|--------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------|--------------------------|
| 2023-10-11 | 2023-06-01     | DR-4745-MT  | Major disaster  | Flooding                                         | Inland Flooding                                                      | \$42,934.64                                                                 | within last 5 years |                          |
| 2020-09-02 | 2020-09-02     | FM-5344-MT  | Fire management | Bobcat Fire                                      | Wildfire                                                             | no Public Assistance recorded                                               |                     |                          |
| 2020-03-31 | 2020-01-20     | DR-4508-MT  | Major disaster  | COVID-19 Pandemic                                | Non-natural, not counted                                             | no Public Assistance recorded                                               |                     |                          |
| 2020-03-13 | 2020-01-20     | EM-3476-MT  | Emergency       | COVID-19                                         | Non-natural, not counted                                             | no Public Assistance recorded                                               |                     | same incident as DR-4508 |
| 2018-10-31 | 2018-05-01     | DR-4405-MT  | Major disaster  | Flooding                                         | Inland Flooding                                                      | \$71,044.14                                                                 |                     |                          |
| 2014-10-09 | 2014-08-21     | DR-4198-MT  | Major disaster  | Severe Storms, Straight-Line Winds, and Flooding | Inland Flooding; Strong Wind                                         | \$203,285.21                                                                |                     |                          |
| 2014-04-17 | 2014-03-01     | DR-4172-MT  | Major disaster  | Ice Jams and Flooding                            | Inland Flooding                                                      | \$232,031.86                                                                |                     |                          |
| 2013-07-10 | 2013-05-19     | DR-4127-MT  | Major disaster  | Flooding                                         | Inland Flooding                                                      | \$78,127.06                                                                 |                     |                          |
| 2012-06-26 | 2012-06-26     | FM-2988-MT  | Fire management | Dahl Fire                                        | Wildfire                                                             | no Public Assistance recorded                                               |                     |                          |
| 2011-06-17 | 2011-04-04     | DR-1996-MT  | Major disaster  | Severe Storms and Flooding                       | Inland Flooding                                                      | \$2,430,437.15                                                              |                     |                          |
| 2005-09-13 | 2005-08-29     | EM-3253-MT  | Emergency       | Hurricane Katrina Evacuation                     | Hurricane: evacuation support, not a local hazard event; not counted | no Public Assistance recorded                                               |                     |                          |
| 2000-08-30 | 2000-07-13     | DR-1340-MT  | Major disaster  | Wildfires                                        | Wildfire                                                             | PA not declared for this county                                             |                     |                          |

| Declared   | Incident began | FEMA number | Type            | Title                                       | Mapped hazard   | County Public Assistance                        | Flags | Notes |
|------------|----------------|-------------|-----------------|---------------------------------------------|-----------------|-------------------------------------------------|-------|-------|
|            |                |             |                 |                                             |                 | <i>federal share obligated, nominal dollars</i> |       |       |
| 1999-07-26 | 1999-07-24     | FM-2266-MT  | Fire management | Fishel Creek Fire Complex                   | Wildfire        | no Public Assistance recorded                   |       |       |
| 1997-07-25 | 1997-03-01     | DR-1183-MT  | Major disaster  | Severe Storms,Ice Jams, Snow Melt, Flooding | Inland Flooding | no Public Assistance recorded                   |       |       |
| 1977-08-22 | 1977-08-22     | EM-3050-MT  | Emergency       | Drought                                     | Drought         | no Public Assistance recorded                   |       |       |

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

Statewide declarations

Source: 2

| Declared   | Incident began | FEMA number | Type           | Title                  | Mapped hazard   |
|------------|----------------|-------------|----------------|------------------------|-----------------|
| 1964-12-18 | 1964-12-18     | DR-182-MT   | Major disaster | Severe Winter Storm    | Winter Weather  |
| 1964-06-09 | 1964-06-09     | DR-172-MT   | Major disaster | Heavy Rains & Flooding | Inland Flooding |
| 1953-06-06 | 1953-06-06     | DR-5-MT     | Major disaster | Floods                 | Inland Flooding |

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.

11 Fire Management declarations (1973-08-16 to 1996-09-06) FEMA filed as Statewide with no county; each names one local fire. Listed on the state page.

Public Assistance not placed in any Montana county: 2 rows, \$679,475.72; listed on the Montana state page.

Source: 3

Previous occurrences by hazard, with explicit no-event rows

Sources: 2, 6, 7

| Hazard     | Storm Events records, all years on file<br><i>(years in the Period column)</i> | Since plan approval<br><i>records</i> | In the 12 months before plan approval<br><i>records</i> | Last 5 years<br><i>records</i> | Declared incidents, all years<br><i>separate disasters</i> | Declared since approval<br><i>separate disasters</i> | Period             | Statement                                                                            |
|------------|--------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------|--------------------------------|------------------------------------------------------------|------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------|
| Cold Wave  | 2                                                                              | 0                                     | 0                                                       | 0                              | 0                                                          | 0                                                    | 1996 to 2026-06-30 |                                                                                      |
| Drought    | 1                                                                              | 0                                     | 0                                                       | 0                              | 1                                                          | 0                                                    | 1996 to 2026-06-30 |                                                                                      |
| Earthquake | 0                                                                              | 0                                     | 0                                                       | 0                              | 0                                                          | 0                                                    |                    | Storm Events does not record earthquakes; the USGS earthquake catalog is the source. |
| Hail       | 230                                                                            | 4                                     | 1                                                       | 14                             | 0                                                          | 0                                                    | 1955 to 2026-06-30 |                                                                                      |
| Heat Wave  | 0                                                                              | 0                                     | 0                                                       | 0                              | 0                                                          | 0                                                    | 1996 to 2026-06-30 | No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events                       |
| Hurricane  | 0                                                                              | 0                                     | 0                                                       | 0                              | 0                                                          | 0                                                    | 1996 to 2026-06-30 | No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events                       |
| Ice Storm  | 1                                                                              | 0                                     | 0                                                       | 0                              | 0                                                          | 0                                                    | 1996 to 2026-06-30 |                                                                                      |

| <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>                                                  |
|--------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------|-------------------------------------------------------------------|
| Inland<br>Flooding | 35                                                                                        | 1                                                | 0                                                                  | 4                                         | 7                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                   |
| Landslide          | 1                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                   |
| Lightning          | 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 |
| Strong Wind        | 118                                                                                       | 4                                                | 6                                                                  | 23                                        | 1                                                                     | 0                                                               | 1955 to<br>2026-06-30 | Includes 73 High Wind records.                                    |
| Tornado            | 5                                                                                         | 0                                                | 0                                                                  | 0                                         | 0                                                                     | 0                                                               | 1950 to<br>2026-06-30 |                                                                   |
| Wildfire           | 5                                                                                         | 0                                                | 0                                                                  | 0                                         | 4                                                                     | 0                                                               | 1996 to<br>2026-06-30 |                                                                   |
| Winter<br>Weather  | 86                                                                                        | 1                                                | 2                                                                  | 8                                         | 0                                                                     | 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                                                                          | Why listed                                                    |
|------------|-------------------|-----------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------|
| 2021-08-01 | Drought           |                                                           | \$0 property; \$0 crops, reported for the zone (2021 dollars) | 0, 0                                      | NWS zone MTZ029 (MUSSELSHELL), zone-level                                         | B1-c worst recorded: Drought                                  |
| 2011-05-23 | Flood             |                                                           | \$6,000,000 property; \$0 crops (2011 dollars)                | 0, 0                                      | ROUNDUP ARPT to MELSTONE                                                          | B1-c worst recorded: Flash Flood, Flood, Lakeshore Flood      |
| 2006-02-01 | High Wind         | 81 kt (93 mph) measured gust                              | damage not reported                                           | 0, 0                                      | NWS zone MTZ029 (MUSSELSHELL), zone-level                                         | B1-c worst recorded: High Wind and Strong Wind                |
| 2001-07-02 | Thunderstorm Wind | 80 kt (92 mph) estimated                                  | damage not reported                                           | 0, 0                                      | ROUNDUP                                                                           | B1-c worst recorded: Thunderstorm Wind                        |
| 2000-07-03 | Thunderstorm Wind | speed not recorded                                        | \$3,000 property; crops not reported (2000 dollars)           | 0, 0                                      | ROUNDUP                                                                           | large reported damage                                         |
| 1999-08-14 | Thunderstorm Wind | 52 kt (60 mph), measurement type not recorded             | \$1,000 property; crops not reported (1999 dollars)           | 0, 0                                      | ROUNDUP                                                                           | large reported damage                                         |
| 1999-05-20 | Tornado           | F0, 0.2 mi within this county, 30 yd wide                 | \$25,000 property; crops not reported (1999 dollars)          | 0, 0                                      | ROUNDUP                                                                           | B1-c most damaging: Tornado                                   |
| 1998-12-18 | Cold/Wind Chill   |                                                           | damage not reported                                           | 0, 0                                      | Storm Events area GOLDEN VALLEY/MUSSELSHELL (legacy zone code MTZ029), zone-level | B1-c worst recorded: Cold/Wind Chill, Extreme Cold/Wind Chill |
| 1998-08-14 | Thunderstorm Wind | speed not recorded                                        | \$10,000 property; crops not reported (1998 dollars)          | 0, 0                                      | ROUNDUP                                                                           | B1-c most damaging: Thunderstorm Wind                         |
| 1998-07-03 | Flash Flood       |                                                           | \$200,000 property; crops not reported (1998 dollars)         | 0, 0                                      | ROUNDUP                                                                           | large reported damage                                         |
| 1996-06-26 | Hail              | 4.5 in                                                    | damage not reported                                           | 0, 0                                      | ROUNDUP                                                                           | B1-c worst recorded: Hail                                     |
| 1986-05-04 | Tornado           | F2, 0.1 mi path length (whole path, pre-1996), 10 yd wide | \$2,500 property; crops not recorded (1986 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" (484 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 record<br>period (hail, wind and tornado<br>are area-weighted, so can be<br>fractional) | NRI period                                       | Location   | Note                                                            |
|--------------------|---------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------|-----------------------------------------------------------------|
| Cold Wave          | 3.95                                                                | event-days<br>per year                 | about 3.95 days per year                                                                            | Possible (from<br>Storm Events: 2 of<br>30 years) | event-days in 2 of 30<br>years, 1996 to 2025<br>(6.67%)  | 75.1                                                                                                              | 2005-11-12 to<br>2024-11-12 (19<br>years)        | countywide |                                                                 |
| Drought            | 70.3                                                                | event-days<br>per year                 | about 70.3 days per year                                                                            | Possible (from<br>Storm Events: 1 of<br>30 years) | event-days in 1 of 30<br>years, 1996 to 2025<br>(3.33%)  | 1,778                                                                                                             | 2000 to 2025<br>(25.25 years; D3<br>and D4 only) | countywide |                                                                 |
| Earthquake         | 0.000662                                                            | annual<br>probability at<br>a location | chance a given location in<br>the county has at least<br>minor-damage shaking in<br>a year: 0.0662% |                                                   |                                                          | not shown                                                                                                         | modeled                                          | see B1-f   | No descriptor (Storm<br>Events does not<br>record earthquakes). |
| Hail               | 2.06                                                                | events per<br>year                     | about 2.06 per year                                                                                 | Highly likely                                     | FEMA annualized<br>frequency (modeled)                   | 78.2 (modeled)                                                                                                    | 1986 to 2023 (38<br>years)                       | countywide |                                                                 |
| Heat Wave          | 2.11                                                                | event-days<br>per year                 | about 2.11 days per year                                                                            |                                                   | event-days in 0 of 30<br>years, 1996 to 2025<br>(0%)     | 24                                                                                                                | 2005-11-12 to<br>2024-11-12 (19<br>years)        | countywide | No Storm Events heat<br>wave record, 1996 to<br>2025            |
| Hurricane          |                                                                     | events per<br>year                     |                                                                                                     |                                                   |                                                          |                                                                                                                   | 1851 to 2024<br>(Atlantic)                       | see B1-f   | Not Applicable in NRI<br>for this county; no<br>descriptor.     |
| Ice Storm          | 0.0149                                                              | event-days<br>per year                 | about 0.0149 days per<br>year                                                                       | Possible (from<br>Storm Events: 1 of<br>30 years) | event-days in 1 of 30<br>years, 1996 to 2025<br>(3.33%)  | 0                                                                                                                 | 1946-12-31 to<br>2014-02-12 (67<br>years)        | countywide |                                                                 |
| Inland<br>Flooding | 0.893                                                               | event-days<br>per year                 | about 0.893 days per<br>year                                                                        | Likely (from Storm<br>Events: 14 of 30<br>years)  | event-days in 14 of<br>30 years, 1996 to<br>2025 (46.7%) | 25                                                                                                                | 1996 to 2023 (28<br>years)                       | see B1-f   |                                                                 |
| Landslide          | 0.886                                                               | events per<br>year<br>(modeled)        | about 0.89 per year                                                                                 | Likely                                            | FEMA annualized<br>frequency (modeled)                   | not shown                                                                                                         | modeled                                          | see B1-f   |                                                                 |
| Lightning          | 30.8                                                                | days per year<br>with a strike         | about 30.8 days per year                                                                            | Highly likely                                     | FEMA annualized<br>frequency (modeled)                   | not shown                                                                                                         | 1995 to 2023 (29<br>years; CONUS)                | countywide |                                                                 |
| Strong<br>Wind     | 0.918                                                               | events per<br>year                     | about 0.92 per year                                                                                 | Likely                                            | FEMA annualized<br>frequency (modeled)                   | 35                                                                                                                | 1986 to 2023 (38<br>years)                       | countywide |                                                                 |
| Tornado            | 0.147                                                               | events per<br>year                     | about 1 in 7 years                                                                                  | Likely                                            | FEMA annualized<br>frequency (modeled)                   | not shown                                                                                                         | 1950 to 2023<br>(EF2+); 1986 to<br>2023 (EF0-1)  | see B1-f   |                                                                 |

| 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 record<br>period (hail, wind and tornado<br>are area-weighted, so can be<br>fractional) | NRI period                                | Location   | Note                                      |
|-------------------|---------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------|-------------------------------------------|
| Wildfire          | 0.00373                                                             | annual<br>probability at<br>a location | chance a given location in<br>the county burns in a<br>year: 0.373% | Possible (from<br>Storm Events: 2 of<br>30 years)       | Storm Events<br>records in 2 of 30<br>years, 1996 to 2025<br>(6.67%) | not shown                                                                                                         | modeled                                   | see B1-f   | Descriptor from Storm<br>Events, not NRI. |
| Winter<br>Weather | 17.2                                                                | event-days<br>per year                 | about 17.2 days per year                                            | Highly likely (from<br>Storm Events: 27<br>of 30 years) | event-days in 27 of<br>30 years, 1996 to<br>2025 (90%)               | 327                                                                                                               | 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 | 137                                   | 30              | 4.57                                     |
| Hail                                           | 2.00 in+                  | 1996 to 2025 | 12                                    | 30              | 0.4                                      |
| Thunderstorm Wind (counted as NRI Strong Wind) | 50-64 kt                  | 1996 to 2025 | 32                                    | 30              | 1.07                                     |
| Thunderstorm Wind (counted as NRI Strong Wind) | 65 kt+                    | 1996 to 2025 | 7                                     | 30              | 0.233                                    |
| Thunderstorm Wind (counted as NRI Strong Wind) | unmeasured or below 50 kt | 1996 to 2025 | 2                                     | 30              | 0.0667                                   |
| 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       | 2 of 2                        | 95.8                     | 97.6   | 99.3 | Very High 2                              |
| Drought         | 2 of 2                        | 70.4                     | 79.7   | 88.9 | Relatively Low 1, Very Low 1             |
| Earthquake      | 2 of 2                        | 29.8                     | 34.3   | 38.9 | Very Low 2                               |
| Hail            | 2 of 2                        | 74.9                     | 83.9   | 92.9 | Relatively High 1, Relatively Moderate 1 |
| Heat Wave       | 2 of 2                        | 20.4                     | 32.6   | 44.8 | Relatively Low 2                         |
| Hurricane       | 0 of 2                        |                          |        |      | Not Applicable 2                         |
| Ice Storm       | 2 of 2                        | 8.4                      | 18.0   | 27.7 | Very Low 2                               |
| Inland Flooding | 2 of 2                        | 29.1                     | 59.4   | 89.7 | Relatively High 1, Relatively Low 1      |
| Landslide       | 2 of 2                        | 24.4                     | 60.2   | 96.0 | Relatively Moderate 1, Very Low 1        |
| Lightning       | 2 of 2                        | 99.6                     | 99.8   | 99.9 | Very High 2                              |
| Strong Wind     | 2 of 2                        | 49.8                     | 65.0   | 80.3 | Relatively Moderate 1, Relatively Low 1  |

| Hazard         | Tracts<br><i>rated of all</i> | NRI risk score, 0 to 100 |        |      | Tracts by rating                   |
|----------------|-------------------------------|--------------------------|--------|------|------------------------------------|
|                |                               | Min                      | Median | Max  |                                    |
| Tornado        | 2 of 2                        | 24.9                     | 31.9   | 38.8 | Relatively Low 1, Very Low 1       |
| Wildfire       | 2 of 2                        | 95.4                     | 97.4   | 99.4 | Very High 1, Relatively Moderate 1 |
| Winter Weather | 2 of 2                        | 96.0                     | 97.6   | 99.2 | Very High 2                        |

Drought: Agriculture is all of NRI's expected annual loss for this hazard in the county, so the tract range mostly reflects where crop and livestock value is.

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, drought, 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 (crop and livestock value where a line above names agriculture).

This county has 2 census tracts; the minimum, median and maximum come from those 2.

Each jurisdiction (starting figures from federal data)

Sources: 1, 3, 4, 6

| Jurisdiction       | Type   | Plan status                  | Repetitive loss                                                   | Public Assistance to this jurisdiction                                                  | Event records naming this place  |
|--------------------|--------|------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------|
|                    |        |                              | <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> |
| Musselshell County | County | Approved, expires 2030-03-11 | FMA RL 0, SRL 0; any 1                                            | \$2,822,533.60                                                                          | 0 total; 0 since its plan        |
| Melstone town      | Town   | Approved, expires 2030-03-11 | FMA RL 0, SRL 0; any 0                                            | \$3,620.12                                                                              | 34 total; 0 since its plan       |
| Roundup city       | City   | Approved, expires 2030-03-11 | FMA RL 1, SRL 0; any 2                                            | \$223,709.20                                                                            | 131 total; 2 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<br><i>modeled dollars</i> | Agriculture exposure<br><i>modeled dollars</i> | Population exposed<br><i>people</i> | EAL buildings<br><i>modeled dollars per year</i> | EAL agriculture<br><i>modeled dollars per year</i> | Cost of expected deaths and injuries<br><i>FEMA's dollar value per year, not property damage</i> | EAL as % of exposure<br><i>buildings; agriculture where noted</i> | Storm Events damage since 2025-03-12<br><i>county-coded records, property plus crops, nominal dollars</i> | Zone-level damage since plan<br><i>property plus crops, reported for the zone</i> | Public Assistance since plan<br><i>nominal dollars; see note</i> | Note                                                                                                                                                                      |
|-----------------|---------------------------------------------|------------------------------------------------|-------------------------------------|--------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cold Wave       | \$1,928,076,531                             | \$48,004,891                                   | 4,705                               | \$3,307                                          | \$113,697                                          | \$1,199,075                                                                                      | 0.000172%                                                         |                                                                                                           |                                                                                   |                                                                  |                                                                                                                                                                           |
| Drought         | n/a                                         | \$8,107,082                                    | n/a                                 | n/a                                              | \$8,899                                            | n/a                                                                                              | 0.11% (agriculture)                                               |                                                                                                           |                                                                                   |                                                                  | NRI has no building exposure for this hazard; agriculture shown                                                                                                           |
| Earthquake      | \$3,433,604,766                             | n/a                                            | 4,730                               | \$20,375                                         | n/a                                                | \$2,422                                                                                          | 0.000593%                                                         |                                                                                                           |                                                                                   |                                                                  |                                                                                                                                                                           |
| Hail            | \$1,928,076,531                             | \$48,004,891                                   | 4,705                               | \$77,179                                         | \$28,213                                           | \$6,954                                                                                          | 0.004%                                                            | \$0                                                                                                       |                                                                                   |                                                                  |                                                                                                                                                                           |
| Heat Wave       | \$1,928,076,531                             | \$48,004,891                                   | 4,705                               | \$16                                             | \$2,906                                            | \$33,194                                                                                         | under 0.0001%                                                     |                                                                                                           |                                                                                   |                                                                  |                                                                                                                                                                           |
| Hurricane       |                                             |                                                |                                     |                                                  |                                                    |                                                                                                  |                                                                   |                                                                                                           |                                                                                   |                                                                  | Not Applicable in NRI for this county                                                                                                                                     |
| Ice Storm       | \$1,928,076,531                             | n/a                                            | 4,705                               | \$1,738                                          | n/a                                                | \$321                                                                                            | under 0.0001%                                                     |                                                                                                           |                                                                                   |                                                                  |                                                                                                                                                                           |
| Inland Flooding | \$1,926,701,219                             | \$3,514,489                                    | 258                                 | \$1,327,091                                      | \$65,072                                           | \$15,343                                                                                         | n/a (see note)                                                    | \$0                                                                                                       |                                                                                   |                                                                  | 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       | \$155,417,900                               | n/a                                            | 366                                 | \$1,303                                          | n/a                                                | \$1,298                                                                                          | 0.000839%                                                         |                                                                                                           |                                                                                   |                                                                  |                                                                                                                                                                           |
| Lightning       | \$1,928,076,531                             | n/a                                            | 4,705                               | \$1,974                                          | n/a                                                | \$423,804                                                                                        | 0.000102%                                                         |                                                                                                           |                                                                                   |                                                                  |                                                                                                                                                                           |
| Strong Wind     | \$1,928,076,531                             | \$48,004,891                                   | 4,705                               | \$16,195                                         | \$10,335                                           | \$25,346                                                                                         | 0.00084%                                                          |                                                                                                           | \$0                                                                               |                                                                  |                                                                                                                                                                           |
| Tornado         | \$1,928,076,531                             | \$48,004,891                                   | 4,705                               | \$28,756                                         | \$514                                              | \$4,702                                                                                          | 0.00149%                                                          |                                                                                                           |                                                                                   |                                                                  |                                                                                                                                                                           |

| Hazard         | Building exposure<br><i>modeled dollars</i> | Agriculture exposure<br><i>modeled dollars</i> | Population exposed<br><i>people</i> | EAL buildings<br><i>modeled dollars per year</i> | EAL agriculture<br><i>modeled dollars per year</i> | Cost of expected deaths and injuries<br><i>FEMA's dollar value per year, not property damage</i> | EAL as % of exposure<br><i>buildings; agriculture where noted</i> | Storm Events damage since 2025-03-12<br><i>county-coded records, property plus crops, nominal dollars</i> | Zone-level damage since plan<br><i>property plus crops, reported for the zone</i> | Public Assistance since plan<br><i>nominal dollars; see note</i> | Note |
|----------------|---------------------------------------------|------------------------------------------------|-------------------------------------|--------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------|------|
| Wildfire       | \$804,137,421                               | \$31,198,927                                   | 2,765                               | \$1,358,799                                      | \$329                                              | \$43,891                                                                                         | 0.169%                                                            |                                                                                                           |                                                                                   |                                                                  |      |
| Winter Weather | \$1,928,076,531                             | \$48,004,891                                   | 4,705                               | \$33,441                                         | \$52                                               | \$43,843                                                                                         | 0.00173%                                                          |                                                                                                           | \$0                                                                               |                                                                  |      |

Totals since 2025-03-12 (Storm Events through 2026-06-30): 5 county-coded records, 5 with a damage value recorded (including \$0), \$0; 5 zone-level records, 5 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                                                                                                                                                                    | 4,705           |
| Building value (total, not at risk)                                                                                                                                           | \$1,928,076,531 |
| Agriculture value (total, not at risk)                                                                                                                                        | \$48,004,891    |
| NRI risk rating (all hazards)                                                                                                                                                 | Very Low        |
| Expected annual loss, buildings and agriculture, all hazards                                                                                                                  | \$3,100,190     |
| 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) | \$1,800,194     |
| Social vulnerability rating                                                                                                                                                   | Relatively High |
| Community resilience rating                                                                                                                                                   | Relatively Low  |
| 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) | 1          | Severe repetitive loss, FMA definition (44 CFR 77.2) | 0          |
| Repetitive loss, NFIP insurance definition    | 3          | 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 total and NFIP communities

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                                       | 1                            | 0                             | 3                             | 0                              | 3                                 | 0                              | 1                                      |
| of which: Roundup city                             | 1                            | 0                             | 2                             | 0                              | 2                                 | 0                              | 0                                      |
| of which: Musselshell County (unincorporated area) | 0                            | 0                             | 1                             | 0                              | 1                                 | 0                              | 1                                      |

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

Sources: 1, 4

| Jurisdiction       | NFIP community ID | 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> |
|--------------------|-------------------|------------------------------|-------------------------------|-------------------------------|--------------------------------|-----------------------------------|--------------------------------|----------------------------------------|
| Musselshell County | 300174            | 0                            | 0                             | 1                             | 0                              | 1                                 | 0                              | 1                                      |
| Melstone town      | 300099            | 0                            | 0                             | 0                             | 0                              | 0                                 | 0                              | 0                                      |
| Roundup city       | 300050            | 1                            | 0                             | 2                             | 0                              | 2                                 | 0                              | 0                                      |

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

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

County repeat-flood properties by occupancy group

Sources: 1, 4

| Occupancy group           | RL, FMA<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> |
|---------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------------|-----------------------------------|--------------------------------|----------------------------------------|
| single-family residential | 1                            | 0                             | 2                             | 0                              | 2                                 | 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                             | 1                             | 0                              | 1                                 | 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 2 properties are NFIP repetitive loss but not FMA repetitive loss.

Exact counts; no count suppression.

Sources

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

1. FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-29T134039Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)
2. FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-29T162832Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)
3. FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-29T150754Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)
4. FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)
5. FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-30, [https://www.fema.gov/about/reports-and-data/openfema/nri/v120/NRI\\_Table\\_Counties.zip](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)

---

## What this packet is and what the plan adds

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

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

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

---

## OpenFEMA disclaimer

This product uses the Federal Emergency Management Agency's OpenFEMA API, but is not endorsed by FEMA. The Federal Government or FEMA cannot vouch for the data or analyses derived from these data after the data have been retrieved from the Agency's website(s).

---

## Reuse, citation and corrections

Reuse and citation: Hazard Plain text and tables are licensed under Creative Commons Attribution 4.0 International (CC BY 4.0, <https://creativecommons.org/licenses/by/4.0/>); credit Hazard Plain and the release. The underlying federal data are public domain; OpenFEMA data are also subject to the OpenFEMA terms and conditions.

Cite this: Hazard Plain (2026). Musselshell County, MT: risk-assessment baseline packet, release 2026-10 (data as of 2026-09-30; County FIPS 30065). Automated baseline. <https://hazardplain.org/mt/30065/> 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.