

Guam, GU

Risk-assessment baseline packet

County FIPS: 66010 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 2029-07-24. Plan: Guam state-level plan (plan 109894), approved 2024-07-25.

Since the plan was approved on 2024-07-25: 3 new hazard declarations (2 incidents): EM-3644-GU (Typhoon Sinlaku), DR-4921-GU (Super Typhoon Sinlaku), EM-3648-GU (Typhoon Bavi).

NOAA Storm Events records since that date: 12 records (data through 2026-06-30).

Highest expected annual loss (FEMA National Risk Index, modeled total; see B1-a): Hurricane (\$148,706,410 a year), Tsunami (\$39,756,024) and Earthquake (\$26,351,829).

Repetitive-loss flood properties now: FMA RL 1, SRL 1 (44 CFR 77.2); any definition: 16.

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; 66010 is this area.

D0 to D4: U.S. Drought Monitor categories, from abnormally dry (D0) to exceptional drought (D4).

F/EF, EFU: Fujita and Enhanced Fujita tornado ratings; EFU is an unrated tornado.

kt, CONUS: knots (1 kt is about 1.15 mph); the contiguous United States.

CFR: Code of Federal Regulations.

A4-a, E1-a: other items of FEMA's Local Mitigation Plan Review Tool (sources, and changes since the last plan).

Dollars: nominal (as reported, labeled with the year), not adjusted for inflation.

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Plan clock

Status:	Approved, expires 2029-07-24	Plan:	Guam state-level plan (plan 109894)
Approved:	2024-07-25	Days to expiry:	1,028

Plan clock from the Guam state-level plan; FEMA plan data has no county-level or local plan row for this area.

What changed since your last plan (approved 2024-07-25)

New federal declarations:

3 new hazard declarations (2 incidents): EM-3644-GU (Typhoon Sinlaku), DR-4921-GU (Super Typhoon Sinlaku), EM-3648-GU (Typhoon Bavi)

Repetitive loss now:

FMA RL 1, SRL 1 (44 CFR 77.2); any definition: 16

Storm Events records since approval:

12 records (data through 2026-06-30)

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 negative = days since expiry	Update underway	Notes
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No rows for this unit.

No jurisdictions listed in FEMA plan data for this unit.
Plan 109894 covers 1 other participant: Guam.
State plan status and tribal plans in this state: see the state page.

Supports FEMA checklist item B1-a: hazard identification

Hazards NRI does not cover (local data needed)

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

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

Sources: 5, 6

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL total (see note) <i>modeled dollars per year</i>	Storm Events records, 1996 to 2026-06-30 <i>count</i>	Why this hazard can be left out <i>NRI Not Applicable, no declaration and no Storm Events record since 1996</i>	Storm Events coverage note
1	Hurricane	Insufficient Data	Very High	\$140,265,531	\$6,329	\$8,434,550	\$148,706,410	31		Includes 2 Tropical Depression records (outside NRI's Hurricane definition).
2	Tsunami	Insufficient Data	Relatively High	\$413,777	n/a	\$39,342,247	\$39,756,024	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
3	Earthquake	Insufficient Data	Relatively Moderate	\$20,346,681	n/a	\$6,005,148	\$26,351,829			Storm Events does not record earthquakes.
4	Inland Flooding	Insufficient Data	Very Low	\$0	\$800	\$591,112	\$591,911	87		
5	Coastal Flooding	Insufficient Data	Relatively Low	\$148,211	n/a	\$281	\$148,493	2		
6	Cold Wave	Insufficient Data	No Expected Annual Losses	\$0	\$0	\$0	\$0	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
7	Heat Wave	Insufficient Data	No Expected Annual Losses	\$0	\$0	\$0	\$0	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
8	Winter Weather	Insufficient Data	No Expected Annual Losses	\$0	\$0	\$0	\$0	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Drought	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	12		

Rank by EAL	Hazard	NRI risk rating	EAL rating	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL total (see note) <i>modeled dollars per year</i>	Storm Events records, 1996 to 2026-06-30 <i>count</i>	Why this hazard can be left out <i>NRI Not Applicable, no declaration and no Storm Events record since 1996</i>	Storm Events coverage note
	Hail	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Landslide	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	1		
	Lightning	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	19		
	Strong Wind	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	13		Includes 10 High Wind and 2 Strong Wind records (NOAA non- thunderstorm wind types, outside NRI's Strong Wind definition).
	Tornado	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	0		No recorded events in Storm Events since 1996 (data through 2026-06-30).
	Volcanic Activity	Not Applicable	Not Applicable					4	NRI rates this Not Applicable, but 4 Storm Events records of this type exist since 1996; review before omitting.	
	Wildfire	Insufficient Data	Insufficient Data	n/a	n/a	n/a	n/a	7		

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 tsunامي, cold wave, heat wave, winter weather, hail and tornado records (Storm Events records these hazards only in part).

Not applicable to this county per NRI, with no federal declaration and no Storm Events record since 1996: avalanche and ice storm. 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, Lightning, Strong Wind and Winter Weather.

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

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

Source: 5

Hazard	Highest-rated census tracts <i>NRI risk rating, score 0 to 100</i>
Earthquake	no tract has a National Risk Index rating for this hazard
Hurricane	no tract has a National Risk Index rating for this hazard
Landslide	no tract has a National Risk Index rating for this hazard
Tornado	no tract has a National Risk Index rating for this hazard
Tsunami	no tract has a National Risk Index rating for this hazard
Volcanic Activity	no tract has a National Risk Index rating for this hazard
Wildfire	no tract has a National Risk Index rating for this hazard

Up to 3 census tracts per hazard, highest National Risk Index rating first, then highest score; a tract number is the Census tract number. FEMA's Resilience Analysis and Planning Tool maps the National Risk Index for every tract: <https://www.fema.gov/emergency-managers/practitioners/resilience-analysis-and-planning-tool>

Supports FEMA checklist item B1-c: hazard extent

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

Sources: 6, 7

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Coastal Flood, Storm Surge/ Tide	none in data (flood depth: FIRM)	2 records, 2015 to 2024 (2 zone-level)		Coastal Flood, 2015-07-11, \$1,000,000 property; \$0 crops (2015 dollars); Storm Events area GUAM (legacy zone code GUZ006)		Countywide (zone-level records).	Flood depth: see the FEMA Flood Insurance Rate Map.
Cold/Wind Chill, Extreme Cold/Wind Chill	wind chill		0				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).

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Drought	U.S. Drought Monitor scale (D0 to D4)	12 records, 1998 to 2025 (12 zone-level)	29 days to 120 days (median 80 days); 4 with a recorded value	120 days (4 months), 1998-01-01 to 1998-04-30, a run of 4 consecutive Storm Events drought records, 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)	0					
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	31 records, 1997 to 2026 (30 zone-level)		Strongest recorded: Hurricane (Typhoon) record (NOAA's event type name), 2023-05-23 to 2023-05-25, category 4, \$4,000,000,000 property; \$10,000,000 crops (2023 dollars) (as recorded; larger than this county's annual agriculture value in the National Risk Index (the county or state extension service keeps crop loss records)); Storm Events area GUAM (legacy zone code GUZ006)		No event record names a jurisdiction in the plan. Zone-level records (30) apply countywide.	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.
Flash Flood, Flood, Lakeshore Flood	damage and flood days (flood depth: FIRM)	87 records, 1997 to 2024 (4 zone-level)		Flash Flood, 2004-06-27, \$5,500,000 property; \$500,000 crops (2004 dollars) (as recorded; larger than this county's annual agriculture value in the National Risk Index (the county or state extension service keeps crop loss records)), 1 direct death		No event record names a jurisdiction in the plan. Zone-level records (4) apply countywide.	Flood depth: see the FEMA Flood Insurance Rate Map. Storm Events damage is often \$0 or blank for floods, major ones included; FEMA Public Assistance by declaration (B1-d) shows which floods cost the most.
Debris Flow	none (count and damage only)	1 record, 2025		Debris Flow, 2025-10-15, \$15,000 property; \$0 crops (2025 dollars)		No event record names a jurisdiction in the plan.	Physical measure: in event narratives only (local data needed).

Hazard	Scale	Records <i>count and years</i>	Observed range	Worst recorded event	Most damaging (when different)	How it applies to jurisdictions	Note
Lightning	annualized frequency (the measure FEMA's Local Mitigation Planning Handbook names)	19 records, 1997 to 2022		Lightning, 2011-10-14, \$0 property; \$0 crops (2011 dollars), 1 direct death	Lightning, 1999-02-14, \$100,000 property; crops not reported (1999 dollars)	No event record names a jurisdiction in the plan.	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)	12 records, 1997 to 2025 (12 zone-level)	35 kt (40 mph) to 53 kt (61 mph) (median 51 kt (59 mph)); 9 with a recorded value	53 kt (61 mph) measured gust, High Wind, 2009-10-15; Storm Events area GUAM (legacy zone code GUZ006)	High Wind, 1997-08-12, \$300,000 property; \$100,000 crops, reported for the zone (1997 dollars)	Countywide (zone-level records).	
Thunderstorm Wind	wind speed (kt and mph)	1 record, 2020	49 kt (56 mph); 1 with a recorded value	49 kt (56 mph) measured gust, Thunderstorm Wind, 2020-11-23		No event record names a jurisdiction in the plan.	
Tornado	Enhanced Fujita (Fujita before Feb 2007)	0					Before 1996 a tornado is listed once, under the county where it began, with its whole path's rating and length; from 1996 on, each county lists its own segment. Length is not used to rank tornadoes (see Methods).
Tsunami	none (count and damage only)	0					Physical measure: in event narratives only (local data needed).
Volcanic Ash, Volcanic Ashfall	Volcanic Explosivity Index (local data)	4 records, 2003 to 2005 (4 zone-level)		No damage reported in 4 records.		Countywide (zone-level records).	Physical measure: in event narratives only (local data needed).
Wildfire	acres burned (local data)	7 records, 1998 to 2024 (2 zone-level)		Wildfire, 1998-03-01, \$120,000 property; crops not reported (1998 dollars)		No event record names a jurisdiction in the plan. Zone-level records (2) apply countywide.	Acres burned: in event narratives only (local data needed).
Winter Storm, Heavy Snow, Blizzard, Lake-Effect Snow, Winter Weather, Sleet	none in data (snowfall: local data)	0					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: 22 declarations covering 18 separate hazard incidents counted in this packet (declarations for the same incident count once; non-natural and evacuation-only declarations are not counted).

Federal disaster declarations for this county

Sources: 1, 2, 3

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance <i>federal share obligated, nominal dollars</i>	Flags	Notes
2026-07-03	2026-07-02	EM-3648-GU	Emergency	Typhoon Bavi	Hurricane	not yet in FEMA's PA summaries (they cover declarations through 2026-06-30)	new since last plan; within last 5 years	
2026-06-30	2026-04-11	DR-4921-GU	Major disaster	Super Typhoon Sinlaku	Hurricane	no Public Assistance recorded	new since last plan; within last 5 years	
2026-04-11	2026-04-11	EM-3644-GU	Emergency	Typhoon Sinlaku	Hurricane	no Public Assistance recorded	new since last plan; within last 5 years	same incident as DR-4921
2023-10-08	2023-10-08	EM-3601-GU	Emergency	Tropical Storm Bolaven	Hurricane	no Public Assistance recorded	in the 12 months before plan approval; within last 5 years	
2023-05-25	2023-05-22	DR-4715-GU	Major disaster	Typhoon Mawar	Hurricane	\$2,045,803.53	within last 5 years	
2023-05-22	2023-05-22	EM-3594-GU	Emergency	Typhoon Mawar	Hurricane	no Public Assistance recorded	within last 5 years	same incident as DR-4715
2020-03-27	2020-01-20	DR-4495-GU	Major disaster	COVID-19 Pandemic	Non-natural, not counted	\$1,042,789.99		
2020-03-13	2020-01-20	EM-3466-GU	Emergency	COVID-19	Non-natural, not counted	no Public Assistance recorded		same incident as DR-4495
2019-05-07	2019-02-23	DR-4433-GU	Major disaster	Typhoon Wutip	Hurricane	no Public Assistance recorded		
2018-10-01	2018-09-10	DR-4398-GU	Major disaster	Typhoon Mangkhut	Hurricane	\$53,762.17		
2015-06-05	2015-05-13	DR-4224-GU	Major disaster	Typhoon Dolphin	Hurricane	\$12,095.50		
2014-09-10	2014-07-28	DR-4191-GU	Major disaster	Tropical Storm Halong	Hurricane	\$38,564.43		
2004-07-29	2004-06-26	DR-1533-GU	Major disaster	High Winds, Flooding, and Mudslides As a Result of Tropical Storm Tingting	Hurricane; Inland Flooding; Landslide; Strong Wind	\$0		

Declared	Incident began	FEMA number	Type	Title	Mapped hazard	County Public Assistance <i>federal share obligated, nominal dollars</i>	Flags	Notes
2002-12-08	2002-12-08	DR-1446-GU	Major disaster	Super Typhoon Pongsona	Hurricane	\$321,821.90		
2002-07-06	2002-07-05	DR-1426-GU	Major disaster	Typhoon Chata'an	Hurricane	\$124,097.93		
2001-12-05	2001-10-13	DR-1397-GU	Major disaster	Earthquake	Earthquake	\$2,707.05		
1997-12-17	1997-12-16	DR-1193-GU	Major disaster	Typhoon Paka, Torrential Rains, High Winds, High Surf	Hurricane	no Public Assistance recorded		
1992-08-28	1992-08-28	DR-957-GU	Major disaster	Typhoon Omar	Hurricane	no Public Assistance recorded		
1991-12-04	1991-11-27	DR-924-GU	Major disaster	Typhoon Yuri	Hurricane	no Public Assistance recorded		
1990-12-24	1990-12-21	DR-887-GU	Major disaster	Typhoon Russ	Hurricane	no Public Assistance recorded		
1988-01-20	1988-01-11	DR-810-GU	Major disaster	Typhoon Roy	Hurricane	no Public Assistance recorded		
1976-05-22	1976-05-22	DR-503-GU	Major disaster	Typhoon Pamela	Hurricane	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
1963-04-30	1963-04-30	DR-153-GU	Major disaster	Typhoon Olive	Hurricane (primary); also designated: Inland Flooding
1962-11-12	1962-11-12	DR-140-GU	Major disaster	Typhoon Karen	Hurricane (primary); also designated: 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.

1 Fire Management declaration (1998-03-22 to 1998-03-22) FEMA filed as Statewide with no county; each names one local fire. Listed on the state page.

Previous occurrences by hazard, with explicit no-event rows

Sources: 2, 6, 7

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval <i>records</i>	In the 12 months before plan approval <i>records</i>	Last 5 years <i>records</i>	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
Coastal Flooding	2	0	1	1	0	0	1996 to 2026-06-30	
Cold Wave	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Drought	12	2	4	6	0	0	1996 to 2026-06-30	

Hazard	Storm Events records, all years on file <i>(years in the Period column)</i>	Since plan approval <i>records</i>	In the 12 months before plan approval <i>records</i>	Last 5 years <i>records</i>	Declared incidents, all years <i>separate disasters</i>	Declared since approval <i>separate disasters</i>	Period	Statement
Earthquake	0	0	0	0	1	0		Storm Events does not record earthquakes; the USGS earthquake catalog is the source.
Hail	0	0	0	0	0	0	1955 to 2026-06-30	No recorded events, 1955 to 2026-06-30, NOAA NCEI Storm Events
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	31	3	1	5	17	2	1996 to 2026-06-30	Includes 2 Tropical Depression records.
Inland Flooding	87	4	3	14	1	0	1996 to 2026-06-30	
Landslide	1	1	0	1	1	0	1996 to 2026-06-30	
Lightning	19	0	0	1	0	0	1996 to 2026-06-30	
Strong Wind	13	2	0	2	1	0	1955 to 2026-06-30	Includes 10 High Wind and 2 Strong Wind records.
Tornado	0	0	0	0	0	0	1950 to 2026-06-30	No recorded events, 1950 to 2026-06-30, NOAA NCEI Storm Events
Tsunami	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events
Volcanic Activity	4	0	0	0	0	0	1996 to 2026-06-30	
Wildfire	7	0	1	1	0	0	1996 to 2026-06-30	
Winter Weather	0	0	0	0	0	0	1996 to 2026-06-30	No recorded events, 1996 to 2026-06-30, NOAA NCEI Storm Events

Notable Storm Events records

Sources: 1, 6, 7

Date	Event type	Magnitude or extent	Damage <i>nominal dollars</i>	Deaths, injuries <i>direct only</i>	Location	Flags	Why listed
2025-10-15	Debris Flow		\$15,000 property; \$0 crops (2025 dollars)	0, 0	TAMUNING	new since last plan; within last 5 years	B1-c worst recorded: Debris Flow
2023-05-23	Hurricane (Typhoon), NOAA's event type name	category 4	\$4,000,000,000 property; \$10,000,000 crops, reported for the zone (2023 dollars) (as recorded; larger than this county's annual agriculture value in the National Risk Index (the county or state extension service keeps crop loss records))	0, 0	Storm Events area GUAM (legacy zone code GUZ006), zone-level	within last 5 years	B1-c worst recorded: Hurricane, Tropical Storm, Tropical Depression
2020-11-23	Thunderstorm Wind	49 kt (56 mph) measured gust	\$100,000 property; crops not reported (2020 dollars)	0, 0	ANDERSEN AFB to BARRIGADA		B1-c worst recorded: Thunderstorm Wind
2015-07-11	Coastal Flood		\$1,000,000 property; \$0 crops, reported for the zone (2015 dollars)	0, 0	Storm Events area GUAM (legacy zone code GUZ006), zone-level		B1-c worst recorded: Coastal Flood, Storm Surge/Tide
2011-10-14	Lightning		\$0 property; \$0 crops (2011 dollars)	1, 0	AGANA		deaths or injuries recorded
2009-10-15	High Wind	53 kt (61 mph) measured gust	\$0 property; \$0 crops, reported for the zone (2009 dollars)	0, 0	Storm Events area GUAM (legacy zone code GUZ006), zone-level		B1-c worst recorded: High Wind and Strong Wind
2004-06-27	Flash Flood		\$5,500,000 property; \$500,000 crops (2004 dollars) (as recorded; larger than this county's annual agriculture value in the National Risk Index (the county or state extension service keeps crop loss records))	1, 0	COUNTYWIDE		deaths or injuries recorded
2002-12-08	Hurricane (Typhoon), NOAA's event type name		\$125,000,000 property; crops not reported, reported for the zone (2002 dollars)	1, 300	Storm Events area GUAM (legacy zone code GUZ006), zone-level		deaths or injuries recorded
1999-02-14	Lightning		\$100,000 property; crops not reported (1999 dollars)	0, 0	CENTRAL PORTION		B1-c most damaging: Lightning
1998-03-01	Wildfire		\$120,000 property; crops not reported (1998 dollars)	0, 0	MERIZO		B1-c worst recorded: Wildfire
1998-01-01	Drought		damage not reported	0, 0	Storm Events area GUAM (legacy zone code GUZ006), zone-level		B1-c worst recorded: Drought
1997-08-12	High Wind	speed not recorded	\$300,000 property; \$100,000 crops, reported for the zone (1997 dollars)	0, 0	Storm Events area GUAM (legacy zone code GUZ006), zone-level		B1-c most damaging: High Wind and Strong Wind

The full list is in the Excel file, sheet "B1-d Storm Events history" (176 rows).

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

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

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

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

Probability: FEMA annualized frequency and descriptor per hazard

Sources: 5, 6

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area-weighted, so can be fractional)	NRI period	Location	Note
Coastal Flooding	0.977	events per year at a location (modeled)	about 0.98 per year at a given location in the county	Possible (from Storm Events: 2 of 30 years)	Storm Events records in 2 of 30 years, 1996 to 2025 (6.67%)	not shown	modeled	see B1-f	Descriptor from Storm Events, not NRI.
Cold Wave	0	event-days per year	none modeled		event-days in 0 of 30 years, 1996 to 2025 (0%)	0	2005-11-12 to 2024-11-12 (19 years)	countywide	No Storm Events cold wave record, 1996 to 2025.
Drought		event-days per year		Likely (from Storm Events: 4 of 30 years)	event-days in 4 of 30 years, 1996 to 2025 (13.3%)		2000 to 2025 (25.25 years; D3 and D4 only)	countywide	
Earthquake	0.104	annual probability at a location	chance a given location in the county has at least minor-damage shaking in a year: 10.4%			not shown	modeled	see B1-f	No descriptor (Storm Events does not record earthquakes).
Hail		events per year					1986 to 2023 (38 years)	countywide	NRI publishes no annualized frequency for this hazard in this county.
Heat Wave	0	event-days per year	none modeled		event-days in 0 of 30 years, 1996 to 2025 (0%)	0	2005-11-12 to 2024-11-12 (19 years)	countywide	No Storm Events heat wave record, 1996 to 2025
Hurricane	0.368	events per year	about 1 in 3 years	Likely	FEMA annualized frequency (modeled)	28	1949 to 2024 (Pacific)	see B1-f	NRI counts hurricane and tropical storm tracks passing within storm-force wind range; federal declarations are in B1-d.
Inland Flooding	2.57	event-days per year	about 2.57 days per year	Likely (from Storm Events: 15 of 30 years)	event-days in 15 of 30 years, 1996 to 2025 (50%)	72	1996 to 2023 (28 years)	see B1-f	
Landslide		events per year (modeled)				not shown	modeled	see B1-f	NRI publishes no annualized frequency for this hazard in this county.
Lightning		days per year with a strike				not shown	1995 to 2023 (29 years; CONUS)	countywide	Descriptor not assigned: NRI publishes no lightning frequency for this county.

Hazard	FEMA annualized frequency (modeled) <i>unit per row</i>	Unit	In plain terms	Descriptor	Descriptor basis	NRI events or days in its record period (hail, wind and tornado are area- weighted, so can be fractional)	NRI period	Location	Note
Strong Wind		events per year					1986 to 2023 (38 years)	countywide	NRI publishes no annualized frequency for this hazard in this county.
Tornado		events per year				not shown	1950 to 2023 (EF2+); 1986 to 2023 (EF0-1)	see B1-f	NRI publishes no annualized frequency for this hazard in this county.
Tsunami	0.124	annual probability at the most exposed location (used in place of a county value)	chance at the county's most exposed location in a year: 12.4%		Storm Events records in 0 of 30 years, 1996 to 2025 (0%)	not shown	modeled	see B1-f	No descriptor: no Storm Events record 1996 to 2025
Volcanic Activity		annual probability				not shown	modeled	see B1-f	Not Applicable in NRI for this county; no descriptor.
Wildfire		annual probability at a location		Likely (from Storm Events: 4 of 30 years)	Storm Events records in 4 of 30 years, 1996 to 2025 (13.3%)	not shown	modeled	see B1-f	Descriptor from Storm Events, not NRI.
Winter Weather	0	event-days per year	none modeled		event-days in 0 of 30 years, 1996 to 2025 (0%)	0	2005-11-12 to 2024-11-12 (19 years)	countywide	No Storm Events winter weather record, 1996 to 2025

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.

Descriptor scale used in this packet (defined per unit)

Sources: 5, 6

Unit	Descriptor	Definition
events per year	Highly likely	1 or more per year
events per year	Likely	about once in 1 to 10 years
events per year	Possible	about once in 10 to 100 years
events per year	Unlikely	less than once in 100 years
annual probability	Likely	10% to under 100% chance in a given year
annual probability	Possible	1% to under 10% chance in a given year
annual probability	Unlikely	under 1% chance in a given year
event-days (share of years)	Highly likely	event-days recorded in 90% or more of years
event-days (share of years)	Likely	event-days recorded in 10% to under 90% of years
event-days (share of years)	Possible	event-days recorded in some years but under 10% of years
lightning strike-days	Highly likely	cloud-to-ground strikes on 1 or more days per year

Intensity bands: historical frequency (Storm Events)

Source: 6

Hazard	Band	Years	Events <i>county-coded records</i>	Years in period	Events per year <i>events / years</i>
Hail	1.00-1.99 in	1996 to 2025	0	30	0
Hail	2.00 in+	1996 to 2025	0	30	0
Thunderstorm Wind (counted as NRI Strong Wind)	50-64 kt	1996 to 2025	0	30	0
Thunderstorm Wind (counted as NRI Strong Wind)	65 kt+	1996 to 2025	0	30	0
Thunderstorm Wind (counted as NRI Strong Wind)	unmeasured or below 50 kt	1996 to 2025	1	30	0.0333
Tornado	EF0-1	1996 to 2025	0	30	0
Tornado	EF2-3	1996 to 2025	0	30	0
Tornado	EF4-5	1996 to 2025	0	30	0
Tornado	unrated (EFU)	1996 to 2025	0	30	0

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

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

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

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

Range of census tract risk within the county

Source: 5

Hazard	Tracts <i>rated of all</i>	NRI risk score, 0 to 100			Tracts by rating
		Min	Median	Max	
Coastal Flooding	0 of 56				Insufficient Data 56
Cold Wave	0 of 56				Insufficient Data 56
Drought	0 of 56				Insufficient Data 56
Earthquake	0 of 56				Insufficient Data 56
Hail	0 of 56				Insufficient Data 56
Heat Wave	0 of 56				Insufficient Data 56
Hurricane	0 of 56				Insufficient Data 56
Inland Flooding	0 of 56				Insufficient Data 56
Landslide	0 of 56				Insufficient Data 56
Lightning	0 of 56				Insufficient Data 56
Strong Wind	0 of 56				Insufficient Data 56

Hazard	Tracts <i>rated of all</i>	NRI risk score, 0 to 100			Tracts by rating
		Min	Median	Max	
Tornado	0 of 56				Insufficient Data 56
Tsunami	0 of 56				Not Applicable 29, Insufficient Data 27
Volcanic Activity	0 of 56				Not Applicable 56
Wildfire	0 of 56				Insufficient Data 56
Winter Weather	0 of 56				Insufficient Data 56

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.

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	Notes
			<i>FMA RL and SRL (44 CFR 77.2); repeat- flood, any definition</i>	<i>FEMA records matched by applicant name; federal share obligated, nominal dollars</i>	<i>all years; since its plan</i>	

No rows for this unit.

No city, town, township or county rows in FEMA plan data for this unit; same as county.

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

Local data needed

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

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

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

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

Hazard	Building exposure <i>modeled dollars</i>	Agriculture exposure <i>modeled dollars</i>	Population exposed <i>people</i>	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2024-07-25 <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Coastal Flooding	\$3,551,095,408	n/a	14,009	\$148,211	n/a	\$281	0.00417%				
Cold Wave	\$0	\$0	0	\$0	\$0	\$0					building exposure is 0 in NRI
Drought	n/a	n/a	n/a	n/a	n/a	n/a			\$0		NRI publishes no agriculture exposure for this county
Earthquake	\$45,061,016,098	n/a	153,898	\$20,346,681	n/a	\$6,005,148	0.0452%				
Hail	n/a	n/a	n/a	n/a	n/a	n/a					NRI publishes no building exposure for this county
Heat Wave	\$0	\$0	0	\$0	\$0	\$0					building exposure is 0 in NRI

Hazard	Building exposure <i>modeled dollars</i>	Agriculture exposure <i>modeled dollars</i>	Population exposed <i>people</i>	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2024-07-25 <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Hurricane	\$26,507,788,940	\$381,523	153,310	\$140,265,531	\$6,329	\$8,434,550	0.529%		\$436,500,000	no Public Assistance recorded (3 declarations)	Storm Events damage since the plan includes the zone-level Tropical Storm record of 2026-04-13 (\$436,500,000; as recorded; larger than this county's annual agriculture value in the National Risk Index (the county or state extension service keeps crop loss records)).
Inland Flooding	\$0	\$26,082	7,895	\$0	\$800	\$591,112	n/a (see note)	\$2,500			NRI counts the full building value of any census block with some flood loss; this is not the value of buildings in the floodplain. Use local FIRM overlays for B2-a/B2-b.
Landslide	n/a	n/a	n/a	n/a	n/a	n/a		\$15,000			NRI publishes no building exposure for this county
Lightning	n/a	n/a	n/a	n/a	n/a	n/a					NRI publishes no building exposure for this county

Hazard	Building exposure <i>modeled dollars</i>	Agriculture exposure <i>modeled dollars</i>	Population exposed <i>people</i>	EAL buildings <i>modeled dollars per year</i>	EAL agriculture <i>modeled dollars per year</i>	Cost of expected deaths and injuries <i>FEMA's dollar value per year, not property damage</i>	EAL as % of exposure <i>buildings; agriculture where noted</i>	Storm Events damage since 2024-07-25 <i>county-coded records, property plus crops, nominal dollars</i>	Zone-level damage since plan <i>property plus crops, reported for the zone</i>	Public Assistance since plan <i>nominal dollars; see note</i>	Note
Strong Wind	n/a	n/a	n/a	n/a	n/a	n/a			\$5,000		NRI publishes no building exposure for this county Storm Events damage since the plan includes 1 zone-level Strong Wind record (\$5,000): a NOAA non-thunderstorm wind type, outside NRI's Strong Wind definition.
Tornado	n/a	n/a	n/a	n/a	n/a	n/a					NRI publishes no building exposure for this county
Tsunami	\$3,879,220,117	n/a	1,833	\$413,777	n/a	\$39,342,247	0.0107%				
Volcanic Activity											Not Applicable in NRI for this county
Wildfire	n/a	n/a	n/a	n/a	n/a	n/a					NRI publishes no building exposure for this county
Winter Weather	\$0	\$0	0	\$0	\$0	\$0					building exposure is 0 in NRI

Totals since 2024-07-25 (Storm Events through 2026-06-30): 5 county-coded records, 5 with a damage value recorded (including \$0), \$17,500; 7 zone-level records, 5 with a damage value recorded (including \$0), \$436,505,000 reported for the zone; Public Assistance: none recorded on the 3 counted declarations.

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	153,310
Building value (total, not at risk)	\$26,507,788,940
Agriculture value (total, not at risk)	\$381,523
NRI risk rating (all hazards)	Insufficient Data
Expected annual loss, buildings and agriculture, all hazards	\$161,181,329
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)	\$54,373,338
Social vulnerability rating	Data Unavailable
Community resilience rating	Data Unavailable
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)	1
Repetitive loss, NFIP insurance definition	16	Severe repetitive loss, NFIP insurance definition	1

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 <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
County total	1	1	16	1	16	0	0
of which: Territory of Guam (community ID not in plan data)	1	1	16	1	16	0	0

County repeat-flood properties by occupancy group

Sources: 1, 4

Occupancy group	RL, FMA <i>properties</i>	SRL, FMA <i>properties</i>	RL, NFIP <i>properties</i>	SRL, NFIP <i>properties</i>	Any category <i>properties</i>	Mitigated <i>properties</i>	Currently insured <i>properties</i>
single-family residential	1	1	14	1	14	0	0
2 to 4 unit residential	0	0	1	0	1	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 15 properties are NFIP repetitive loss but not FMA repetitive loss.

Exact counts; no count suppression.

Sources

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

1. FEMA, OpenFEMA HazardMitigationPlanStatuses v1, version 2026-09-29T134039Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/HazardMitigationPlanStatuses> (API)
2. FEMA, OpenFEMA DisasterDeclarationsSummaries v2, version 2026-09-29T162832Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v2/DisasterDeclarationsSummaries> (API)
3. FEMA, OpenFEMA PublicAssistanceFundedProjectsSummaries v1, version 2026-09-29T150754Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/PublicAssistanceFundedProjectsSummaries> (API)
4. FEMA, OpenFEMA NfipMultipleLossProperties v1, version 2026-08-04T164045Z, pulled 2026-09-30, <https://www.fema.gov/api/open/v1/NfipMultipleLossProperties> (API)
5. FEMA, FEMA National Risk Index 1.20.0 (December 2025), county and census tract tables, version 1.20.0, pulled 2026-09-30, https://www.fema.gov/about/reports-and-data/openfema/nri/v120/NRI_Table_Counties.zip (download, 25 MB), https://www.fema.gov/about/reports-and-data/openfema/nri/v120/NRI_Table_CensusTracts.zip (download, 635 MB)
6. NOAA NCEI, NOAA NCEI Storm Events Database, details files (csvfiles v1.0), version c20260918, pulled 2026-09-30, <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>
7. NOAA National Weather Service, NWS county-public forecast zones correlation file, version bp03mr20 to bp16ap26 (11 files; newest bp16ap26), pulled 2026-09-30, <https://www.weather.gov/gis/ZoneCounty>

8. U.S. Census Bureau, Census 2024 Gazetteer, 2020 place by county, CT county-to-cousub crosswalk, version 2024-gazetteer, pulled 2026-09-30, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gazetteer/2024_Gaz_counties_national.zip, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_Gazetteer/2024_Gaz_cousubs_national.zip, https://www2.census.gov/geo/docs/maps-data/data/gazetteer/2024_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_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/reference/codes2020/national_place_by_county2020.txt, https://www2.census.gov/geo/docs/reference/ct_change/ct_cou_to_cousub_crosswalk.xlsx (used to match place names and codes; no table prints its values)

What this packet is and what the plan adds

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

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

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

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Corrections: to report an error, name the packet, the table and what your records show. Contact: contact@hazardplain.org

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