Southwest Arkansas Planning and Development District

HOWARD COUNTY

Multi-Jurisdictional Hazard Mitigation Plan

2026 Update

Prepared to meet the FEMA Local Mitigation Planning Policy Guide (FP-206-21-0002, effective April 11, 2025)

Participating Jurisdictions

Howard County (Unincorporated) | Nashville | Dierks | Mineral Springs | Tollette

Nashville School District | Dierks School District | Mineral Springs School District | Umpire School District

SECTION 1

Planning Process

Plan Introduction

Hazards are an everyday part of life. Floods, tornadoes, wildfires, severe storms, and winter weather are part of living in southwest Arkansas, and the occurrence of these events is largely outside human control. Natural disasters can damage the environment, the local economy, and the people who live and work in Howard County. Nature tends to recover from these events on its own and fairly quickly. The homes, roads, utilities, farms, poultry houses, and public buildings that people depend on do not.

When manmade infrastructure, buildings, and agriculture are caught in a natural disaster, the impact can be severe and the recovery can take significant time and money. In some cases a full recovery is not possible. There may be no way to stop these events from happening, but there are practical, proven ways to reduce the risks they create. Steps taken before an event occurs can greatly reduce the likelihood of a worst case outcome, or at least lessen its magnitude.

Hazard mitigation is any sustained action taken to reduce or eliminate long term risk to life and property from a hazard event. Mitigation is the foundation of emergency management, and it gives communities a way to reduce their vulnerability over the long term rather than simply responding after the damage is done.

Plan Goals and the Disaster Mitigation Act of 2000

The goals of the Howard County Hazard Mitigation Plan are to:

- **Goal 1:** Decrease the potential for death, injury, and economic damage to residents of Howard County caused by exposure to natural hazards.
- **Goal 2:** Create a framework that encourages all levels of government and public and private organizations to undertake mitigation, reduce potential disaster effects, and use mitigation during recovery.
- **Goal 3:** Identify and pursue grant funding for mitigation projects through state and federal programs.
- **Goal 4:** Take steps to protect existing properties from future natural disasters.

This plan was developed to assess the natural hazards that affect Howard County, to determine the mitigation measures that should be put in place, and to outline a strategy for carrying those measures out. The plan is multi-jurisdictional, with a planning area that includes all of unincorporated Howard County and the incorporated municipalities of Nashville, Dierks, Mineral Springs, and Tollette. It also includes the public school districts that serve the county: Nashville School District, Dierks School District, Umpire School District, and Mineral Springs School District.

The official adoption and implementation of a hazard mitigation plan carries real benefits for Howard County and its residents. By identifying problems and workable solutions before a disaster strikes,

participating jurisdictions are in a stronger position to receive pre-disaster and post-disaster funding. The Disaster Mitigation Act of 2000 created a pre-disaster mitigation program and established the requirements for the post-disaster Hazard Mitigation Grant Program (HMGP). It requires that states and communities have a FEMA-approved hazard mitigation plan in place before they can receive post-disaster HMGP funds. Adoption of this plan also supports eligibility for FEMA's Flood Mitigation Assistance (FMA) program and the Building Resilient Infrastructure and Communities (BRIC) program. Most importantly, jurisdictions that plan ahead recover more quickly and more wisely after a disaster.

Purpose

Howard County initiated this hazard mitigation planning process by securing FEMA mitigation grant funding to complete the plan, including a Building Resilient Infrastructure and Communities (BRIC) program approval (EMT-2023-BR-005-0019). Howard County engaged the Southwest Arkansas Planning and Development District (Southwest Arkansas PDD) to author the plan. The Howard County Office of Emergency Management and Southwest Arkansas PDD worked together to involve the county, the cities, the communities, and the school districts in the planning process.

Parts of the Plan

The Howard County Hazard Mitigation Plan is organized into sections that meet FEMA requirements for a local multi-jurisdictional plan. These sections are:

- Planning Process
- Planning Area and Resources
- Hazard Identification and Risk Assessment
- Mitigation Strategy
- Plan Adoption

The plan is accompanied by the following appendices:

- Appendix A - Local Mitigation Plan Review Tool (the FEMA crosswalk showing where each plan requirement is addressed)
- Appendix B - Public Involvement Documentation (public notices, the community survey, meeting records, and sign-in sheets)
- Appendix C - Flood Hazard Maps (the effective FIRM index and the incorporated-community panels)
- Appendix D - Vulnerable Housing Maps (the structure-level vulnerable-housing, housing-age, and bridge-exposure maps)
- Appendix E - Previous Event Data and National Risk Index Tables (the federal disaster declarations, the NOAA Storm Events record, and the FEMA NRI Expected Annual Loss tables)
- Appendix F - Data Sources and References (the primary data sets and technical documents used, and how each was incorporated)

All jurisdictions and school districts listed in this plan participated in the planning process. Each jurisdiction provided a representative to serve on the planning team. When a representative could not attend in person, that jurisdiction asked the Howard County Office of Emergency Management to represent it at committee meetings and then provided information by phone and email. Planning

team members took part in meetings, gathered input from residents of their communities, and made sure jurisdiction-specific information was included in the plan. That input included local knowledge such as which roads flood and where vulnerable populations are located.

Involvement of Local Governments

The planning committee was made up of representatives from each incorporated city, the participating school districts, and members of emergency services and local government in Howard County.

All interested parties, including neighboring communities, counties, and stakeholders, were notified of meetings by email or by public notice placed in the local newspaper and at public locations throughout the planning area. Committee members were individually invited to attend by email or phone.

The Howard County Office of Emergency Management provided the planning team with critical infrastructure locations, multi-jurisdictional risk information, and descriptions of specific events. The County Judge and the planning team identified preventive and educational measures for each hazard, along with the goals to be pursued after adoption. Each jurisdiction discussed how individual hazards affect its own area. Mayors and superintendents completed a questionnaire describing their mitigation priorities, their significant local concerns, and their capability assessments. Fire chiefs contributed mitigation ideas for wildfire, including controlled burns and burn restrictions, and shared their experience with flood-related evacuation. Law enforcement identified the hazards they are most often called about, including the specific roads where residents report flooding. Superintendents provided information on the hazards that most affect their school campuses.

Public participation was sought throughout the process. A community mitigation survey was distributed by QR code and online link to gather residents' input on local hazards and priorities, and eight responses were received from residents across the planning area. Because Howard County is a small, rural planning area, involvement was coordinated primarily through the Office of Emergency Management rather than large group meetings: the Office of Emergency Management worked individually with each participating jurisdiction and school district by phone, email, and one-on-one meetings, and each documented its participation by completing a capabilities and hazard questionnaire. Public notices were posted in advance, and the draft plan is made available for a 30-day public review and comment period at the jurisdiction offices, the Howard County Courthouse, the Nashville public library, and online at southwestar.org/hazards. All public and stakeholder input is documented in Appendix B.

The planning committee for this update consisted of the following representatives. Local officials change with each election cycle, and the committee will be reconstituted at the start of each update. As of June 2026, Brent Pinkerton serves as Howard County Judge.

Jurisdiction / Role	Representative
Howard County Judge	Brent Pinkerton
OEM Coordinator	Roddy Smith Jr.
Mayor of Nashville	Larry Dunaway

Mayor of Dierks	Ronny Cogburn
Mayor of Mineral Springs	Vera Marks
Mayor of Tollette	Brenda Porter
Superintendent, Nashville School District	Doug Graham
Superintendent, Dierks School District	Grover Hill
Superintendent, Mineral Springs School District	Jondavid Amerson
Superintendent, Umpire School District	Mary Lowrey, Ed.D.
County Sheriff	Bryan McJunkins
Fire Chief, Nashville	Justin Thornton
Police Chief, Nashville	Amy Marion
Police Chief, Dierks	John McKee
Police Chief, Mineral Springs	Francisco Mercado
Fire Chief, Dierks	Chase Quinn
Fire Chief, Mineral Springs	Chris Hostetler
Fire Chief, Tollette	Alan Langston

Neighboring Community Involvement

Neighboring jurisdictions and counties were invited to participate during the public comment period and were notified of public meetings. Howard County is bordered by Polk County to the north, Montgomery and Pike counties to the east, Hempstead County to the southeast, Little River County to the south, and Sevier County to the west, and coordination with these neighbors is built into the plan maintenance process.

The planning process also sought input from private-sector and institutional stakeholders whose facilities and workforce are significant assets at risk in the county. The major employers (Tyson Foods, Pilgrim's Pride, Weyerhaeuser, and CertainTeed), Howard Memorial Hospital, and the University of Arkansas Cossatot (the local community college) were invited to review the draft plan and to provide comment through the public review process, and their facilities are reflected in the critical-infrastructure and vulnerability analyses.

The planning committee also used several technical documents to guide its work, including:

- The **Arkansas Hazard Mitigation Plan**, used as a guidance tool throughout development.
- The **Howard County Emergency Operations Plan**, used to understand how the county responds to emergencies and to identify critical facilities.
- **Southwest Arkansas PDD's Comprehensive Economic Development Strategy (CEDS)**, used to review regional disaster resilience priorities during the mitigation strategy process.
- The **floodplain management ordinances** of Howard County, Nashville, Dierks, and Mineral Springs and the **effective FEMA Flood Insurance Rate Maps** (DFIRM 05061C, effective December 3, 2010), reviewed for the flooding and NFIP analysis.

- The **USACE National Inventory of Dams** and the **FEMA National Flood Hazard Layer**, reviewed for the dam, levee, and floodplain analysis.
- The **CDC/ATSDR Social Vulnerability Index (2022)** and the **USDA Forest Service Wildfire Risk to Communities** data, reviewed for the vulnerability and wildfire analyses.

Coordination with the State of Arkansas Hazard Mitigation Plan

This plan was developed in coordination with the 2023 State of Arkansas Hazard Mitigation Plan, approved by FEMA on September 6, 2023 and maintained by the Arkansas Division of Emergency Management (ADEM). The Hazard Mitigation Planning Committee reviewed the State plan's hazard identification and risk assessment, together with the hazard list ADEM publishes for Arkansas, and confirmed that the hazards profiled in Section 3 of this plan align with the State's natural hazard set. This coordination satisfies 44 CFR 201.6(c)(4) and the requirement in the Federal Hazard Mitigation Grant Memorandum of Understanding between the County and ADEM that the natural hazards assessed by a local plan be coordinated with the current FEMA-approved State Hazard Mitigation Plan.

The natural hazards the State identifies for Arkansas are dam and levee failure, drought, earthquake, flood, landslide, severe thunderstorm, severe winter weather, tornado, and wildfire. Every one of these except landslide is profiled in Section 3 of this plan: dam and levee failure, drought, flooding, earthquake, thunderstorms (including lightning, hail, and severe thunderstorm wind), tornado, wildfire, and winter storms. This plan also profiles extreme heat, which the committee added on the strength of the county's recorded heat-event history and the FEMA National Risk Index heat-wave loss estimate for Howard County.

Landslide was considered by the committee and screened out of the profiles. The FEMA National Risk Index (December 2025) reports no modeled landslide expected annual loss for Howard County, and the county lies outside the Ouachita and Ozark terrain where Arkansas landslide activity is concentrated. The committee will revisit this determination at the five-year update if new susceptibility data becomes available. The non-natural hazards the State tracks (hazardous materials, nuclear events, terrorism, and major disease outbreak) fall outside the scope of a natural hazard mitigation plan under 44 CFR 201.6 and are addressed in the county Emergency Operations Plan.

The mitigation goals in Section 4 were reviewed against the State plan's mitigation goals for consistency. The actions carried in the mitigation strategy support the State's direction while reflecting the hazards, infrastructure, and jurisdictions specific to Howard County rather than restating statewide priorities.

Plan Maintenance Process

Continuing Public Participation

Howard County is committed to involving the public in the ongoing update of this plan. Members of the public are able to comment on the plan and provide feedback at any time. The public is invited to participate through public notices posted at sites throughout the planning area and online. As a concrete mechanism, the Office of Emergency Management places a standing hazard-mitigation update item on the agenda of at least one regularly scheduled Quorum Court meeting each year, at

which the public may comment on the plan and its progress, and posts the current plan and a public comment link on the county page at southwestar.org. Comments received between updates are logged by the Office of Emergency Management and considered at the annual review.

Copies of the Howard County Hazard Mitigation Plan will be kept at the Nashville, Dierks, Mineral Springs, and Tollette city and town halls, at the offices of the Nashville, Dierks, Mineral Springs, and Umpire School Districts, at the Howard County Courthouse in Nashville, and at the public library in Nashville. The plan lists the email address and phone number of the Howard County Office of Emergency Management Coordinator, who is the primary point of contact for all questions about the plan.

Monitoring, Evaluating, and Updating the Plan

Howard County has established a process to monitor, evaluate, and update this plan annually, with a full re-evaluation every five years. The county will maintain a Hazard Mitigation Planning Committee built from the existing committee and current officials. The committee includes the mayors, the County Judge, law enforcement and fire service officials, the participating school superintendents, the tax assessor, and the Office of Emergency Management Coordinator, who serves as committee leader. The leader is responsible for convening the committee, setting meeting dates, and ensuring each jurisdiction is represented.

The committee will track hazard events as they occur and keep up with the needs of each jurisdiction through annual meetings open to the public. Mayors are responsible for their respective cities, superintendents for their school districts, and the Office of Emergency Management for the county and for leading the committee. Monitoring is carried out by collecting updates from each jurisdiction, and effectiveness is measured by the number of mitigation actions in progress and completed. The Office of Emergency Management maintains a working record of new disasters, major changes in the planning area, and anything else that could affect the plan, and incorporates that information at each review.

Planning Mechanisms

When carrying out the plan, it is important to understand how each jurisdiction's internal processes work. For all participating jurisdictions, the process of passing a resolution is the same. The need for a proposed resolution is brought before the County Judge or Mayor, discussed, and if needed the attorney for that jurisdiction prepares the resolution. The completed resolution is then brought before the full Quorum Court or City Council for approval. If approved, it is entered in the Official Ordinance and Resolution Book as a permanent record at the Howard County Courthouse.

For the Nashville, Dierks, Mineral Springs, and Umpire School Districts, a resolution is brought before the school board by the superintendent and passed by majority vote.

The process for adding budget line items is also consistent across jurisdictions. A proposed item is presented to the Quorum Court or City Council budget committee. If the committee approves it, the item is added to the proposed budget, which is then presented to the full body for a vote. For the school districts, the budget is typically passed in August or September, then submitted to the state for approval.

Each jurisdiction will review this plan when adopting new building codes or revising existing ones, and each jurisdiction designates a person to seek out potential mitigation projects, whether through existing programs that need additional funding or new projects for which funding becomes available. For Howard County, the County Judge and the Office of Emergency Management share responsibility for identifying mitigation projects. In each city, the Mayor and City Council are responsible for seeking out projects and ensuring the plan is implemented.

The governing bodies meet on a regular schedule, which sets the calendar for adopting resolutions and budget items: the Howard County Quorum Court meets the third Monday of each month, the Nashville City Council the fourth Monday, the Dierks and Mineral Springs City Councils the second Monday, and the Tollette Town Council the second Tuesday.

Each participant integrates this plan into a specific existing mechanism. Howard County incorporates the plan's risk assessment and actions into the county Emergency Operations Plan and its floodplain management program. The Cities of Nashville, Dierks, and Mineral Springs and the Town of Tollette reference the plan when updating their floodplain ordinances, annual budgets, and any building or subdivision regulations. The Nashville, Dierks, Mineral Springs, and Umpire School Districts incorporate the plan's findings into their Emergency Operations and campus safety plans. The official named for each participant in the committee roster is responsible for carrying out this integration and reporting progress at the annual review.

Annual Review Meeting

During the annual review meeting, the committee will:

- Update the plan by adding any events or disasters that occurred in the previous year.
- Discuss events that may have changed the vulnerability of any jurisdiction and review the related hazards.
- Receive a status report from each jurisdiction on its mitigation actions.
- Re-evaluate the mitigation actions to determine the effectiveness of each strategy.
- Update the mitigation strategy based on that re-evaluation and on projects completed.

After the annual meeting, the Office of Emergency Management has three months to update the plan before sending it to the planning committee and the State Hazard Mitigation Officer. All documentation from the annual meetings and any revisions is kept by the Office of Emergency Management.

Five-Year Re-evaluation Meeting

At the five-year re-evaluation, the committee will address all items covered in the annual meeting, and will also:

- Refresh demographic information and data.
- Add any new ordinances and codes that were created.
- Update the risk assessment.
- Add new mitigation strategies chosen by each jurisdiction.
- Review jurisdiction priority changes for each strategy.
- Account for conditions that may change risk, such as population change or observed climate trends.

After the five-year re-evaluation, the Office of Emergency Management updates the plan and submits it to the Arkansas Division of Emergency Management (ADEM) and FEMA for review. A copy of the FEMA-approved plan will be made available on the county website and at southwestar.org.

Overall Update

This plan is a full update of the previous Howard County Hazard Mitigation Plan, which was prepared by Southwest Arkansas PDD and is now expired. Since the previous plan, the planning area has continued to experience federally declared disasters, including severe storms, tornadoes, flooding, and winter storms, the most recent being the January 2026 severe winter storm (EM-3636-AR) and the April 2025 severe storms, tornadoes, and flooding (EM-3627-AR). This update corrects and refreshes the demographic data, the jurisdiction roster, the hazard profiles, and the mitigation strategy. The previous plan contained at least one table carried over from a neighboring county (a winter-storm action table listing the Little River County communities of Ashdown, Foreman, Ogden, Wilton, and Winthrop); that material has been removed and replaced with Howard County information throughout. The previous plan had expired and was not actively integrated with other planning mechanisms; this update is intended to be incorporated into the county Emergency Operations Plan and each jurisdiction's planning process going forward.

Changes in development since the previous plan. Howard County has seen little new large-scale development, and its population has remained essentially flat (12,785 at the 2020 Census). The most significant change was the closure of the Husqvarna outdoor-products plant in Nashville at the end of 2024, which removed roughly 700 manufacturing jobs and left a large industrial site available for reuse. In 2025 that reuse began: Cantex Inc., a Fort Worth-based manufacturer of American-made electrical conduit, fittings, and boxes, acquired the 350,000-square-foot warehouse portion of the former Husqvarna complex and announced a $120 million investment and more than 100 new jobs, with operations beginning in late 2025. The 300,000-square-foot manufacturing building remains available for a future tenant, and the county's Developing Howard County economic-development group, formed in response to the closure, led the recruitment of Cantex. Separately, Howard County is making measurable progress on broadband: federal and state programs (the BEAD program and the state ARConnect initiative) and cooperative fiber providers such as Southwest Arkansas Telephone Cooperative and Four States Fiber are extending high-speed service into rural areas that previously lacked reliable service. In the education sector, the Mineral Springs School District consolidated its separate campuses into a single new 120,000-square-foot K-12 campus that opened for the 2019 school year, and the Umpire School District in the northwest of the county has re-established itself as an independent K-12 district and now participates in this plan. No major new residential subdivisions or commercial developments have been added within the mapped Special Flood Hazard Area, and the county's manufactured-housing stock (a key vulnerability) is essentially unchanged. Because development has not materially increased the county's hazard exposure, the vulnerability analysis and mitigation actions in this update remain applicable.

SECTION 2

Planning Area and Resources

Planning Area Overview

Howard County is located in southwest Arkansas, at the transition between the foothills of the Ouachita Mountains in the north and the Gulf Coastal Plain in the south. The county covers approximately 587 square miles and is bordered by Polk County to the north, Montgomery and Pike counties to the east, Hempstead County to the southeast, Little River County to the south, and Sevier County to the west. The county is drained by the Cossatot River, the Saline River (the "Saline River of the South"), the Little Missouri River, and Rolling Fork. The county seat and largest city is Nashville, long known as the "Peach Capital" of Arkansas for the orchards that once defined its economy.

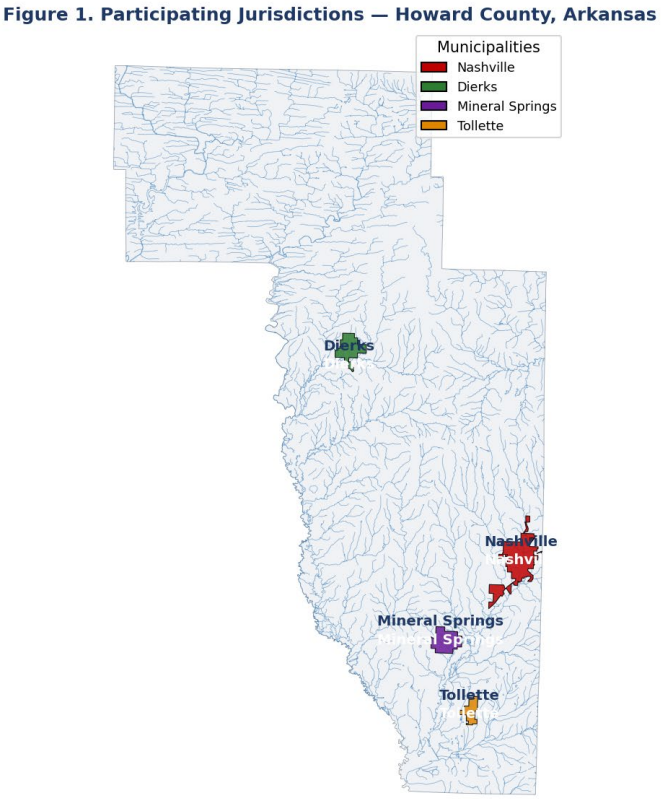
As of the 2020 Census, Howard County had a population of 12,785, essentially flat to slightly down from the prior decade. The county's economy is anchored by poultry processing, timber and wood products, manufacturing, agriculture, and the public sector. Major employers include Tyson Foods and Pilgrim's Pride (poultry processing), Weyerhaeuser and CertainTeed (timber and building products), the Coca-Cola and Dr Pepper bottling operations, Howard Memorial Hospital, and the Nashville School District. The closure of the Husqvarna outdoor-products plant in Nashville at the end of 2024, which eliminated roughly 700 jobs, was a significant economic blow to the county and is relevant to its resilience and recovery capacity.

Jurisdiction	2020 Population	Land Area (sq mi)	Elevation (ft)
Howard County	12,785	587.0	n/a
Nashville (county seat)	3,901	4.97	358
Mineral Springs	1,085	1.86	358
Dierks	916	1.63	442
Tollette	185	0.49	364

Population from the 2020 U.S. Census; land area and elevation from the U.S. Census Gazetteer / GNIS and should be confirmed at adoption. Nashville is the county seat and by far the largest jurisdiction. Dierks lost population between 2010 (1,133) and 2020 (916). Several recorded hazard events also reference unincorporated communities such as Center Point, Schaal, Rosedale, and Umpire. The FEMA National Risk Index (Section 3) uses a modeled county population of 12,764; the 2020 U.S. Census count of 12,785 is the figure of record used throughout this plan.

Figure 2-1. Howard County, Arkansas — General Location Map

Figure 2-1. Howard County, Arkansas - general location map, showing the county seat at Nashville, the incorporated cities, the major rivers, and the neighboring counties.



County boundary and municipal limits from the effective Howard County FIRM (DFIRM 05061C, eff. 12/03/2010). Blue lines are mapped streams (Cossatot, Saline, Little Missouri rivers and tributaries).

Figure 2-2. Participating jurisdictions of Howard County. Nashville (county seat) anchors the center of the county; Dierks sits in the northwest on the Saline River, Mineral Springs in the south, and Tollette in the south-central county.

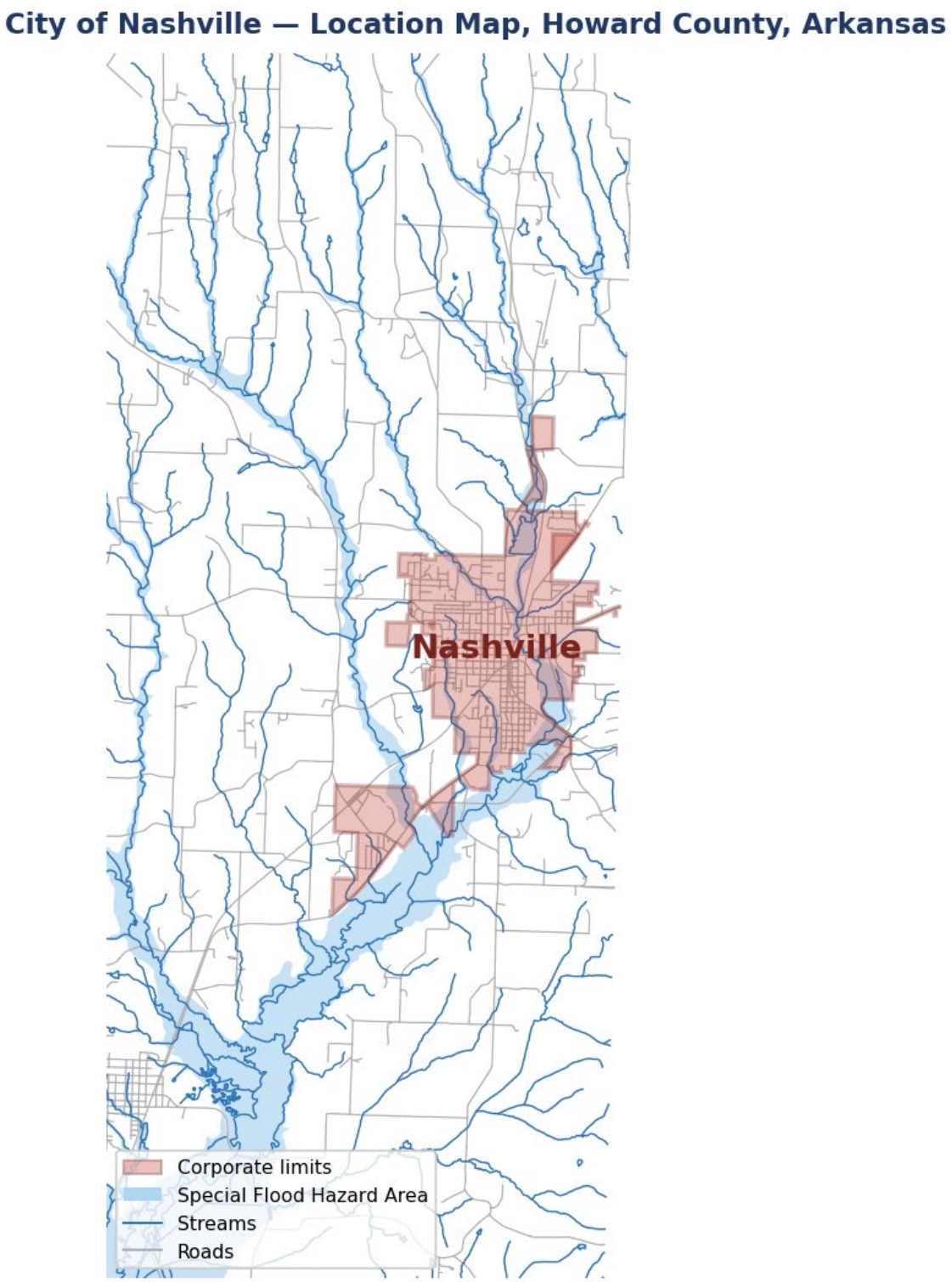


Figure 2-3. City of Nashville location map (Howard County). Corporate limits are shown over roads, streams, and the Special Flood Hazard Area.

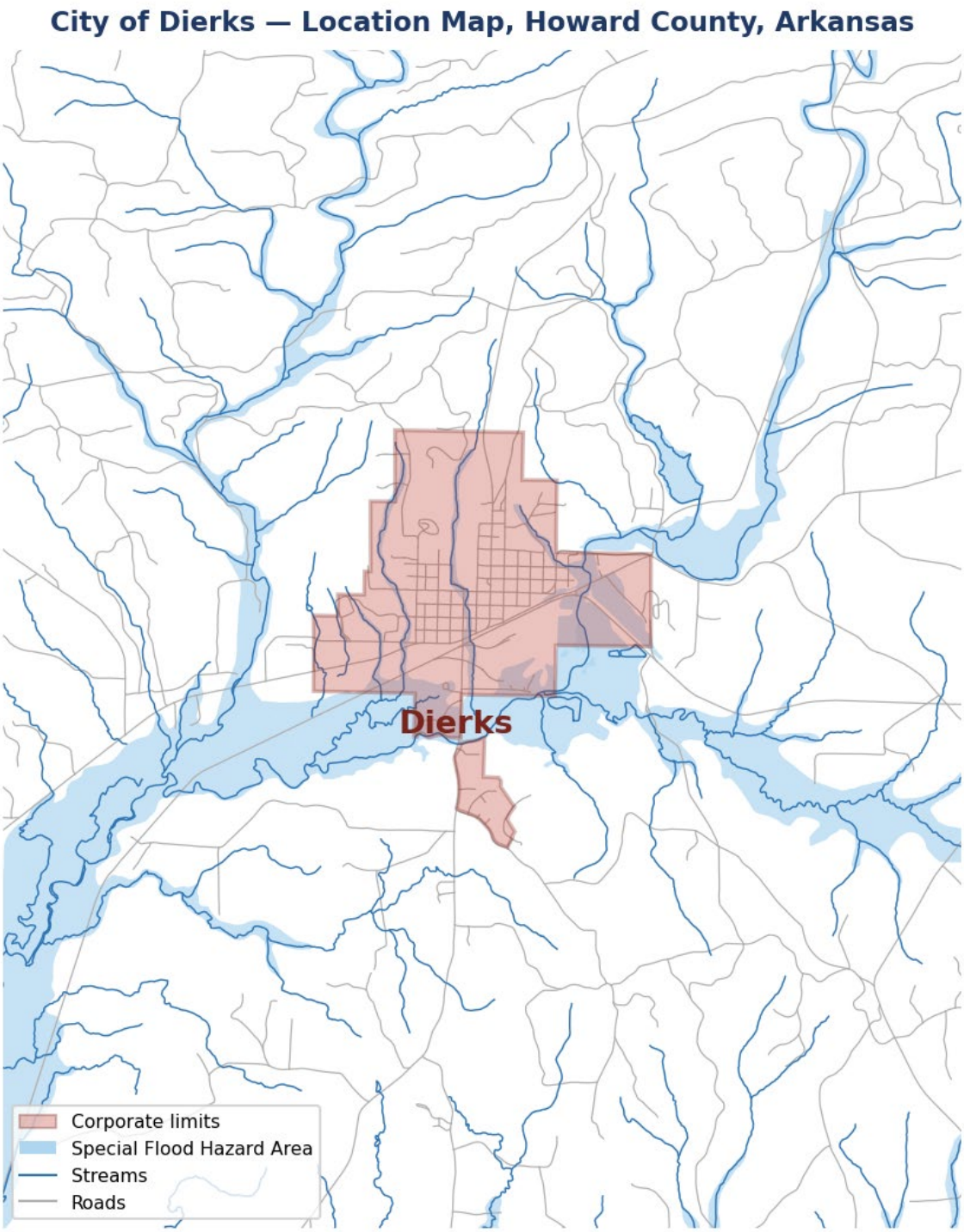


Figure 2-4. City of Dierks location map (Howard County), on the Saline River below Dierks Lake.

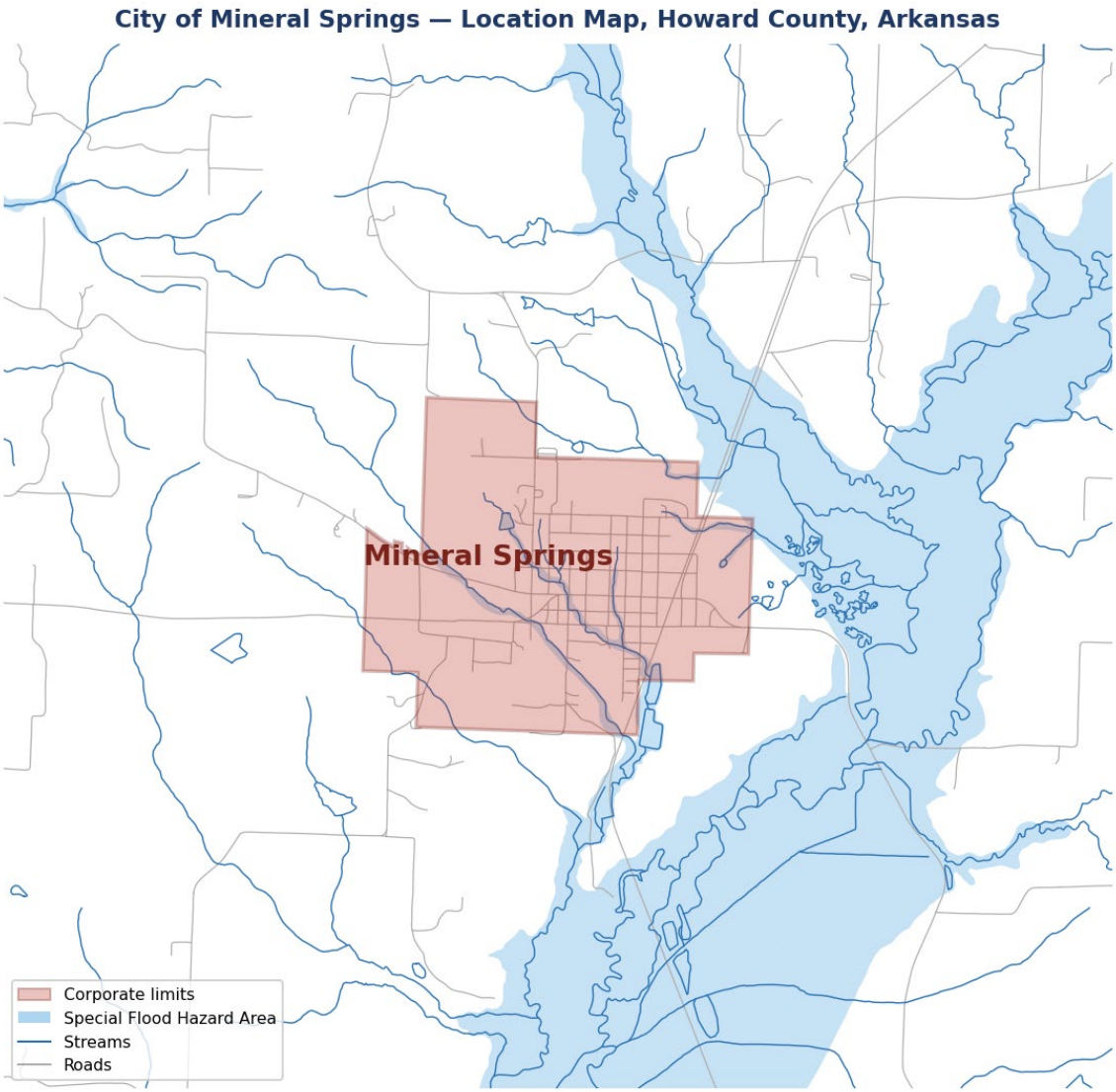


Figure 2-5. City of Mineral Springs location map (Howard County).

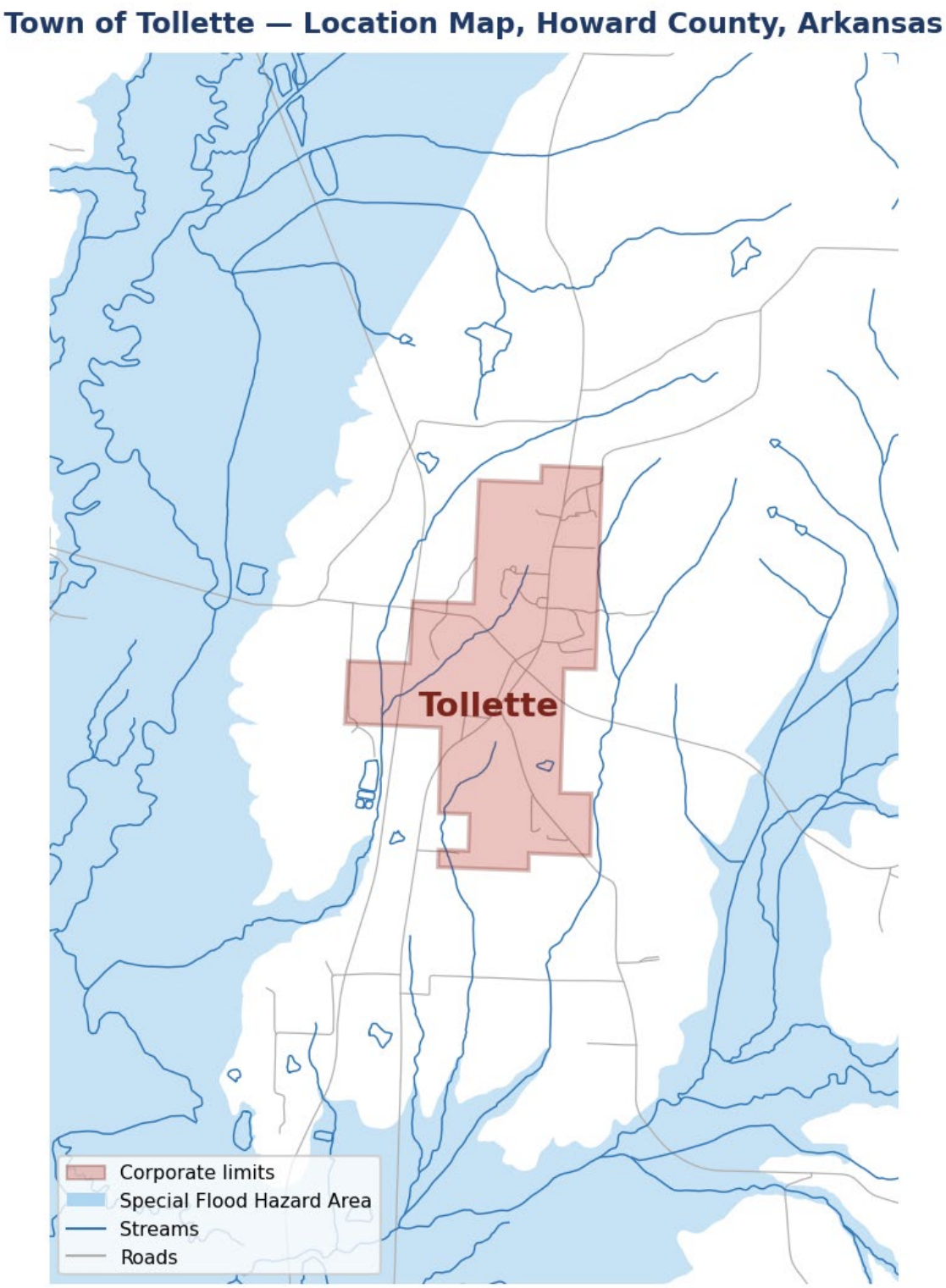


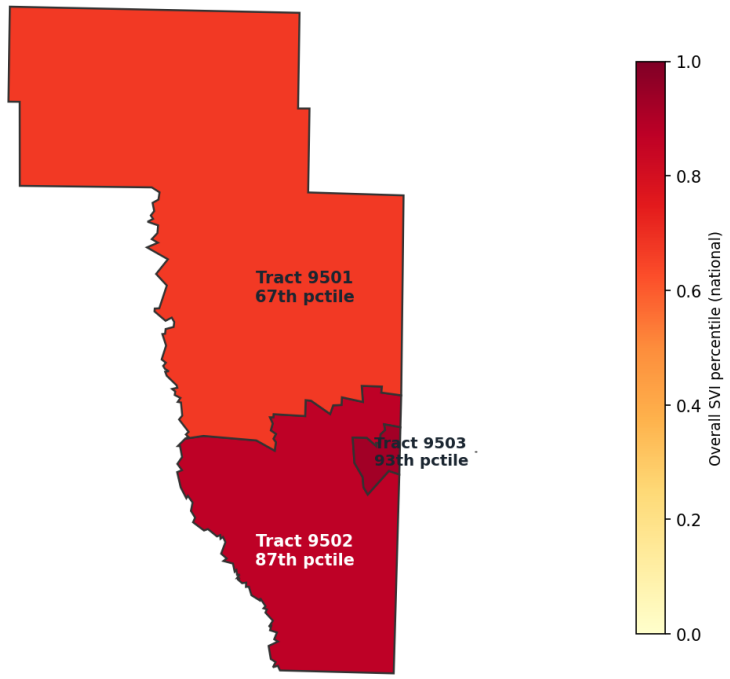
Figure 2-6. Town of Tollette location map (Howard County).

Social Vulnerability and Vulnerable Populations

The FEMA National Risk Index (NRI, December 2025) rates Howard County's overall **Social Vulnerability as Very High** and its **Community Resilience as Very Low**, even though its modeled overall Expected Annual Loss rating is Very Low. The low loss rating mainly reflects the county's small population and building stock, not a low frequency of hazards. The combination of real hazard exposure, very high social vulnerability, and very low resilience means residents here are less able to prepare for, respond to, and recover from disasters than residents of a wealthier or larger community would be. This is central to the case for mitigation investment in Howard County, and it cuts across every hazard profiled in Section 3 rather than belonging to any single one.

The CDC/ATSDR Social Vulnerability Index (SVI 2022) confirms and localizes this picture. The SVI ranks every U.S. census tract from 0 to 1 on 16 social factors grouped into four themes: socioeconomic status; household characteristics (age, disability, single-parent households); racial and ethnic minority status; and housing type and transportation. Howard County's three census tracts all rank in the upper third of U.S. tracts for overall vulnerability, at the 67th, 87th, and 93rd national percentiles. The two southern tracts, which cover Nashville, Mineral Springs, and Tollette, are the most vulnerable.

Figure 2. CDC/ATSDR Social Vulnerability Index by Census Tract
Howard County, Arkansas (SVI 2022)



Higher percentile = more socially vulnerable relative to all U.S. census tracts. All three Howard County tracts rank above the 67th national percentile. Source: CDC/ATSDR SVI 2022.

Figure 2-7. CDC/ATSDR Social Vulnerability Index (2022) by census tract for Howard County. All three tracts rank above the 67th national percentile; the two southern tracts (covering Nashville, Mineral Springs, and Tollette) are the most socially vulnerable.

The strongest driver of the county's vulnerability is the Household Characteristics theme, which ranks at the 90th national percentile or higher in all three tracts, reflecting a population with high shares of older adults, people with disabilities, and children. Socioeconomic vulnerability (poverty

and income) is also high. The table below summarizes the key indicators from the SVI and the 2018-2022 American Community Survey.

Indicator	Tract 9501 (north)	Tract 9502 (south)	Tract 9503 (Nashville)	Why it matters for hazards
Overall SVI percentile	67th	87th	93rd	Higher means harder to prepare, respond, and recover
Persons age 65 and older	18.2%	17.1%	19.1%	Mobility, medical, heat/cold and outage risk
Persons with a disability	22.9%	15.9%	17.1%	Evacuation and sheltering needs
Below 150% of poverty	31.8%	25.5%	29.2%	Less ability to prepare or rebuild
Mobile and manufactured homes	26.9%	20.5%	4.5%	Extreme wind, tornado, and ice vulnerability
Households with no vehicle	2.2%	3.2%	7.9%	Evacuation difficulty
Speaks English less than well	0.5%	2.1%	6.0%	Warning and outreach barriers
Racial and ethnic minority	4.7%	51.4%	51.4%	Potential language and access barriers

Source: CDC/ATSDR Social Vulnerability Index 2022 and the 2018-2022 American Community Survey.

Several patterns matter for mitigation. More than one in four homes in the rural northern tract (9501) is a manufactured or mobile home, the housing type most likely to be destroyed by tornado, severe wind, and ice loads, which directly amplifies those hazard profiles. The Nashville tract (9503) combines the highest overall vulnerability with the highest shares of carless households and residents with limited English, which complicates evacuation and warning. Across all tracts, the large older-adult and disabled populations are the residents most at risk during the multi-day power outages typical of the county's ice storms and severe thunderstorms. The recent loss of roughly 700 manufacturing jobs at the Husqvarna plant adds economic stress that further reduces the county's recovery capacity. These findings are carried into the per-jurisdiction vulnerability narratives in Section 3 and into the mitigation actions in Section 4 (warming and cooling centers, safe rooms, NOAA Weather Radios, backup generators, and targeted public outreach).

Vulnerable Housing (Structure-Level Analysis)

The social-vulnerability picture above is drawn at the census-tract scale. To locate the county's most vulnerable housing at the individual-structure scale, the planning team analyzed the USACE National Structure Inventory (NSI 2022), which carries a record for every building in the county with its

occupancy type, replacement value, flood zone, and estimated nighttime occupancy. Each of the county's 8,980 residential structures was tagged to its jurisdiction using the effective FIRM political-area boundaries, then flagged on four measures: manufactured housing (NSI type RES2), low structure value (the bottom fifth of residential values, at or below $89,744), location in the mapped Special Flood Hazard Area (SFHA), and an elderly resident present at night. The composite "vulnerable housing" flag captures any structure that is manufactured or low-value; the flood and elderly measures are then overlaid on top of it.

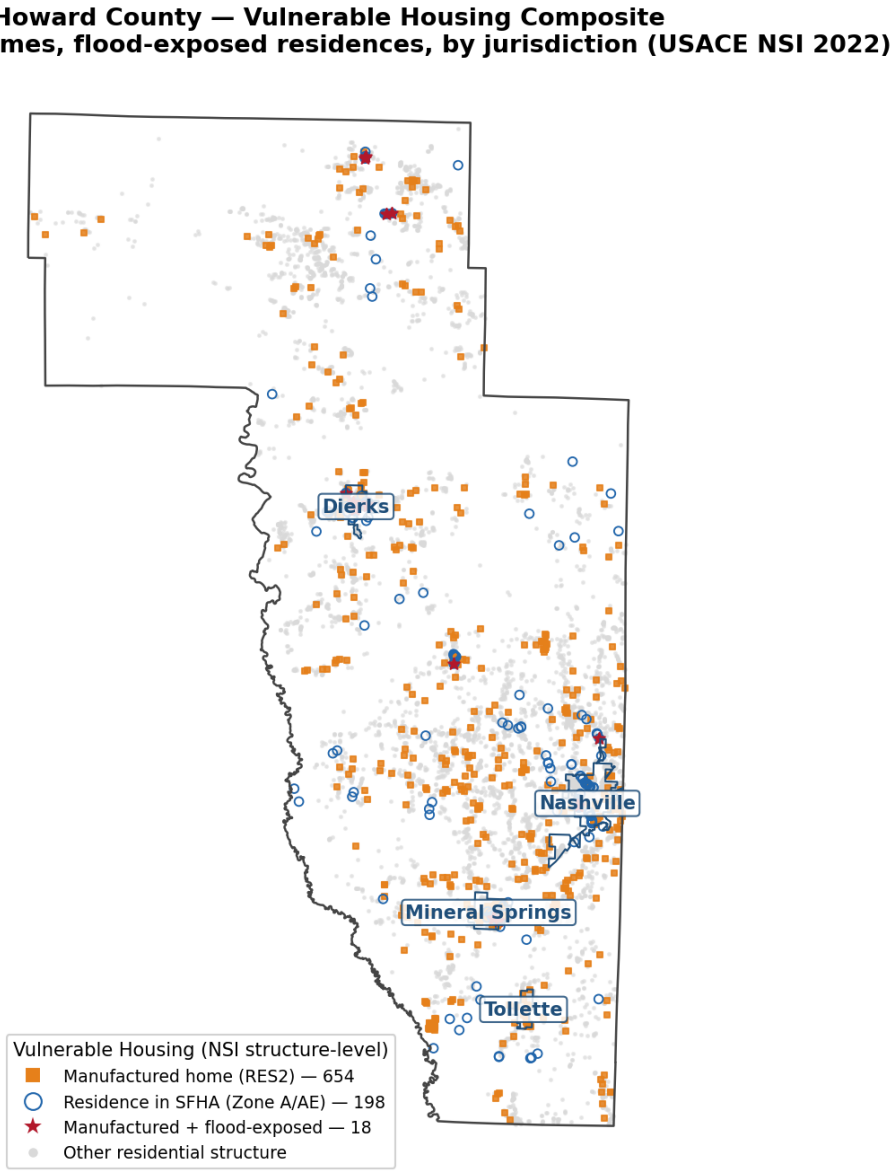


Figure 2-7b. Vulnerable housing in Howard County at the structure level (USACE National Structure Inventory 2022). Orange squares are manufactured homes; blue circles are residences in the mapped Special Flood Hazard Area; red stars are structures that are both. Manufactured housing concentrates in Mineral Springs, Dierks, and the rural county, while flood-exposed residences cluster along Mine Creek at Nashville and the Saline River at Dierks.

Source: USACE National Structure Inventory 2022, tagged to jurisdiction via the effective Howard County FIRM (DFIRM 05061C) political boundaries. "Composite vulnerable" = manufactured or bottom-quintile structure value.

The pattern is not uniform across the county, and it is exactly the pattern that shapes the per-jurisdiction hazard narratives in Section 3. Manufactured housing is a rural and small-town phenomenon. It makes up 17.1 percent of residences in Mineral Springs, 12.3 percent in Dierks, and 9.6 percent in Tollette, against just 1.8 percent in Nashville, the county seat. These are the structures most likely to be destroyed by tornado, severe thunderstorm wind, and ice, and most likely to shift off their piers in the rare felt earthquake, so the wind, tornado, winter-storm, and earthquake profiles carry their highest life-safety weight in the small towns and the countryside rather than in Nashville. The NSI's RES2 flag is a conservative, model-based count (654 structures); the American Community Survey reports 1,069 mobile-home housing units countywide (17.3 percent), so the true manufactured stock is larger than the RES2 flag alone. The NSI is used here for its structure-level geography and its flood and elderly overlays; the ACS is used for countywide magnitude. Both point the same direction. Manufactured-home replacement-value exposure is about $68.7 million, of which roughly $55.6 million sits in the scattered rural county.

Nashville is the mirror image. With almost no manufactured housing, its vulnerability is instead older construction and flood exposure: about 45 percent of the housing in the Nashville tract predates 1970 (older masonry and frame stock), and Nashville carries the largest count of residences in the mapped floodplain (65) because of urban drainage along Mine Creek. This is why the earthquake and flash-flood narratives treat Nashville differently from the manufactured-home towns.

Two overlays sharpen the picture. Flood exposure: 198 residences sit in the mapped SFHA, and 18 of them are manufactured homes, a double exposure concentrated in the rural county and Dierks, where a manufactured home in the floodplain is both the most flood-prone and the most flood-fragile housing type. Elderly occupancy: 2,164 residences have a resident aged 65 or older present at night, and 473 of those are also manufactured or low-value, the households least able to evacuate a floodplain, ride out a multi-day winter outage, or repair wind damage. The full set of jurisdiction map panels, the housing-age map, and the bridge-exposure map are provided in Appendix D (Vulnerable Housing Maps).

NFIP Participation

The National Flood Insurance Program (NFIP) provides affordable flood insurance to property owners in flood-prone areas and encourages communities to adopt and enforce floodplain management regulations that reduce the impact of flooding on public and private structures. Participation helps reduce the long-term cost of flooding and supports recovery after a flood event.

Howard County and three of its four municipalities participate in the NFIP. The countywide Flood Insurance Study (FIS) and the effective Flood Insurance Rate Maps (FIRMs) for Howard County and incorporated areas carry an effective date of **December 3, 2010**. The county's NFIP participation, community identification numbers, and the floodplain administrator for each jurisdiction are summarized in the capability assessments below. The **Town of Tollette does not currently participate in the NFIP**; joining the program is identified as a mitigation action. Neither Howard County nor any of its communities currently participate in the Community Rating System (CRS);

joining the CRS is identified as a potential future action. According to the Arkansas Natural Resources Division, there are no identified repetitive loss properties within the planning area; this should be reconfirmed at adoption. The FEMA National Flood Insurance Program claims record shows 26 flood insurance claims in Howard County from 1982 through 2019, totaling approximately $162,000 in paid losses, the largest single claim (about $42,000) resulting from the 2010 flood. This is a modest claims history and, consistent with the Natural Resources Division finding, includes no repetitive-loss properties; current policies-in-force counts are available from the FEMA NFIP statistics and should be added at adoption.

The community identification (CID) numbers, participation status, and floodplain administrator for each jurisdiction are summarized below.

Jurisdiction	NFIP CID	Participation Status	Floodplain Administrator
Howard County	050438	Participating (joined 6/7/1977)	Office of Emergency Management / County Floodplain Manager
City of Nashville	050089	Participating (joined 11/16/1973)	City public works / water superintendent
City of Dierks	050320	Participating (joined 2/14/1975)	City water superintendent
City of Mineral Springs	050349	Participating (joined 2/21/1975)	City water superintendent
Town of Tollette	050528	Not participating (joining the NFIP is a mitigation action)	To be designated on joining

Continued NFIP compliance. Howard County and the participating municipalities of Nashville, Dierks, and Mineral Springs will maintain compliance with the National Flood Insurance Program by (1) continuing to enforce their adopted floodplain management ordinances consistent with 44 CFR 60.3; (2) administering floodplain development permits within the Special Flood Hazard Area; (3) applying the 50 percent substantial-improvement and substantial-damage standard; (4) keeping the effective FIRM (December 3, 2010) as the regulatory map of record; and (5) maintaining a designated floodplain administrator in each jurisdiction, as listed above. Continued NFIP compliance is a standing commitment of this plan. The Town of Tollette, which does not participate, is addressed through the "Join the National Flood Insurance Program" action in Section 4.

> **Data note:** Community identification (CID) numbers and current participation status shown are drawn from the effective Howard County FIRM database (DFIRM 05061C) and should be reconfirmed against the FEMA Community Status Book for Arkansas (https://www.fema.gov/cis/AR.html) at adoption.

Capabilities Assessment

A capability assessment identifies the authorities, policies, programs, staff, and resources each jurisdiction can bring to bear on hazard mitigation. The tables below summarize the regulatory and administrative capabilities reported by each participating jurisdiction. Each assessment also identifies where that jurisdiction can expand or improve its capabilities. In general, the county and its municipalities can strengthen mitigation capability by adopting or updating floodplain, building, and land-use regulations, by pursuing staff training in floodplain administration and grant management, and by drawing on the regional planning, CEDS data, and grant-writing services of Southwest Arkansas PDD. These improvement opportunities are noted in each jurisdiction's assessment below and are carried into the mitigation actions in Section 4.

Howard County

Howard County is a member of the National Flood Insurance Program (Community ID 050438) and joined the NFIP on June 7, 1977. The Office of Emergency Management serves as the county floodplain manager. The county is in good standing with the NFIP, with no outstanding compliance issues, and maintains compliance by monitoring construction, location, and changes in the use of structures or land through its floodplain ordinance.

Capability	Status	Capability	Status
Stormwater Management	Yes	Erosion Management	Yes
Stream Management	Yes	Floodplain Management	Yes
Zoning	No	Building Codes	No
Subdivision Regulation	No	Land Use Plan	No
Elevation Certificates	Yes	Flood Insurance Claims	No

Utilities serving the unincorporated county include AEP/SWEPCO (Southwestern Electric Power Company), Rich Mountain Electric Cooperative, and South Central Arkansas Electric Cooperative for power; municipal systems and rural water associations for water; municipal systems for wastewater; Summit Utilities for natural gas; and Windstream (now branded Kinetic) for telephone, with fiber broadband expanding through Four States Fiber and other providers under the state and federal broadband programs. Howard County could strengthen its capabilities by adopting additional land use and building regulations and by providing additional training to staff. The county intends to integrate this Hazard Mitigation Plan with its existing Emergency Operations Plan. The county benefits from the Office of Emergency Management, courthouse staff, the chamber of commerce, and the economic-development and grant-writing services provided by Southwest Arkansas PDD, and it operates the Regroup mass-notification system to alert residents during emergencies (Regroup replaced the county's previous CodeRED service in January 2026).

City of Nashville

Nashville is the county seat and the largest city in Howard County, with a 2020 population of 3,901. It is a member of the NFIP (Community ID 050089) and joined the program on November 16, 1973. The Mayor oversees the floodplain program; the floodplain coordinator is the city public works/water superintendent. The city has no repetitive flood loss claims and is in good standing with the NFIP.

Capability	Status	Capability	Status
Stormwater Management	Yes	Erosion Management	Yes
Stream Management	Yes	Floodplain Management	Yes
Zoning	Yes	Building Codes	Yes
Subdivision Regulation	Yes	Land Use Plan	No
Elevation Certificates	Yes	Flood Insurance Claims	No

As the regional hub, Nashville has the most developed local-government capacity in the county, including a police department, fire department, water and wastewater utilities, and the county's primary commercial and medical infrastructure (Howard Memorial Hospital). Power is provided by AEP/SWEPCO, water and wastewater by the City of Nashville, natural gas by Summit Utilities, and telephone and broadband by Windstream (Kinetic) and Four States Fiber. Nashville could strengthen its capabilities by completing or updating a land use plan and by continuing staff training. The city plans to integrate this plan with its existing emergency plans. The city's 2026 capability review confirms a zoning ordinance, subdivision regulations, and a floodplain management ordinance (each in place since 1975), current building codes (2022), an Emergency Operations Plan (2023), and a Continuity of Operations Plan (2014); the city does not maintain a comprehensive land use plan or a stand-alone stormwater ordinance.

City of Dierks

Dierks is an incorporated city in the northwestern part of Howard County, on the Saline River below Dierks Lake, with a 2020 population of 916 (down from 1,133 in 2010). Dierks has been a member of the NFIP since February 14, 1975 (Community ID 050320). The Mayor oversees the floodplain program and the water superintendent serves as floodplain coordinator. The city has no repetitive flood loss claims and is in good standing with the NFIP.

Capability	Status	Capability	Status
Stormwater Management	Yes	Erosion Management	No
Stream Management	Yes	Floodplain Management	Yes
Zoning	No	Building Codes	No
Subdivision Regulation	No	Land Use Plan	No
Elevation Certificates	Yes	Flood Insurance Claims	No

Power in Dierks is split across two grids, AEP/SWEPCO and Rich Mountain Electric Cooperative, which serve different parts of town; water and wastewater are provided by the City of Dierks, natural gas by Summit Utilities, and telephone by Windstream (Kinetic). As a small city below a major flood-control dam, Dierks's most important capabilities are active floodplain management and coordination with the USACE Little Rock District on releases from the Dierks Lake and Gillham projects. The city intends to integrate this plan with its current Emergency Operations Plan and

benefits from CEDS data and grant-writing services from Southwest Arkansas PDD. Dierks is also the home of the Dierks School District. The city's 2026 capability review confirms a floodplain management ordinance updated in 2026, a designated floodplain administrator, access to engineering and building-inspection services, and grant-management support; it does not maintain zoning, subdivision, or building-code regulations.

City of Mineral Springs

Mineral Springs is an incorporated city in the southern part of the county, with a 2020 population of 1,085. Mineral Springs has been a member of the NFIP since February 21, 1975 (Community ID 050349). The Mayor oversees the floodplain program and the water superintendent serves as floodplain coordinator. The city has no repetitive flood loss claims and is in good standing with the NFIP.

Capability	Status	Capability	Status
Stormwater Management	Yes	Erosion Management	No
Stream Management	No	Floodplain Management	Yes
Zoning	Yes	Building Codes	No
Subdivision Regulation	No	Land Use Plan	No
Elevation Certificates	Yes	Flood Insurance Claims	No

Power is provided by AEP/SWEPCO, water and wastewater by the City of Mineral Springs, natural gas by Summit Utilities, and telephone by Windstream (Kinetic). As a small city, Mineral Springs has limited staff and relies primarily on property and other local taxes. Mineral Springs could strengthen its capabilities by adding additional types of management and training, and intends to integrate this plan with its current Emergency Operations Plan. The city is served by the Mineral Springs School District (the Mineral Springs Saratoga School District). The city's 2026 capability review confirms a zoning ordinance and a floodplain management ordinance with a designated floodplain administrator, engineering access, and a public-works department; it does not maintain subdivision regulations, building codes, or a land use plan.

Town of Tollette

Tollette is a small incorporated town in the south-central part of the county, with a 2020 population of 185. Tollette is **not currently a member of the NFIP** (the effective FIRM database lists Tollette without an NFIP entry date). Joining the NFIP is identified as a mitigation action for the town so that residents can obtain flood insurance and the town can adopt floodplain management standards.

Capability	Status	Capability	Status
Stormwater Management	No	Erosion Management	No
Stream Management	No	Floodplain Management	No
Zoning	No	Building Codes	No

Subdivision Regulation	No	Land Use Plan	No
Elevation Certificates	No	Flood Insurance Claims	No

Power is provided by AEPSWEPCO, water by a municipal or rural water association, natural gas by Summit Utilities, and telephone by Southwest Arkansas Telephone. The Town of Tollette is a recognized Firewise Community. As a very small town with limited staff and resources, Tollette relies heavily on the county for emergency management and mitigation support. The town could most improve its capabilities by joining the NFIP and adopting a floodplain ordinance, and intends to integrate this plan into its emergency planning. The town's 2026 capability review confirms it is a recognized Firewise Community with a tree-trimming program and draws on grant-management support (Southwest Arkansas PDD and Rice Consulting), the county emergency manager, and a public-works function; it does not maintain land use, zoning, subdivision, building-code, stormwater, or floodplain regulations, which is why joining the NFIP and adopting a floodplain ordinance are its priority capability actions.

Participating School Districts

Four public school districts serve Howard County and participate in this plan.

Nashville School District

Nashville School District is the largest district in the county, serving roughly 1,800 students across several campuses in Nashville (primary, elementary, middle, and high school). The district maintains an Emergency Operations Plan, an active-shooter plan, and conducts fire and tornado drills. As one of the county's largest employers and the location of its largest concentration of children during the school day, the district represents a highly vulnerable population. The district could improve by adding a mechanism to formally integrate this Hazard Mitigation Plan into its planning.

Dierks School District

Dierks School District serves the northwestern part of the county from campuses in Dierks, with roughly 540 students. The district maintains an Emergency Operations Plan, an active-shooter plan, and conducts fire and tornado drills. Because its campuses are rural and the community sits below Dierks Lake, the district faces both severe-weather and flood-awareness considerations and could improve by adding a mechanism to integrate this plan and by adding grant-writing capacity.

Mineral Springs School District

Mineral Springs School District (the Mineral Springs Saratoga School District, formed in 2004 from the consolidation of the Mineral Springs and Saratoga districts) serves the southern part of the county. In 2019 the district consolidated its separate campuses into a single new 120,000-square-foot K-12 campus of about 400 students and 100 staff. The new building was constructed with built-in tornado-safe hallways (a hardened shelter) and has a backup generator, making it the best-sheltered school campus in the county. The district maintains an Emergency Operations Plan, an active-shooter plan, and conducts fire and tornado drills.

Umpire School District

Umpire School District serves the rural northwestern corner of the county from a single K-12 campus at Umpire (142 School Street), with about 97 students across an 11-building, roughly 48,857-square-foot campus. Once consolidated into a neighboring district, Umpire has re-established itself as an independent K-12 district and participates in this plan under Superintendent Mary Lowrey, Ed.D. The district maintains an Emergency Operations Plan and a school safety plan, conducts fire and tornado drills, and shares a School Resource Officer through the Howard County Sheriff's Office. Its most significant exposure is severe weather: students and staff shelter in interior hallways, and the district has identified a FEMA-rated safe room as its top mitigation priority. Tollet Road and Pinkerton Road, which serve campus access, are prone to flooding (a bridge has since been installed on Pinkerton).

School districts are not eligible to participate in the NFIP and therefore do not carry NFIP status.

Critical Infrastructure

Critical Facilities and Estimated Replacement Values

A critical facility is a structure whose loss would seriously affect public safety, emergency response, or the delivery of essential services. Howard County's critical facilities include its hospital, its long-term-care centers, its school campuses, its water and wastewater systems, its government and public-safety buildings, and the county's volunteer fire stations. To support the loss estimates in this plan and to help the county prioritize protection and mitigation investments, the planning team built a replacement-cost baseline for these facilities.

Because the county does not carry an insured-value schedule for most of these buildings, replacement values were estimated using four transparent methods: building square footage multiplied by an Arkansas-adjusted RS Means unit cost; apparatus-bay count multiplied by a per-bay cost for fire stations; licensed-bed count multiplied by a per-bed cost for nursing and long-term-care facilities; and a component build-up (treatment capacity, storage tanks, wells, and lift stations) for water and wastewater systems. An Arkansas location factor of about 0.86 of the national average is applied throughout. These are planning-level estimates for mitigation prioritization, not appraisals. Facilities marked "To be measured" are tax-exempt or lacked a confirmed footprint or bay count at the time of drafting and should be completed by the jurisdiction at adoption.

The inventory below totals about $272 million across the facilities that have an estimate. The hospital ($51.6 million), the four school-district campuses (about $123 million combined, led by the Nashville and Mineral Springs campuses at $41.3 million each), and the municipal water and wastewater systems (about $37.7 million combined) carry the largest single replacement values and are therefore the county's highest-value protection priorities. Nearly all of this value is concentrated in Nashville and the other incorporated cities, which reinforces the per-jurisdiction vulnerability findings in Section 3.

Facility	Jurisdiction	Facility Type	Estimated Replacement Value
Howard Memorial Hospital	Nashville	Hospital (Critical Access)	$51,600,000
Howard County Courthouse	Nashville	Government / office	$9,030,000

Nashville City Hall	Nashville	Government / office	$2,902,500
Dierks City Hall / Municipal Center	Dierks	Government / office	$1,612,500
Mineral Springs Municipal Center	Mineral Springs	Government / office	$1,612,500
Tollette Town Hall	Tollette	Government / office	$1,612,500
Howard County Sheriff's Office and Detention	Nashville	Police / detention	$6,127,500
Nashville Police Department	Nashville	Police	$2,451,000
Nashville School District (campus buildings)	Nashville	Public school (K-12)	$41,280,000
Dierks School District (campus buildings)	Dierks	Public school (K-12)	$24,080,000
Mineral Springs School District (consolidated K-12 campus)	Mineral Springs	Public school (K-12)	$41,280,000
Umpire School District (K-12 campus)	Umpire	Public school (K-12)	$16,806,808
Nashville Volunteer Fire Department (2 stations)	Nashville	Fire station	$1,612,500
Dierks Volunteer Fire Department (2 stations)	Dierks	Fire station	$1,612,500
Mineral Springs Volunteer Fire Station	Mineral Springs	Fire station	$712,080
Center Point Volunteer Fire Department	Howard County	Fire station	$712,080
Saratoga Volunteer Fire Department (2 stations)	Howard County	Fire station	$1,612,500
County Line Rural Volunteer Fire Department	Howard County	Fire station	$712,080
Athens Fire Department	Howard County	Fire station	$712,080
Umpire Volunteer Fire Department	Umpire	Fire station	$949,440
Cottonshed Volunteer Fire Department	Howard County	Fire station	$712,080
Tollette Volunteer Fire Department	Tollette	Fire station	$712,080
The Blossoms of Nashville	Nashville	Long-term care / nursing	$9,782,500

The Springs of Mine Creek	Nashville	Long-term care / nursing	$10,900,500
The Blossoms of Dierks	Dierks	Long-term care / nursing	$9,782,500
Nashville Water Treatment Plant	Nashville	Water / wastewater	$13,500,000
Nashville Wastewater Treatment Plant	Nashville	Water / wastewater	$13,750,000
Dierks Water / Wastewater System	Dierks	Water / wastewater	$5,650,000
Mineral Springs Water / Wastewater System	Mineral Springs	Water / wastewater	$4,800,000
Total (facilities with an estimate)			**$278,620,228**

*Basis: RS Means unit costs adjusted to Arkansas (location factor about 0.86); fire stations valued by apparatus-bay count; nursing and long-term care by licensed bed count; water and wastewater by component build-up. Full assumptions and inputs are in the Howard County Critical Facility Replacement Values workbook

Schools

The participating school districts are among the largest employers in the county and represent a very vulnerable population when school is in session. Four districts participate: Nashville School District, Dierks School District, Mineral Springs School District, and the Umpire School District, which has re-established itself as an independent K-12 district in the northwest of the county.

Shelter capacity varies sharply across the districts and is a central life-safety finding of this plan. The Mineral Springs consolidated campus has built-in tornado-safe hallways and a backup generator. The Dierks School District has a storm shelter on the JoAnn Walters Elementary campus that was designed to hold both campuses, but Dierks High School students would have to be bussed to it, so the high school needs its own safe room. The Nashville School District, the largest with roughly 1,835 students and staff across its High School (about 425), Junior High (435), Elementary (465), and Primary (510) campuses, has no FEMA-rated safe room and no backup generator at any campus; students and staff shelter in interior rooms, and the Primary and Elementary buildings take on water during heavy rain. The Umpire School District (about 97 students across an 11-building, 48,857-square-foot K-12 campus) shelters in interior hallways and needs a safe room. Hardened safe rooms and backup generators for the Nashville, Dierks (high school), and Umpire campuses are leading mitigation priorities.

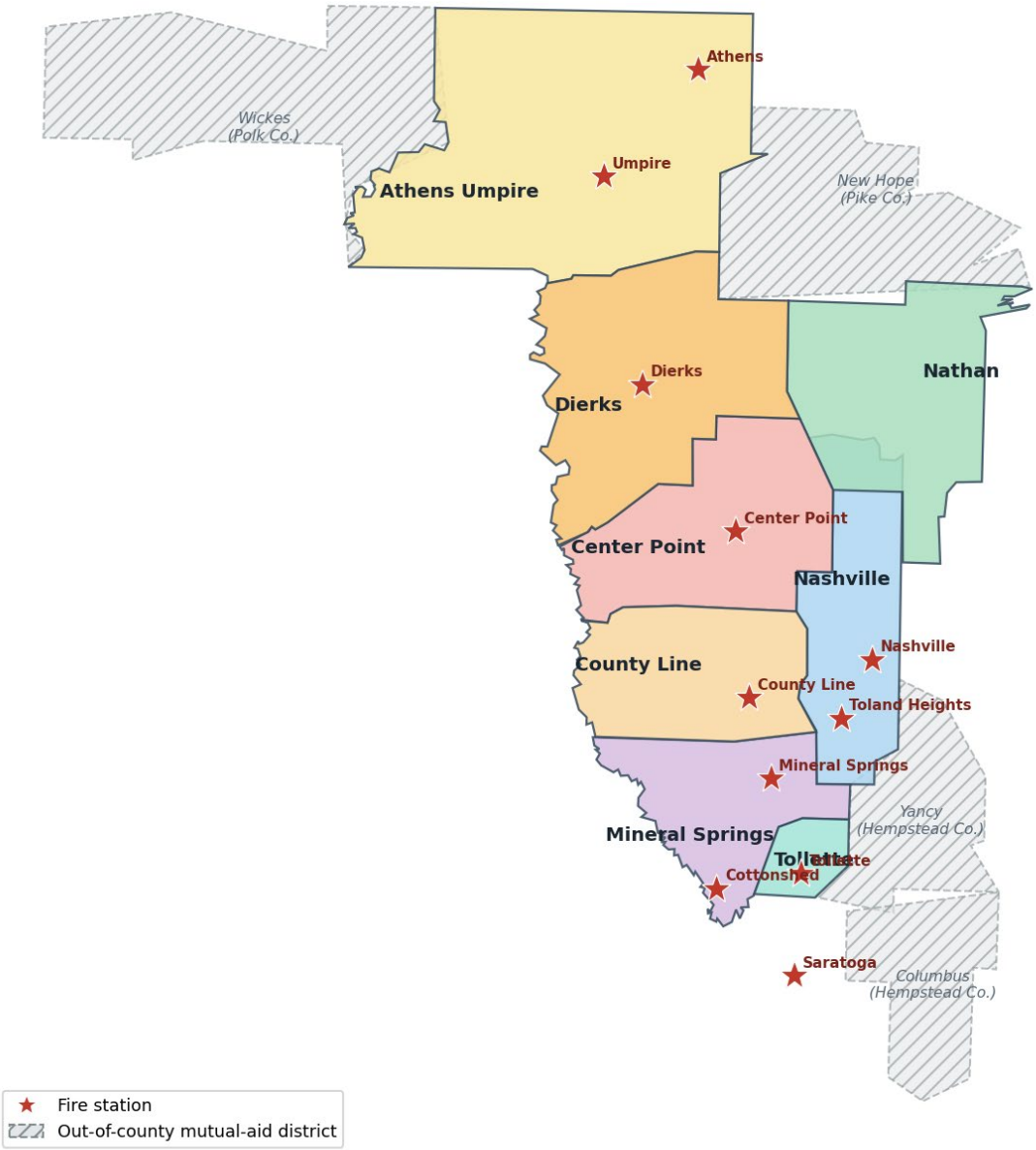
Law Enforcement and Detention

The Howard County Sheriff's Office and the county detention facility are located in Nashville, and the Nashville Police Department serves the county seat. Detention populations are a special-needs group during a disaster because they cannot self-evacuate and must be sheltered in place or relocated under guard.

Fire Protection

Fire protection in Howard County is provided entirely by volunteer and mostly-volunteer departments. There is no fully career fire department in the county. The Arkansas state GIS Fire Districts layer divides the county into eight in-county fire-response districts: Nashville, Center Point, Dierks, Mineral Springs, Tollette, County Line, Athens Umpire, and Nathan (with Saratoga also serving the Howard-Hempstead line). In addition, several departments based in neighboring counties, including Wickes, New Hope, Yancy, and Columbus, respond into portions of Howard County under mutual-aid agreements and are listed at the bottom of the table. Firefighter counts below were updated by the Howard County Office of Emergency Management. The fire stations and departments that serve these districts are critical response facilities and are listed below.

Figure 2. Fire Districts and Stations — Howard County, Arkansas



In-county fire response districts (colored) and fire-station locations (stars) from the Arkansas state GIS Fire Districts and Fire Stations layers (gis.arkansas.gov). Hatched gray districts are based in neighboring counties and respond into Howard County under mutual aid.

Figure 2-8. Fire response districts (colored) and fire-station locations (stars) in Howard County, from the Arkansas state GIS Fire Districts and Fire Stations layers. The county is divided into eight volunteer fire districts; coverage thins in the large, forested Athens Umpire and Nathan districts. The hatched gray districts (Wickes in Polk County, New Hope in Pike County, and Yancy and Columbus in Hempstead County) are based in neighboring counties and respond into Howard County under mutual aid.

Fire Department / Station	Service Area	Type	Owner	Stations	Firefighters

Nashville Volunteer Fire Department	Nashville	Mostly volunteer	Local	2	21
Dierks Volunteer Fire Department	Dierks	Volunteer	Local	2	21
Mineral Springs Volunteer Fire Station	Mineral Springs	Volunteer	Municipal	1	23
Center Point Volunteer Fire Department	Center Point / Nashville	Volunteer	Rural	1	15
Saratoga Volunteer Fire Department	Saratoga (Howard/Hempstead line)	Volunteer	Rural	2	14
County Line Rural Volunteer Fire Department	County Line	Volunteer	Rural	unconfirmed	unconfirmed
Athens Fire Department	Athens / Umpire	Volunteer	Rural	Unconfirmed	unconfirmed
Umpire Volunteer Fire Department	Umpire	Volunteer	Rural	unconfirmed	unconfirmed
Tollette Volunteer Fire Department	Tollette	Volunteer	Municipal	unconfirmed	unconfirmed
Toland Heights Fire Station	Nashville (substation)	Nashville VFD substation	Local	n/a	n/a
Wickes Volunteer Fire Department	Wickes area (Polk County); mutual aid into NW Howard County	Volunteer (out-of-county)	Rural	unconfirmed	unconfirmed
New Hope Volunteer Fire Department	New Hope area (neighboring county); mutual aid	Volunteer (out-of-county)	Rural	unconfirmed	unconfirmed
Yancy Volunteer Fire Department	Yancy area (neighboring county); mutual aid	Volunteer (out-of-county)	Rural	unconfirmed	unconfirmed
Columbus Volunteer Fire Department	Columbus area (Hempstead County); mutual aid	Volunteer (out-of-county)	Rural	unconfirmed	unconfirmed

Source: Arkansas state GIS Fire Stations and Fire Districts layers (gis.arkansas.gov), retrieved June 2026. Station and firefighter counts shown as unconfirmed are departments the state record lists without a station count or roster; these are active volunteer departments, not departments without firefighters, and the counts should be confirmed with the county OEM at adoption.

Two points stand out for mitigation planning. First, every department in the county is volunteer or mostly volunteer, which means response depends on the availability of volunteers and lengthens response times to fires, severe-weather damage, and rescues, especially in the rural districts. Second, the largest districts by area, Athens Umpire and Nathan, cover the forested and sparsely populated northern and northeastern county, which is the same wildland-urban interface that carries the highest wildfire exposure (see the Wildfire profile in Section 3). Hardening these volunteer departments, through apparatus, equipment, water supply (tankers and dry hydrants), and recruitment and retention support, is a recurring mitigation need.

Hospitals and Long-Term Care

The county's hospital is **Howard Memorial Hospital** in Nashville, a Critical Access Hospital that serves Howard and neighboring counties; it operates 20 beds (2 of them ICU, the rest swing and medical beds) and employs about 240 people. The county's long-term-care facilities house medically fragile populations who are especially vulnerable to power loss during severe storms, ice storms, and extreme heat: The Springs of Mine Creek (1407 N Main Street, Nashville; 78 beds, about 80 staff), The Blossoms of Nashville (810 N 8th Street, Nashville; 70 beds, about 82 staff), and The Blossoms of Dierks (402 S Arkansas Street, Dierks; 70 beds, about 85 staff).

Manufactured Housing and Substandard Housing

There are pockets of manufactured homes, mobile homes, and other substandard housing throughout the planning area, both in and around Nashville and scattered across the rural county and the smaller towns. These structures house vulnerable populations and are themselves vulnerable: manufactured homes that are not properly anchored are far more likely to be damaged or destroyed by high wind, tornadoes, and the weight of ice and snow, which increases the likelihood of injury or death to occupants. This concentration of manufactured housing is one of the most important vulnerability factors in the county and is reflected in the per-jurisdiction hazard narratives in Section 3.

Major Employers and Economic Assets

The largest employers and key economic assets in the planning area include Tyson Foods and Pilgrim's Pride (poultry processing), Weyerhaeuser and CertainTeed (timber and building products), the Coca-Cola and Dr Pepper bottling operations, Howard Memorial Hospital, and county and city government and the school districts. The county's agricultural base includes poultry, cattle, timber, and row crops. A prolonged disruption at any of the major processing plants, particularly the poultry operations, would have outsized economic consequences for a county this size. The 2024 closure of the Husqvarna plant, with the loss of roughly 700 jobs, has already reduced the county's economic cushion and underscores the importance of protecting the remaining employment base from hazard disruption.

SECTION 3

Hazard Identification and Risk Assessment

Hazard Identification and Prioritization

The first step in the risk assessment is hazard identification, which means identifying the natural hazards that threaten the planning area. The Howard County planning committee reviewed the federal disaster record, the NOAA National Centers for Environmental Information (NCEI) Storm Events Database, the FEMA National Risk Index (NRI), the USGS earthquake catalog, and the U.S. Army Corps of Engineers National Inventory of Dams. Based on that review, the committee identified the following natural hazards as posing a credible threat to the county and warranting a full profile in this plan: Dam and Levee Failure, Drought, Flooding, Earthquake, Thunderstorms (including lightning, hail, and severe thunderstorm wind), Tornado, Wildfire, Winter Storms, and Extreme Heat.

The table below summarizes the recorded event history used for identification. Storm Events figures cover 2000 through 2026 (the period of consistent county-level records); the federal declaration history extends back to 1968.

Hazard	Recorded Event Summary (NOAA Storm Events 2000-2026 and FEMA records)
Dam and Levee Failure	No recorded dam failure in Howard County. The county has 14 NID-inventoried dams, 3 of which are rated High Hazard (Gillham Dam, Nichols Lake Dam, and the Millwood Dam - Okay Levee feature). Profiled as a low-probability, high-consequence hazard.
Drought	44 drought periods recorded; chronic, recurring agricultural hazard. NRI models $0 direct loss but under-represents agricultural drought.
Flooding	3 riverine flood and 37 flash flood events, totaling about $250,000 in recorded property damage. 4 flood-specific federal disaster declarations plus flooding within many severe-storm declarations.
Earthquake	No earthquakes of magnitude 2.0 or greater on record (1950-2025). Profiled as a very-low-probability, low-consequence hazard tied to the regional New Madrid Seismic Zone scenario.
Thunderstorms	134 thunderstorm wind events (about $1,952,000 property), 124 hail events, and 0 recorded lightning events. The most frequent damaging hazard in the county.
Tornado	12 tornadoes (2000-2026) causing 2 deaths, 9 injuries, and about $4,385,000 in property damage;

	recorded up to EF3.
Wildfire	3 wildfires recorded in Storm Events (which under-records wildfire), $50,000 property and 1 injury. NRI rates wildfire Expected Annual Loss Very Low.
Winter Storms	43 winter events (winter storm, ice storm, winter weather) plus 7 cold events. NRI rates Ice Storm Expected Annual Loss **Very High** for this county. Three winter-storm federal declarations.
Extreme Heat	75 heat events recorded (2000-2026); no deaths or injuries in Storm Events, which under-records heat illness. NRI heat-wave Expected Annual Loss about $368,853/yr (Relatively Low); a chronic seasonal public-health hazard.

The hazards that the county does not consider a distinct risk requiring a separate profile are addressed within related profiles: extreme cold is discussed within the winter storm profile.

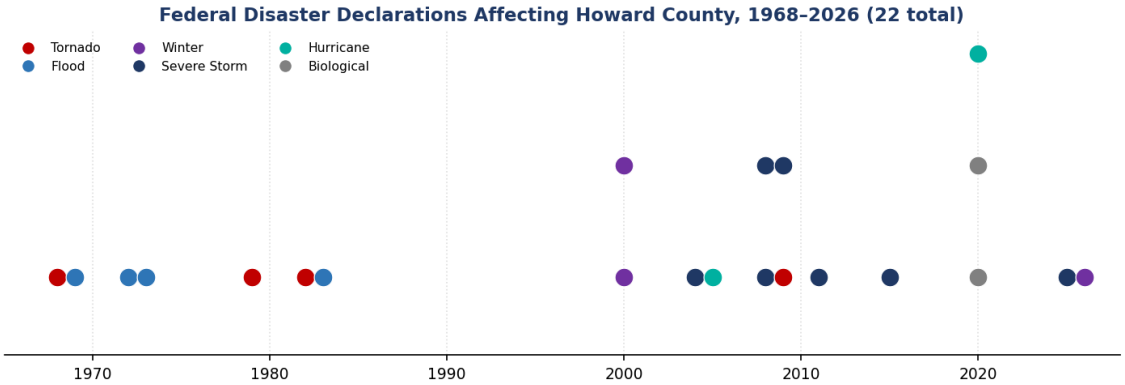


Figure 3-1. Federal disaster declarations affecting Howard County, 1968-2026. Severe storms, flooding, tornadoes, and winter storms dominate the federal record.

Vulnerability and Risk Assessment Methodology

This plan includes, for each profiled hazard, a description, the location and geographic extent of the hazard, the history of previous occurrences, the probability of future events, a per-jurisdiction vulnerability assessment, a loss estimate, and a statement of data deficiencies, consistent with 44 CFR 201.6(c)(2).

Probability of future events is calculated using the historic-frequency method: the number of recorded events divided by the number of years in the period of record yields an annual frequency, and the inverse yields an average recurrence interval. These figures are cross-referenced against the FEMA National Risk Index annualized frequency for each hazard. Loss estimates draw on two sources: the actual historical damage recorded in the NOAA Storm Events Database, and the modeled Expected Annual Loss (EAL) figures from the FEMA National Risk Index. Where data are unavailable, the deficiency is stated rather than estimated.

This plan does not treat the planning area as uniformly exposed. Each hazard profile includes a per-jurisdiction vulnerability narrative that identifies the specific waterways, roads, facilities, and populations that make individual jurisdictions more or less exposed than others.

The two charts below summarize where the county's risk concentrates. The FEMA National Risk Index models the largest expected annual losses from riverine flooding, ice storm, and tornado, while the actual recorded property damage is dominated by the December 2000 ice storm.

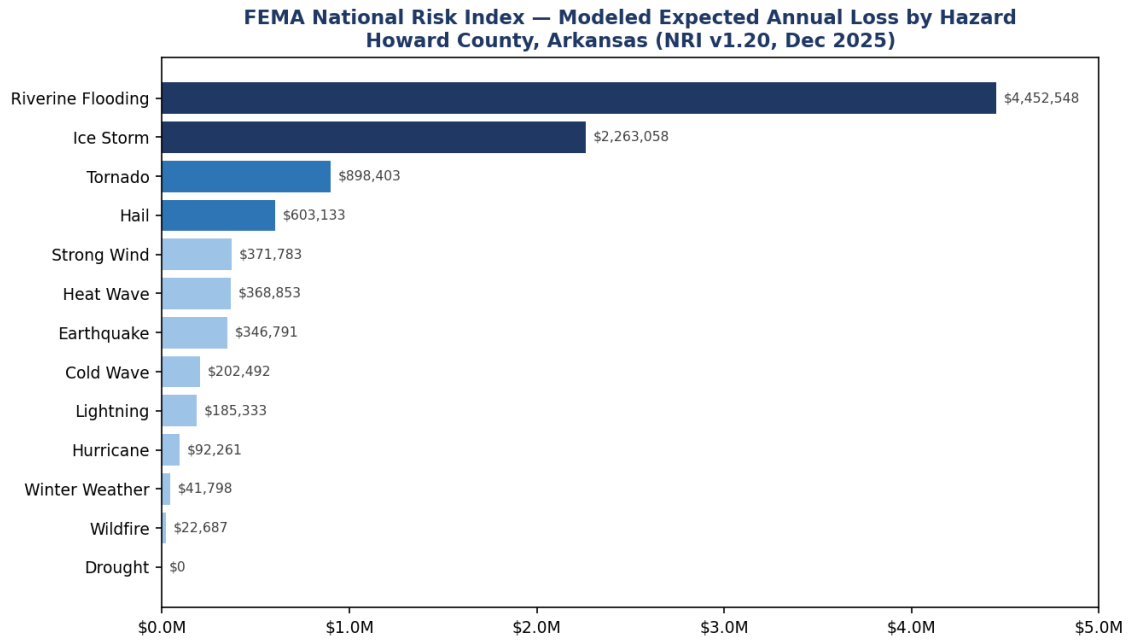


Figure 3-2. FEMA National Risk Index modeled Expected Annual Loss by hazard for Howard County. Flooding, ice storm, and tornado are the largest modeled dollar losses.

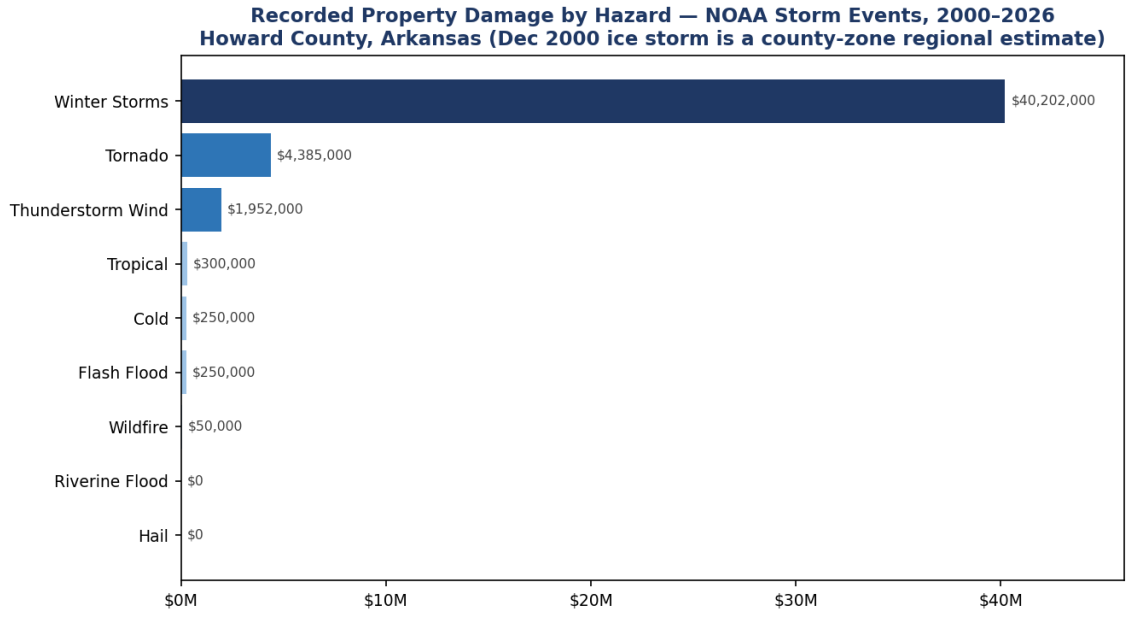


Figure 3-3. Recorded property damage by hazard from the NOAA Storm Events Database, 2000-2026. The December 2000 ice storm (a county-zone regional estimate) dominates the recorded total.

Dam and Levee Failure

Description

Catastrophic type of failure characterized by the sudden, rapid, and uncontrolled release of impounded water or the likelihood of such an uncontrolled release. It is recognized that there are lesser degrees of failure and that any malfunction or abnormality outside the design assumptions and parameters that adversely affect a dam's primary function of impounding water is properly considered a failure. These lesser degrees of failure can progressively lead to or heighten the risk of a catastrophic failure. They are, however, normally amenable to corrective action (USSD 2018).

Dams help address the complex challenge of controlling and distributing water. They conserve water in reservoirs for energy, drinking water, and irrigation, and they protect developed areas from floods through flood control. Dam safety and maintenance standards have increased over time. Most dams nationally are at or near their 50-year design life, and the probability of failure increases with age and with deferred maintenance; washed-out spillways, deteriorated conduits, collapsed risers, and slope instability can lead to a breach. Dam failures across Arkansas are few because owners are required to perform routine inspections and maintenance (ANRC 2018).

In Howard County, the U.S. Army Corps of Engineers National Inventory of Dams (NID) lists 14 dams: 3 rated High Hazard, 2 Significant Hazard, and 9 Low Hazard. The High Hazard classification means loss of human life is likely if the structure fails. The most consequential structures are concentrated in two settings: the large USACE flood-control projects on the county's major rivers (Gillham Dam on the Cossatot, and the Millwood Dam project whose Okay saddle embankment reaches into southern Howard County), and a cluster of smaller dams on Mine Creek directly upstream of the City of Nashville.

Dams That Pose a Risk to the Planning Area

The Hazard Mitigation Planning Committee reviewed the National Inventory of Dams for all facilities within and adjacent to Howard County. Five dams pose a credible risk to the planning area based on their High or Significant Hazard Potential classification and downstream exposure, and are profiled in this plan.

Dam (NID ID)	Owner	River	Type	Height (ft)	Storage (ac-ft)	Year	Hazard	Condition	EAP
Gillham Dam (AR01200)	USACE Little Rock District	Cossatot	Concrete / gravity	160	221,800	1975	High	Not Available	Yes (2023)
Nichols Lake Dam (AR00918)	City of Nashville	Mine Creek	Earth	20	605	1928	High	Satisfactory	Yes
Millwood Dam -	USACE Little	Little	Concrete	88	1,854,930	1966	High	Not	Yes

Okay Levee (AR00536)	Rock District	River						Available	(2023)
Upstream Mine Creek Reservoir Dam (AR01480)	City of Nashville	Mine Creek	Earth	47	3,091	1985	Significant	Satisfactory	Not Required
Davis Lake Dam (AR00917)	Noel Davis Jr. (private)	Mine Creek	Earth	22	92	1956	Significant	Not Rated	Not Required

Source: USACE National Inventory of Dams (record last updated 2026). Storage is NID maximum storage in acre-feet; "EAP" is Emergency Action Plan status.

The remaining 9 dams in the county carry a Low Hazard Potential classification, meaning their failure would result in no probable loss of human life and low economic or environmental damage. These were evaluated and are acknowledged in aggregate; they are not individually profiled. One county-line note: although the City of Dierks lies in Howard County, the USACE Dierks Lake Dam on the Saline River immediately upstream of the city is filed in the National Inventory of Dams under neighboring Sevier County and is profiled in that county's plan; its downstream exposure nonetheless reaches Dierks and is reflected in the Jurisdiction Vulnerability below.

High Hazard Potential Dams (Element G)

This subsection documents the High Hazard Potential Dam (HHPD) element required by the FEMA 2025 Local Mitigation Planning Policy Guide for jurisdictions affected by high hazard potential dams.

HHPD1 - Coordination and information gathering. The planning committee identified the high hazard potential dams affecting the planning area using the USACE National Inventory of Dams, the Arkansas Natural Resources Division Dam Safety Program, and USACE Little Rock District records. Three High Hazard Potential dams affect Howard County: **Gillham Dam (NID AR01200)** and the **Millwood Dam - Okay Levee (NID AR00536)**, both USACE Little Rock District flood-control structures; and **Nichols Lake Dam (NID AR00918)**, a City of Nashville water-supply dam on Mine Creek. Coordination on dam safety is conducted with the Arkansas Natural Resources Division, the USACE Little Rock District (for Gillham and Millwood), and the City of Nashville (for Nichols Lake and the upstream Mine Creek reservoir). As a standing coordination mechanism, Howard County meets with the USACE Little Rock District approximately every two years on the operation and safety of the Gillham and Millwood projects.

HHPD2 - Risk and vulnerability assessment and methodology. Risk was assessed from the National Inventory of Dams record and the NID hazard-potential classification. Gillham Dam is a 160-foot concrete and rockfill gravity flood-control dam on the Cossatot River (34.211 N, -94.228 W) completed in 1975, impounding 221,800 acre-feet on a 271-square-mile drainage; Gillham Lake, the reservoir it impounds, spans two counties, extending from Howard County into Sevier County; its

most recent inspection (December 7, 2021) did not carry a published condition rating (Not Available), and an Emergency Action Plan is on file (last revised July 20, 2023). The Millwood Dam - Okay Levee is the 17,554-foot concrete saddle embankment of the USACE Millwood project on the Little River (33.771 N, -93.945 W), completed in 1966 and associated with 1,854,930 acre-feet of storage; it was last inspected June 1, 2022 and has a current Emergency Action Plan (July 17, 2023). Nichols Lake Dam is a 20-foot earth water-supply dam owned by the City of Nashville on Mine Creek (33.959 N, -93.843 W), completed in 1928 and impounding 605 acre-feet; it is rated in Satisfactory condition with an Emergency Action Plan on file. The controlling local scenario is the Mine Creek chain above Nashville: Nichols Lake Dam and the Significant-hazard Upstream Mine Creek Reservoir Dam sit directly upstream of the county seat, so a failure would send water down Mine Creek into Nashville.

HHPD2-b - USACE dam-safety risk assessment (Gillham and Millwood). Beyond the National Inventory of Dams hazard-potential class, the U.S. Army Corps of Engineers has completed a formal dam-safety risk assessment for Gillham Dam and characterizes its risk as Very Low, the lowest USACE risk category (assessment assigned in 2018). This risk rating is a distinct measure from the High Hazard Potential classification used above: the hazard-potential rating describes the downstream consequence if the dam were to fail (loss of life is likely), while the USACE risk rating describes the likelihood of such a failure, which is very low for a well-maintained federal flood-control dam. The two measures are consistent with this plan's treatment of dam failure as a low-probability, high-consequence hazard. In the Corps' assessment, Gillham Dam significantly reduces the risk of flooding to surrounding communities but does not eliminate it: even in normal operation, a very large rainfall event can require unusually large releases through the dam's gates, and in an extreme event downstream flooding could approach what was experienced before the dam was built. The less-likely failure scenarios the Corps identifies include seepage or erosion along the abutment-to-embankment-to-foundation interface or through the embankment, overtopping during an extreme flood, and inoperability of the auxiliary spillway gates; a breach would send an uncontrolled release into the primarily rural and agricultural area downstream along the Cossatot. The Corps manages this risk through ongoing inspection and monitoring (increased during high-water events), regular updates to the Emergency Action Plan, emergency-response exercises with federal, state, and local emergency managers, and close tracking of rainfall forecasts to support flood warnings. The Millwood Dam - Okay Levee is a component of the USACE Millwood project, which carries its own USACE risk assessment (characterized as low, completed in 2022). Nichols Lake Dam is City-owned and is not covered by a USACE risk assessment.

HHPD3 - Goal to reduce HHPD vulnerability. The plan adopts the goal of reducing the planning area's vulnerability to high hazard potential dam failure by maintaining current inundation mapping and Emergency Action Plans, improving downstream warning (especially along Mine Creek above Nashville and the Cossatot below Gillham), and coordinating with the USACE, the City of Nashville, and the Arkansas Natural Resources Division. This goal is consistent with Goal 1 (reduce risk to life and property) and Goal 4 (protect existing properties) in Section 4.

HHPD4 - Actions, prioritization, and responsible party. The mitigation strategy in Section 4 carries a dam and levee safety action: maintain and exercise the Emergency Action Plans and inspection cycles for Gillham Dam, the Millwood - Okay Levee, and Nichols Lake Dam; complete or update inundation mapping for the Mine Creek dams above Nashville; and coordinate the Gillham and

Millwood release scenarios with the USACE Little Rock District and the downstream counties (Sevier and Little River). The county Office of Emergency Management, the City of Nashville, and the USACE are the responsible parties, working with the Arkansas Natural Resources Division. The action is assigned High priority and a five-year time frame, paired with the early-warning-system action.

Levees

The county FIRM maps one levee centerline in Howard County: the **Okay Levee**, the saddle embankment of the USACE Millwood Dam project along the north end of Millwood Lake in the far southern county near Saratoga and Tollette. This feature is carried in the National Inventory of Dams as the **Millwood Dam - Okay Levee (High Hazard, an associated structure of NID AR00536)** rather than as an independent structure. It is **not registered as an accredited or provisionally accredited system in the FEMA National Levee Database**: the FIRM levee record carries no National Levee Database identifier, and its USACE-levee, owner, and status fields are undetermined. It is therefore addressed in this plan as a component of the Millwood Dam project rather than as a separate NFIP-recognized levee. No other levee systems are identified in Howard County.

Figure 7. High and Significant Hazard Dams and Levees — Howard County, Arkansas

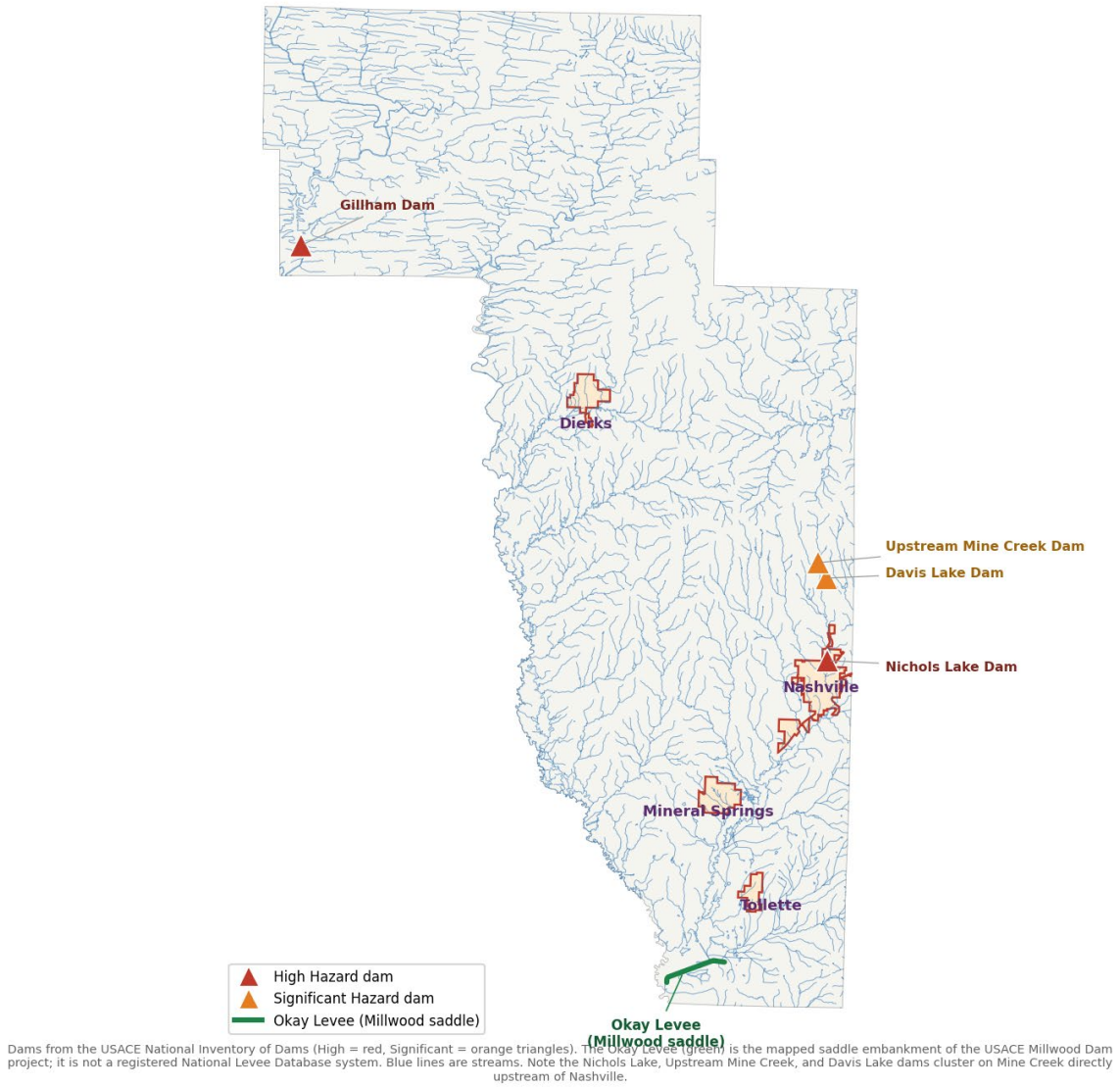


Figure 3-4. High and Significant Hazard dams and the Okay Levee in Howard County (USACE National Inventory of Dams and FEMA NFHL). Gillham Dam (High) sits on the Cossatot in the northwest; Nichols Lake Dam (High) and the Upstream Mine Creek and Davis Lake dams (Significant) cluster on Mine Creek directly above Nashville; the Okay Levee is the Millwood saddle embankment in the far south.

Extent, Magnitude, or Severity

Dam and levee failure is measured by the National Inventory of Dams hazard-potential classification. Howard County has 3 High Hazard dams (loss of human life likely on failure), 2 Significant Hazard dams, and 9 Low Hazard dams. The credible worst case is a High Hazard failure or extreme release from Gillham Dam on the Cossatot (221,800 acre-feet), Nichols Lake Dam on Mine Creek directly above Nashville, or the Millwood-Okay saddle on the Little River (part of the 1,854,930 acre-foot Millwood project).

Location

The dam and levee failure hazard in Howard County is **not uniform**. It concentrates in three specific corridors:

- **Mine Creek through the City of Nashville**, below Nichols Lake Dam, the Upstream Mine Creek Reservoir Dam, and Davis Lake Dam. This is the most significant local exposure because two City-owned dams and one private dam sit directly upstream of the county seat.
- **The Cossatot River below Gillham Dam**, which carries any controlled high release or failure flows south through the western county toward Sevier County and the Little River.
- **The Little River and Millwood Lake corridor in the far south**, at the Okay saddle embankment near Saratoga and Tollette.

A fourth, cross-boundary exposure runs along the **Saline River at Dierks**, below the USACE Dierks Lake Dam (filed under Sevier County). The 9 Low Hazard dams are scattered across the rural county and are acknowledged in aggregate; many are stock ponds or sit in pasture where a breach would be a local nuisance rather than a threat to life, and no school campuses lie within their mapped inundation areas.

Previous Occurrences

There is no record of a dam or levee failure in Howard County.

Probability of Future Events

Because there is no history of failure and the High Hazard structures are inspected on a regular cycle (Gillham and the Millwood - Okay Levee on a five-year USACE cycle, and the Mine Creek reservoir dams annually), the probability of a dam or levee failure in any given year is **less than 1 percent (Low)**. The consequence of a failure of Nichols Lake Dam or the upstream Mine Creek dams above Nashville, or of an extreme release at Gillham or Millwood, would nonetheless be high for the specific populations downstream, which is why the hazard is profiled despite its low probability.

Jurisdiction Vulnerability

- **City of Nashville** carries the highest dam-failure vulnerability in the county. Three dams sit on Mine Creek directly upstream of the city: Nichols Lake Dam (High Hazard, City-owned, 1928) and the Upstream Mine Creek Reservoir Dam (Significant, City-owned, 1985), both water-supply dams, plus the privately owned Davis Lake Dam (Significant). A failure of any of these would send water down Mine Creek into Nashville, where the county's densest population, the hospital, schools, and commercial core are located. The age of Nichols Lake Dam (nearly 100 years) makes maintaining its inspection cycle and Emergency Action Plan a priority.
- **Unincorporated Howard County** along the Cossatot River below Gillham Dam contains the rural residences, roads, bridges, and farmland exposed to a release or failure there, and the southern county near Saratoga and Tollette lies below the Okay saddle embankment of the Millwood project.
- **City of Dierks** is exposed to the USACE Dierks Lake Dam on the Saline River immediately upstream (filed under Sevier County); a large release or failure would travel down the Saline through the city, compounding the high riverine flood exposure noted in the Flooding profile.

- **City of Mineral Springs and Town of Tollette** are not located immediately below a High Hazard dam, though Tollette lies in the southern county within the general Millwood and Little River corridor. Their dam-failure vulnerability is lower than that of Nashville or Dierks.
- **School Districts** report no campus within a mapped dam inundation area; the principal concern is bus-route access on roads that could be cut by a downstream release, particularly in Nashville along Mine Creek.

Loss Estimate

No FEMA National Risk Index Expected Annual Loss is modeled specifically for dam or levee failure. The most concentrated potential loss is in the City of Nashville, downstream of the Mine Creek dams, where a failure would reach the densest population and the county's critical facilities. Additional exposure is tied to the Cossatot corridor below Gillham Dam and the Saline River at Dierks. A precise structure-level loss estimate cannot be produced until current inundation mapping is compiled for the Mine Creek dams (see Data Deficiency); the USACE holds inundation information for Gillham and Millwood in their Emergency Action Plans.

Data Deficiency

Detailed National Inventory of Dams records were obtained for the county's three High Hazard and two Significant Hazard dams and are summarized above. The residual data needs are current public-facing inundation maps for the Mine Creek dams above Nashville (Nichols Lake and Upstream Mine Creek) and coordination with the USACE Little Rock District on the Gillham and Millwood release scenarios. The National Inventory of Dams record does not report a last-inspection date for Nichols Lake Dam; this is documented here as a data deficiency rather than assumed, and should be obtained from the Arkansas Natural Resources Division Dam Safety Program at the next update. The condition assessments shown as "Not Available" or "Not Rated" should be updated from the Arkansas Natural Resources Division Dam Safety Program at the next update. A mitigation action to maintain the Emergency Action Plans and complete Mine Creek inundation mapping is included in Section 4.

Drought

Description

A deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area (NWS 2009).

Drought impacts vary with the duration and intensity of the event. A few dry weeks may affect crops and lawns, while droughts lasting months or years may significantly affect large water resources, leading at the extreme to farm and business losses. Conditions that lead to drought include large-scale stationary high-pressure systems that inhibit precipitation, dry-soil feedback that accelerates warming, and La Nina patterns that displace the jet stream. Droughts can happen at any location and any time of year, but impacts become severe more quickly in summer, when evaporative loss is high. Drought is rated by the weekly U.S. Drought Monitor on a scale from D0 (abnormally dry) to D4 (exceptional drought), as shown below.

Category	Severity	Approx. Frequency	Typical Conditions
D0	Abnormally Dry	21-30% of the time	Going into or coming out of drought; short-term dryness slows planting and growth
D1	Moderate Drought	11-20% (once every 5-10 yr)	Some damage to crops and pastures; developing water shortages; voluntary restrictions
D2	Severe Drought	6-10% (every 10-20 yr)	Crop and pasture losses likely; water shortages common; restrictions imposed
D3	Extreme Drought	3-5% of the time	Major crop and pasture losses; widespread water shortages
D4	Exceptional Drought	0-2% (about every 50 yr)	Exceptional and widespread crop and pasture losses; water emergencies

The realistic planning expectation for Howard County is D0 to D2 conditions in most years, with occasional escalation to D3 or D4.

In Howard County, drought is a chronic, recurring hazard rather than a rare one. Southwest Arkansas is rich in agriculture (poultry, cattle, timber, and row crops), and the local economy depends on those agricultural resources, so drought translates quickly into economic stress on farmers and ranchers. Drought also raises wildfire potential by drying out fine fuels and timber, and it stresses the small municipal and rural water systems that serve the county.

Extent, Magnitude, or Severity

Drought severity is measured on the weekly U.S. Drought Monitor scale, from D0 (abnormally dry) through D4 (exceptional drought). The realistic planning range for Howard County is D0 to D2 in most years, with occasional escalation to D3 or D4 in severe years.

Location

Drought is a regional, non-localized hazard. When drought conditions set in, they affect the entire county and all jurisdictions roughly equally in terms of meteorological exposure. The difference between jurisdictions lies in consequence, not exposure: the rural, agriculture-dependent areas of the unincorporated county feel drought most acutely, while the incorporated cities feel it primarily through water-supply stress and increased fire danger.

Previous Occurrences

NOAA Storm Events records 44 drought periods affecting Howard County during 2000-2026. The FEMA National Risk Index assigns drought a high annualized frequency for this county, reflecting how routinely abnormally dry to moderate-drought conditions recur in southwest Arkansas.

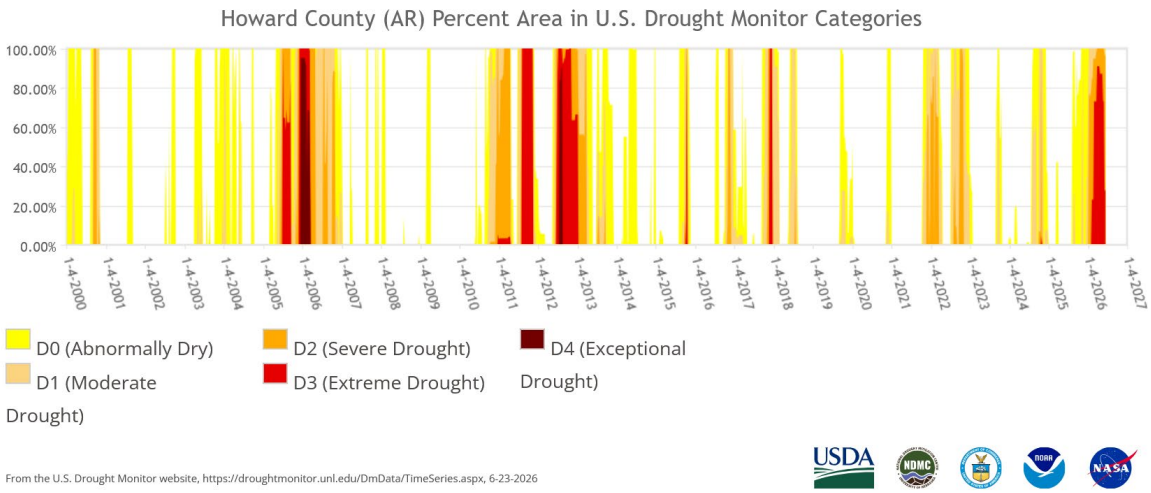


Figure 3-5. Percent of Howard County in each U.S. Drought Monitor category, 2000-2025. Abnormally dry (D0) to moderate (D1) conditions recur most years, with periodic escalation to severe (D2) and extreme (D3) drought. Source: U.S. Drought Monitor / SCIPP.

Probability of Future Events

Drought is essentially an annual risk at the lower intensities. The county can expect D0 to D1 conditions in most years and more significant D2 or higher droughts periodically. The realistic planning expectation is that the county will experience drought in the D0 to D2 range frequently, with occasional escalation to D3 or D4.

Jurisdiction Vulnerability

Drought is a regional, non-localized hazard: its meteorological onset reaches the whole county at once. Where the impact actually lands, however, differs sharply by jurisdiction. The rural, agriculture-dependent areas of the unincorporated county feel drought most acutely, through crop, pasture, and livestock stress and shrinking stock ponds, while the incorporated cities feel it primarily through water-supply stress on small municipal systems and increased fire danger. The difference between jurisdictions is one of consequence, not exposure.

- **Unincorporated Howard County** is the most vulnerable to drought because its economy and land use are dominated by agriculture. Cattle operations, poultry houses, hay and row-crop ground, and commercial timber all suffer direct economic loss in a prolonged drought, and rural households on private wells or small rural water associations are exposed to water-supply shortfalls.
- **City of Dierks, City of Mineral Springs, and Town of Tollette** are small systems with limited water-supply redundancy; a severe drought stresses their water utilities and rural associations and can trigger conservation orders. Dierks benefits from proximity to the Dierks Lake supply, but distribution capacity remains limited.

- **City of Nashville** has the most robust municipal water system but the largest demand; the principal drought concern for Nashville is maintaining supply for its population, the hospital, and the large poultry-processing and bottling plants, which are major industrial water users.
- **School Districts (Nashville, Dierks, Mineral Springs, and Umpire)** anticipate limited direct impact but could face water-conservation measures and increased fire danger on rural campuses.

Loss Estimate

The FEMA National Risk Index models drought Expected Annual Loss for Howard County at **$0 (No Expected Annual Losses)**. This figure understates agricultural drought loss because NRI does not fully capture crop and livestock losses; actual agricultural loss in a severe drought year would be considerably higher and should be supplemented with USDA Farm Service Agency and Arkansas Department of Agriculture data. Drought does not typically cause structural building loss.

Data Deficiency

NOAA Storm Events logs drought declaration periods, not full agricultural loss, and the NRI models zero direct dollar loss for the county, which is not a realistic measure of agricultural impact. County-level crop and livestock loss figures should be obtained from the USDA Farm Service Agency and the Arkansas Department of Agriculture and added to the loss estimate at the next update.

Flooding

Description

Heavy rainfall is rain with a rate of accumulation exceeding a specific value that is geographically dependent (AMS 2012). Flooding is any high flow, overflow, or inundation by water which causes or threatens damage (NWS 2009).

Heavy rainfall is rain falling faster than the underlying surface can absorb it, causing runoff and the inundation of low-lying areas. Whether a given rainfall causes flooding depends on the rate of infiltration, how quickly runoff reaches creeks and rivers, whether the ground is already saturated, and other local factors. Flooding is most likely in low-lying areas, along the edges of water bodies, and over impermeable surfaces such as streets and parking lots. Flash flooding occurs with intense thunderstorms, while river (riverine) flooding usually requires rainfall accumulated over a longer duration, or upstream releases. Rainfall and flooding are greatest in spring, summer, and fall; tropical systems from the Gulf of Mexico can produce among the highest rainfall rates in the state.

Howard County experiences **two distinct types of flooding**, and they affect different places.

Riverine (slow-rise) flooding occurs along the main-stem rivers and larger creeks, especially the **Cossatot River** (which flows south through the western county below Gillham Dam), the **Saline River** (the "Saline River of the South," which flows past Dierks below Dierks Lake), the **Little Missouri River** (in the northeastern corner of the county), and **Rolling Fork**. Riverine flooding builds over hours to days and, on the regulated rivers, is influenced by USACE releases from the Gillham and Dierks projects.

Flash (rapid-runoff) flooding occurs in urban drainage in Nashville and other incorporated areas, at low-water crossings, and along small tributaries and rural creeks. It responds within minutes to heavy rain and strikes different locations than riverine flooding. Flash flooding is by far the more frequent of the two in Howard County (37 flash flood events versus 3 riverine events in the 2000-2026 record).

The two USACE flood-control dams give the county a degree of regulation on its main rivers that many counties lack, but they also tie local flood risk to reservoir operations. The Cossatot River below Gillham Dam is monitored at the USACE gauge **GLTA4 (Cossatot River below Gillham Dam near Gillham)**, and releases from Gillham and Dierks Lakes are coordinated by the USACE Little Rock District. Identifying flood-prone roads, bridges, and structures along the Cossatot, Saline, and Little Missouri corridors, and pairing them with gauge thresholds, is a continuing data need (see Data Deficiency).

Extent, Magnitude, or Severity

Flood extent is measured by FEMA flood zone and by river stage. The mapped Special Flood Hazard Area (the 1 percent annual chance floodplain) covers about 14 percent of the county; the credible range runs from shallow flash flooding at low-water crossings to riverine flooding on the Cossatot, Saline, and Little Missouri rivers, with the detailed AE zone (carrying Base Flood Elevations) concentrated at Dierks and Nashville.

Location

Flood risk is **not uniform** across the planning area. The Saline River corridor at and below **Dierks** carries the highest regulated-river risk; the Cossatot River corridor through the rural western county carries significant riverine risk; the **Little Missouri River** affects the rural northeast; and urban drainage and small tributaries in and around **Nashville** carry the highest flash-flood risk to developed property. Several recorded flash-flood and riverine events have affected the unincorporated communities of Center Line/County Line, Rosedale, and the areas around Dierks and Tollette.

Previous Occurrences

NOAA Storm Events (2000-2026) records 3 riverine flood events and 37 flash flood events in Howard County, totaling about $250,000 in property damage. The single most damaging recorded flash flood was at Nashville on July 27, 2006 ($250,000). Other notable flash floods occurred at Dierks (September 8, 2001), Nashville (March 30, 2002), and at the County Line (March 18, 2008). Notable riverine flooding occurred on February 8, 2023, affecting Rosedale, Dierks, and Tollette. Howard County has received four flood-specific federal disaster declarations: DR-254 (1969), DR-321 (1972), DR-375 (1973), and DR-688 (1983), and flooding is named in many of the county's later severe-storm declarations, including DR-1528 (2004), DR-1751 (2008), DR-1845 (2009), DR-1975 (2011), DR-4226 (2015), and EM-3627 (2025). A catastrophic flash flood on July 16, 2019, driven by the remnants of Tropical Storm Barry, is the most significant flood in the county's recent memory even though the NOAA record carries no property-damage total for it. A National Weather Service cooperative observer in Dierks measured 16.17 inches of rain, which set the Arkansas 24-hour rainfall record. The National Weather Service (Shreveport) documented 30 to 40 flooded structures in Howard County, including the Howard County Sheriff's Office and the Nashville Police Station, at least 13 high-water

rescues, and the loss of more than 200 head of cattle; the Howard County Jail took on water and about 30 inmates were evacuated to another facility. Locally, the flood put Dierks City Park under water (destroying its baseball fields), cut off Highway 278, flooded the Weyerhaeuser mill and Possum Hollow Road, and stranded much of south and southeast Dierks, while at Nashville it flooded the city building, the fire station, and the Dollar Store (NCEI Storm Events event 833027).

Probability of Future Events

With 40 combined flood events in the 26-year record, the county averages roughly 1.5 flood events per year, meaning **flooding is a near-annual event** somewhere in the planning area. The FEMA National Risk Index assigns riverine flooding an annualized frequency of about 0.93 for the county. Flash flooding, the dominant mode, occurs most years.

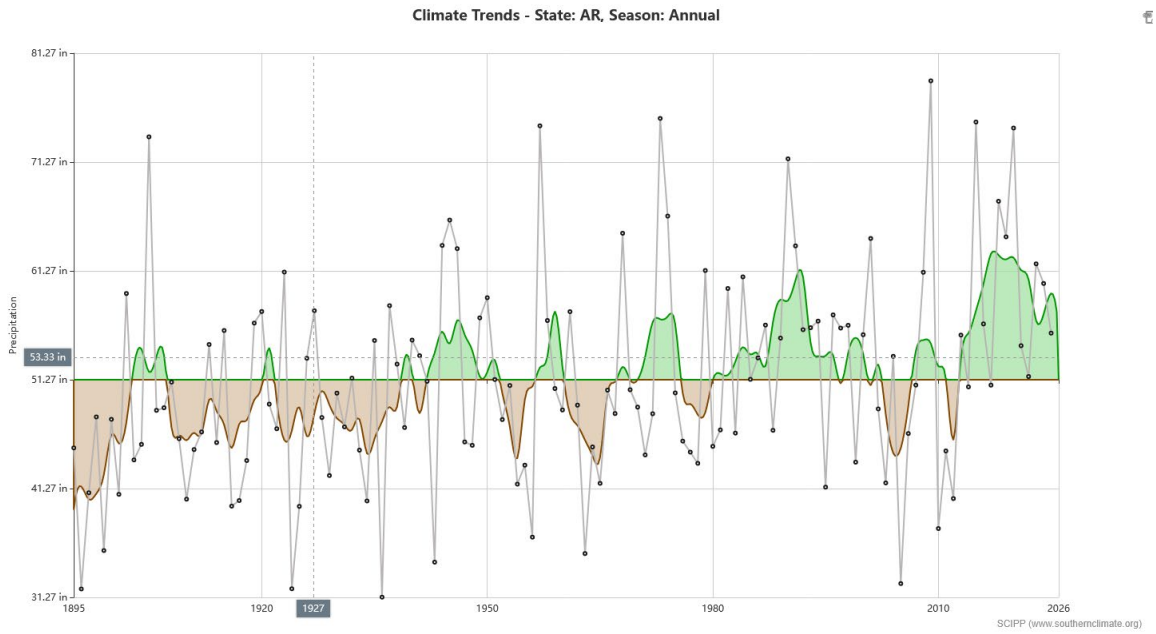


Figure 3-6. Annual precipitation trend for Arkansas, 1895-2026, relative to the long-term mean (about 53 inches). Wet years (green) drive riverine and flash flooding; the recent decade has trended wetter. Source: SCIPP / Southern Climate Impacts Planning Program.

Jurisdiction Vulnerability

- **City of Dierks** carries the highest regulated-river flood exposure. It sits on the Saline River immediately below Dierks Lake, so river stages and flooding there are tied to rainfall and to releases from the Dierks project. Active floodplain management and coordination with the USACE on releases are its most critical needs. In the July 16, 2019 flash flood (the remnants of Tropical Storm Barry, which dropped a state-record 16.17 inches at Dierks) the city lost its park and baseball fields, saw the Weyerhaeuser mill, Highway 278, and Possum Hollow Road go under water, and lost cars and cattle to the floodwater; the City Building and the Senior Citizen Center have flooded and lack backup generators.
- **City of Nashville** carries the highest flash-flood risk to developed property because of its concentration of streets, parking lots, and structures and its urban drainage. The July 2006 flash

flood (the county's largest recorded flood loss) struck Nashville. Urban stormwater capacity is the key concern, along with low-water crossings on the city's edges. The city reports that Henderson Street, Hale Street, and Sypert Street at their intersections with Main flood from an overwhelmed storm drain three to four times a year and must be closed, and that City Hall, the Police Station, and the Fire Department have all taken on floodwater and have no backup generators. In the July 16, 2019 flash flood the water flowed down the Mine Creek area and Main street and flooded the local nursing home.

- **Town of Tollette** is exposed to riverine and flash flooding in the south-central county (it was among the places affected by the February 2023 flooding) and **is not currently in the NFIP**, which limits residents' access to flood insurance and the town's floodplain management authority. Joining the NFIP is a priority action. Flooding of Pump Station Street (a creek crossing) during extreme rain cuts off homes, and none of the town's facilities (City Hall, the fire department, the water well, the wastewater plant, and its two lift stations) have backup generators, so backup power and manhole repairs to stop stormwater infiltration are the town's leading needs.
- **City of Mineral Springs** experiences localized flash flooding at low crossings and from small tributaries in the southern county; it participates in the NFIP and maintains floodplain management.
- **Unincorporated Howard County** has numerous low-water crossings and rural roads along the Cossatot, Saline, Little Missouri, and Rolling Fork drainages that flood and cut off rural access. The county road department reports that Kirby School Road (Sandy Branch), Mt. Carmel Road (Messer Creek), Pinkerton Road and Faulkner Road (both Saline River), Gillham Lake Road (Camp Creek), and Barton Bethel Road (Mine Creek) each flood about twice a year and are closed. Identifying and improving these specific crossings is a recurring need and a mitigation action; the County Judge and road department maintain the working list of these crossings.
- **School Districts** report that no campus is built in a mapped flood zone; the principal flood concern for the districts is bus-route access on rural roads and low-water crossings that flood. The Umpire School District reports that Tollet Road and Pinkerton Road flood and affect campus access (a bridge has since been installed on Pinkerton), and the Nashville Primary and Elementary buildings take on water during heavy rain.

To quantify this exposure, the effective FIRM flood-zone data (the National Flood Hazard Layer vector data) was overlaid on the jurisdiction boundaries and on key critical facilities. About 14 percent of the county lies within the mapped Special Flood Hazard Area (SFHA), the 1 percent annual chance floodplain. The results by jurisdiction are below.

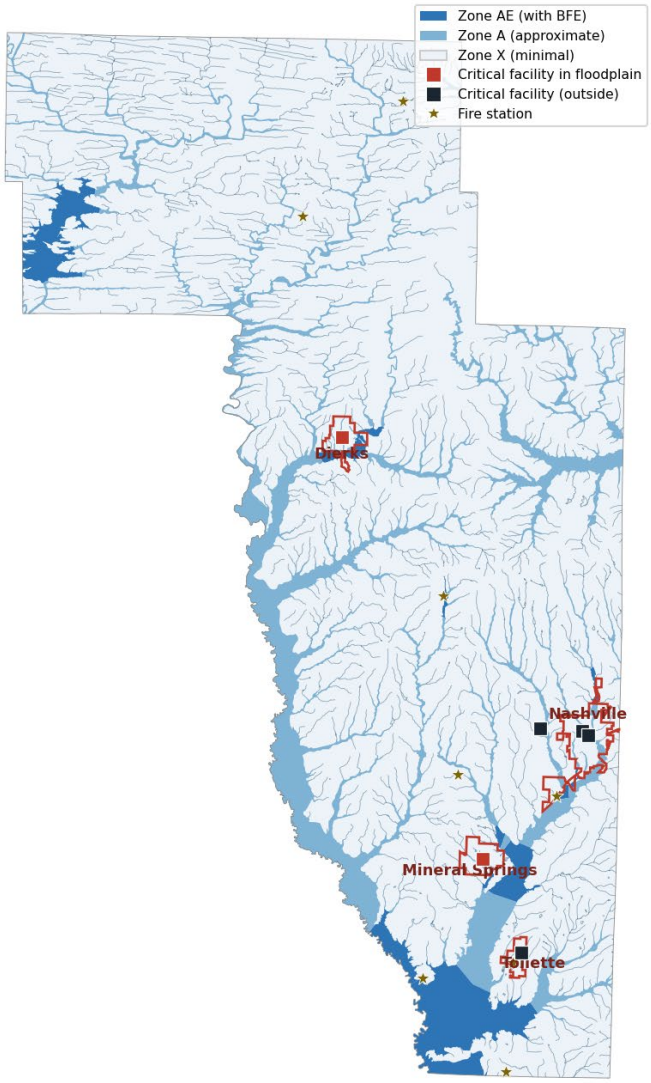
Jurisdiction	Land area (sq mi)	Share in floodplain (SFHA)	Share in detailed AE zone
Dierks	1.8	20.8%	10.0%
Nashville	4.7	18.0%	2.3%
Mineral Springs	2.0	6.2%	0.4%
Tollette	1.0	None mapped	None
Unincorporated Howard	585.7	14.2%	3.8%

County			

Source: effective Howard County FIRM (DFIRM 05061C, effective December 3, 2010), Zones A and AE, overlaid on jurisdiction boundaries.

Dierks is the most flood-exposed municipality, with about one-fifth of the city in the floodplain and the largest share in the detailed AE zone, consistent with its location on the Saline River below Dierks Lake. Nashville follows at 18 percent. Tollette has no mapped Special Flood Hazard Area; because the town has not been studied in detail and does not participate in the NFIP, the absence of a mapped floodplain should not be read as an absence of flood risk, which reinforces the recommended action for Tollette to join the NFIP. Of the key critical facilities tested, the Mineral Springs and Dierks municipal centers fall within the mapped floodplain, while Howard Memorial Hospital, the Nashville School District office, and Nashville City Hall lie just outside it (roughly 180 to 225 meters from the floodplain edge). Facility points are geocoded from street addresses and are approximate; the floodplain status of any specific structure should be confirmed with an elevation certificate.

Figure 9. FEMA Flood Hazard Zones and Critical Facilities — Howard County, Arkansas



Special Flood Hazard Area (1% annual chance): Zone AE (with base flood elevations) and Zone A (approximate). Squares = critical facilities (red = within mapped floodplain). Stars = fire stations. Effective FIRM 05061C (12/03/2010); facility points geocoded from addresses (approximate).

Figure 3-7. FEMA flood hazard zones and critical facilities in Howard County, from the effective FIRM (DFIRM 05061C). The Special Flood Hazard Area follows the Cossatot, Saline, and Little Missouri corridors and the creeks through Nashville, Dierks, and Mineral Springs. Red squares mark critical facilities within the mapped floodplain.

Transportation exposure (bridges). Because flooding cuts access as often as it damages buildings, the planning team reviewed the FHWA National Bridge Inventory for Howard County. All 116 inventoried bridges in the county cross water, so the road network is broadly exposed to stream flooding and scour. Four bridges are rated in poor condition (a minimum component rating of 4 or below): US 278 over the Cossatot River and US 278 over Baker Creek in the western county (both built 1965), County Road 13 over Plum Creek (1965), and a 1930 city bridge over a Nashville drainage ditch. Four additional bridges are flagged scour-critical. The two US 278 structures matter most for resilience: a flood-driven failure there would sever the primary east-west route across the western county. The County Judge and road department should maintain a working list of flood-prone

crossings and deficient bridges and pair it with the Arkansas Department of Transportation for the state-maintained structures.

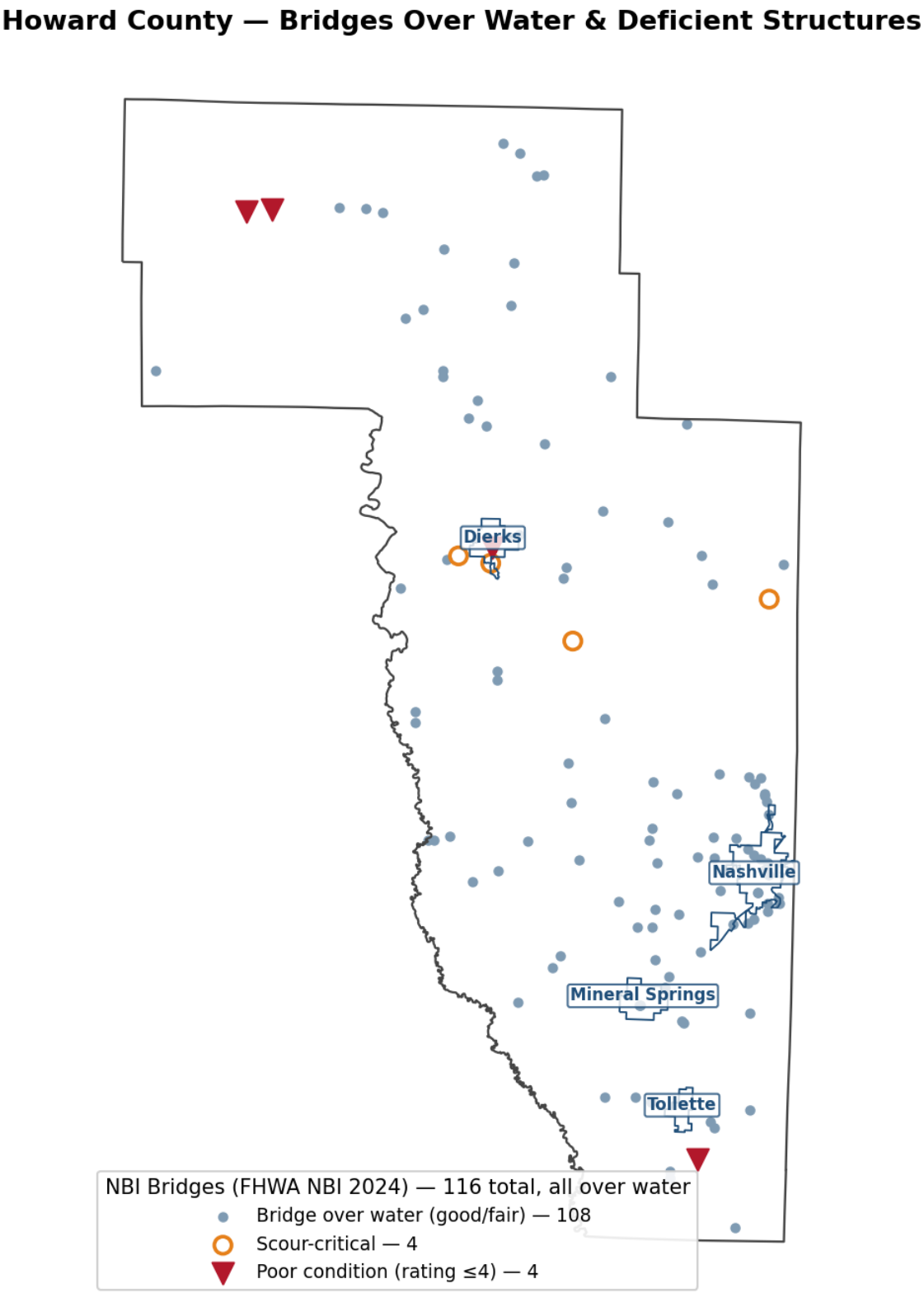


Figure 3-7b. Bridges over water in Howard County (FHWA National Bridge Inventory 2024). All 116 bridges cross water. Red triangles mark the four poor-condition bridges (two on US 278 over the Cossatot River and Baker Creek); orange circles mark the four scour-critical structures.

Gauge thresholds (riverine). Riverine flood risk on the main-stem rivers is monitored at National Weather Service and USACE gauges. On the Little Missouri River (the county's northeastern boundary), the NWS gauge near Boughton (BHTA4) carries an action stage of 19 feet, a flood (minor) stage of 20 feet, a moderate flood stage of 23 feet, and a major flood stage of 25 feet; upstream, the river is regulated by Narrows Dam (Lake Greeson) and gauged at Murfreesboro (USGS 07361000). The Cossatot River is regulated by Gillham Dam and monitored below the dam (USACE gauge GLTA4) and downstream near De Queen (DEQA4, USGS 07340500). The interior streams that drive the county's flash flooding, the Saline River at Dierks below Dierks Lake, Mine Creek through Nashville, Rolling Fork, and the smaller tributaries, are largely ungauged; flood-frequency estimates for these should be developed from USGS StreamStats and paired with the crossing list (see Data Deficiency).

Source: NWS Advanced Hydrologic Prediction Service and USACE Little Rock District. Full flood-category thresholds for DEQA4, NADA4, and the Murfreesboro gauge should be entered from water.noaa.gov at adoption.

Loss Estimate

The FEMA National Risk Index models riverine/inland flooding Expected Annual Loss for Howard County at **$4,452,548 per year**, rated Relatively Low only because of the county's small building stock. This is the single largest modeled annual loss of any hazard in the county. Actual recorded flood damage in the Storm Events period was about $250,000, concentrated in the 2006 Nashville flash flood; the gap between the modeled and recorded figures reflects both the regulating effect of the two flood-control dams and the under-recording of rural flood damage. The 2019 event had real damages but is not reported in the databases.

Data Deficiency

The county should incorporate the effective FEMA FIRM panels (effective December 3, 2010) and any Base Level Engineering data for the Cossatot River, Saline River, Little Missouri River, and Rolling Fork as map exhibits (see Appendix C). Gauge-based flood-stage thresholds are available for the Cossatot below Gillham Dam (USACE gauge GLTA4) but should be compiled for the Saline at Dierks and the Little Missouri, which are less instrumented for local forecasting; identifying flood-prone structures along those corridors is a data gap to be addressed as Base Level Engineering and local survey data become available. According to the Arkansas Natural Resources Division, there are no identified repetitive loss properties in the planning area; this should be reconfirmed at adoption.

Earthquake

Description

A sudden slip on a fault, with resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth (USGS 2018).

Earthquakes occur from the sudden release of stress in the Earth's crust built up by the motion of tectonic plates. The movement creates seismic waves, the most damaging of which are the secondary (S) waves. While strong earthquakes are not common in Arkansas, the state lies near the New Madrid Seismic Zone (NMSZ) in the Mississippi Valley, and a major NMSZ event would be felt across Arkansas. Earthquake magnitude is measured on the moment magnitude scale, where each point represents a roughly 32-fold increase in energy release.

Howard County lies in the Gulf Coastal Plain and Ouachita foothills of southwest Arkansas, well away from any active seismic source zone and far from the NMSZ rupture zone in the northeast corner of the state.

Extent, Magnitude, or Severity

Earthquake extent is measured on the moment-magnitude and Modified Mercalli Intensity scales. Howard County has no recorded local seismicity; the maximum credible event is a distant New Madrid Seismic Zone earthquake (magnitude 7.0 or greater), which this far southwest would produce only weak shaking, roughly Modified Mercalli Intensity II to IV, with a low likelihood of structural damage.

Location

The earthquake hazard is uniformly very low across the entire county. This is one hazard where exposure genuinely does not vary by jurisdiction, because the controlling scenario is a distant regional event, not a local fault. Stating that the risk is uniformly low countywide is the accurate framing.

Previous Occurrences

The USGS earthquake catalog shows **no earthquakes of magnitude 2.0 or greater within Howard County for the 75-year period 1950 through 2025**. A control query over the central Arkansas (Guy-Greenbrier/Enola) swarm zone returned a large list over the same period, confirming that the zero result for Howard County reflects genuine absence of recorded seismicity rather than a data error. There is no history of earthquake damage in the county.

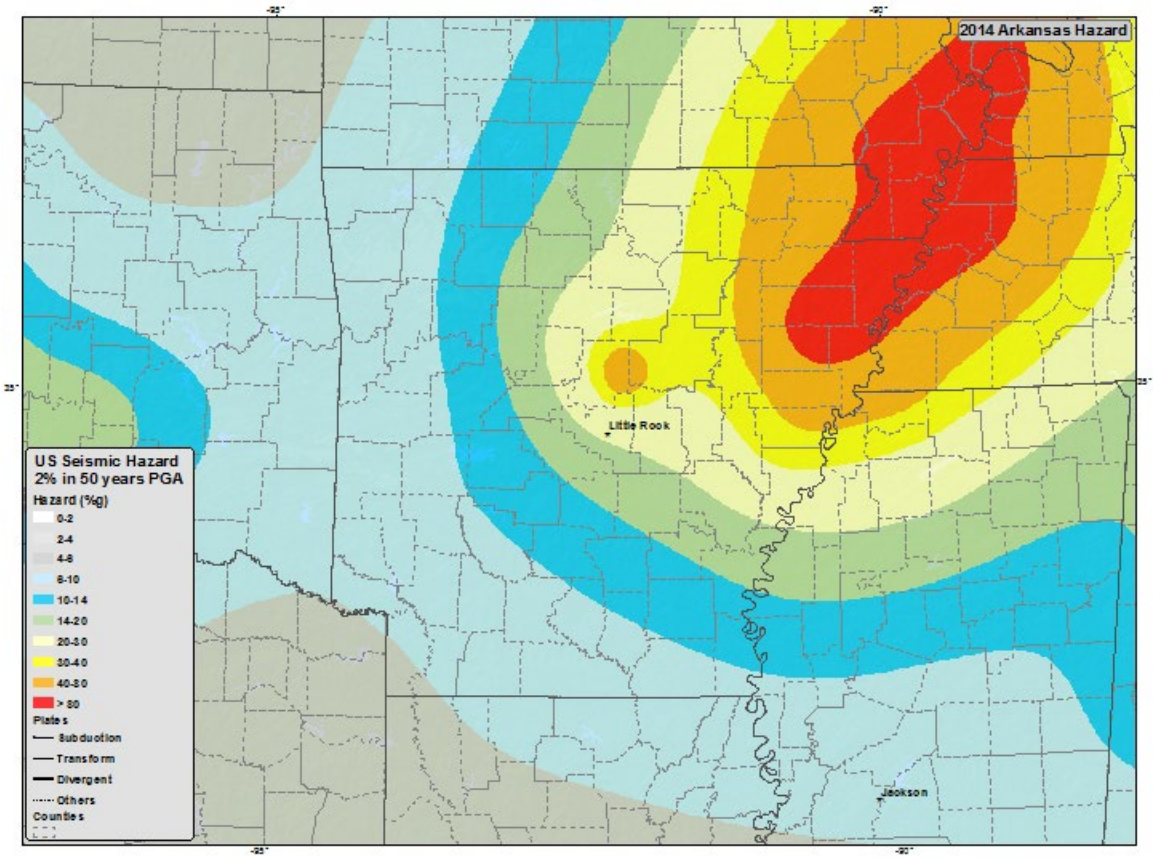


Figure 3-8. Arkansas seismic hazard (2 percent probability of exceedance in 50 years, peak ground acceleration). The high-hazard New Madrid Seismic Zone (red) is in the far northeast of the state; Howard County, in the southwest corner, sits in the lowest hazard band. Source: USGS / Arkansas 2014 seismic hazard.

Probability of Future Events

Because there is no recorded local seismicity, the probability of a damaging local earthquake is **less than 1 percent (Very Low)**. The only credible large-magnitude scenario is a major NMSZ event (magnitude 7.0 or greater), which this far southwest would likely produce only weak shaking, roughly Modified Mercalli Intensity II to IV, with a low likelihood of structural damage.

Jurisdiction Vulnerability

All jurisdictions carry the same very low earthquake *exposure*, because the controlling scenario is a distant New Madrid event rather than a local fault. The *consequence*, however, would fall on two different building types in two different places, and the structure-level housing data (Section 2) make the distinction concrete. In downtown Nashville, roughly 45 percent of the housing stock predates 1970 (ACS Tract 9503), the older masonry and brick construction most prone to cracking and falling parapets under ground shaking, even though Nashville has almost no manufactured housing (1.8 percent of its residences). In the rural county and the small towns the exposure reverses: manufactured homes make up 17.1 percent of residences in Mineral Springs, 12.3 percent in Dierks, 9.6 percent in Tollette, and 7.4 percent across the unincorporated county (654 manufactured structures countywide in the USACE National Structure Inventory), and unanchored units can shift off their piers or blocking even in weak shaking. So the same felt NMSZ earthquake

would express itself as cracked masonry in the older city core and as displaced manufactured homes in the countryside, though in every case only minor, non-structural damage is anticipated from the maximum credible event. This building-stock contrast also argues for the same low-cost measures that serve the wind and tornado hazards, manufactured-home anchoring in the rural county and small towns, and it is the reason a single "uniformly low, uniform consequence" statement would understate the real, if modest, difference between Nashville and the manufactured-home jurisdictions.

Loss Estimate

The FEMA National Risk Index models an earthquake Expected Annual Loss of **$346,791 per year (Relatively Low)** for the county. This modeled figure reflects the regional New Madrid scenario applied across the building stock, not local seismicity, and should be read alongside the USGS finding of zero recorded local events. No historical earthquake loss has occurred in Howard County.

Data Deficiency

The absence of catalogued events does not prove zero hazard; very small or pre-instrumental historic events may have gone unrecorded. The magnitude 2.0 detection threshold and the 1950 start date are the documented limits of the USGS data pull. The modeled NRI loss and the zero observed record are reconciled in the narrative above.

Thunderstorms (Lightning, Hail, and Severe Thunderstorm Winds)

Thunderstorms are the most frequent damaging hazard in Howard County. They produce three distinct sub-hazards, each profiled below: lightning, hail, and severe thunderstorm (straight-line) winds.

Description

Lightning

A lightning stroke is a rapid discharge of electrical energy in the atmosphere (NWS 2009). Lightning forms from charge separation within thunderstorm clouds. Thunder is created by the rapid heating of air to roughly 18,000 degrees, hotter than the surface of the sun. Lightning can strike as far as 10 miles from a storm and is capable of starting structure and wildland fires, killing or injuring people, and damaging electronics and electrical systems.

Hail

Showery precipitation in the form of irregular pellets or balls of ice more than 5 mm (0.2 inches) in diameter, falling from a cumulonimbus cloud (NWS 2009). Hail forms when supercooled raindrops are carried aloft by strong updrafts and freeze; stronger updrafts produce larger hail. Hail of one inch in diameter or greater is considered severe and can damage roofs, vehicles, windows, crops, and anything left unsheltered.

Severe Thunderstorm Winds

High winds are sustained non-convective winds of 40 mph or greater for an hour or longer, or gusts of 58 mph or greater. Severe thunderstorm winds are winds of 58 mph or greater produced by a thunderstorm. Straight-line winds, downdrafts, downbursts, and microbursts are all capable of significant damage and are distinct from tornadic (rotating) winds. These winds rip off roofing, overturn or destroy manufactured homes, and bring down trees and power lines.

In Howard County, severe thunderstorms occur most often in spring and summer and frequently combine all three sub-hazards in a single event. They are the leading cause of the county's recurring power outages and storm damage.

The National Weather Service severe-storm thresholds and their local relevance are summarized below.

Measure	Severe Threshold	Local Relevance in Howard County
Hail diameter	1.00 in or greater (quarter size)	124 hail events recorded 2000-2026
Significant hail	2.00 in or greater (hen-egg size)	7 reports of 2-inch-plus hail in the county
Thunderstorm wind gust	58 mph (50 kt) or greater	134 wind events recorded; damages structures and trees
Significant wind gust	75 mph or greater	Recorded up to 85 mph (Nashville, May 2000); major tree, roof, and structural damage

Statewide climatology places southwest Arkansas in a moderate-to-elevated zone for the severe-thunderstorm sub-hazards, as shown in the regional probability maps below.

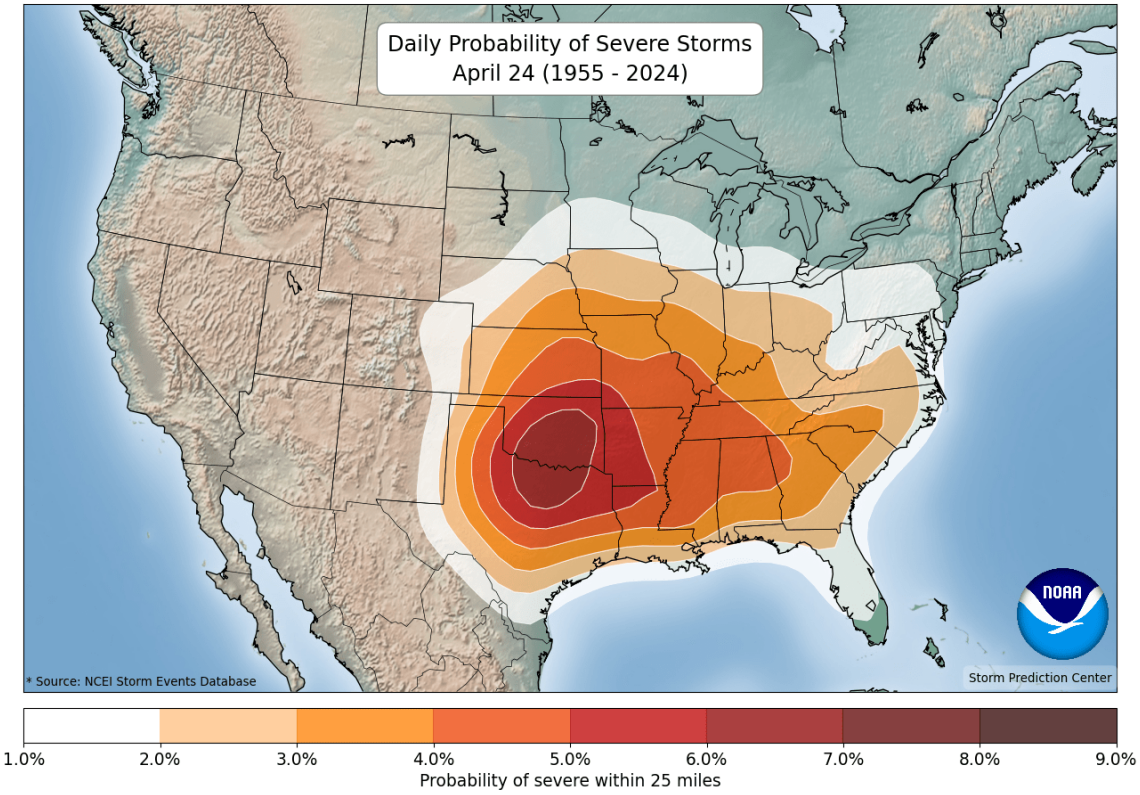


Figure 3-9. Arkansas severe-thunderstorm annual probability. (Source: NOAA / National Weather Service.)

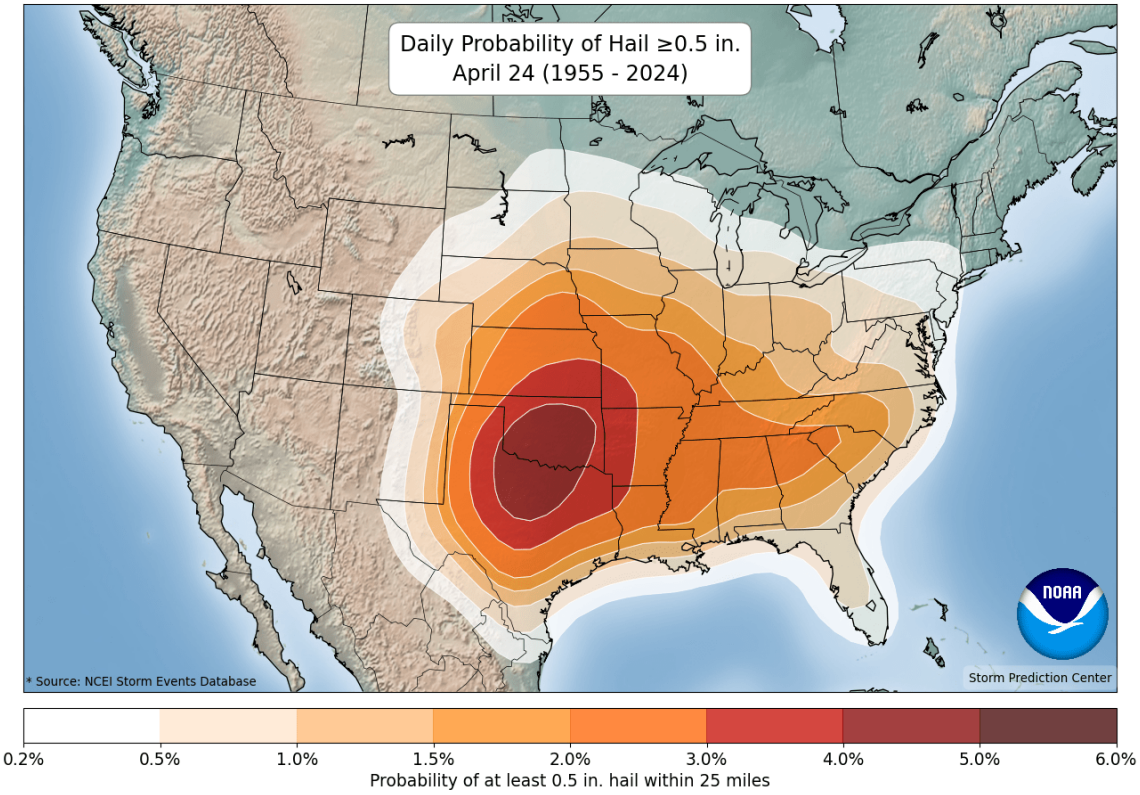


Figure 3-10. Arkansas hail probability. (Source: NOAA / National Weather Service.)

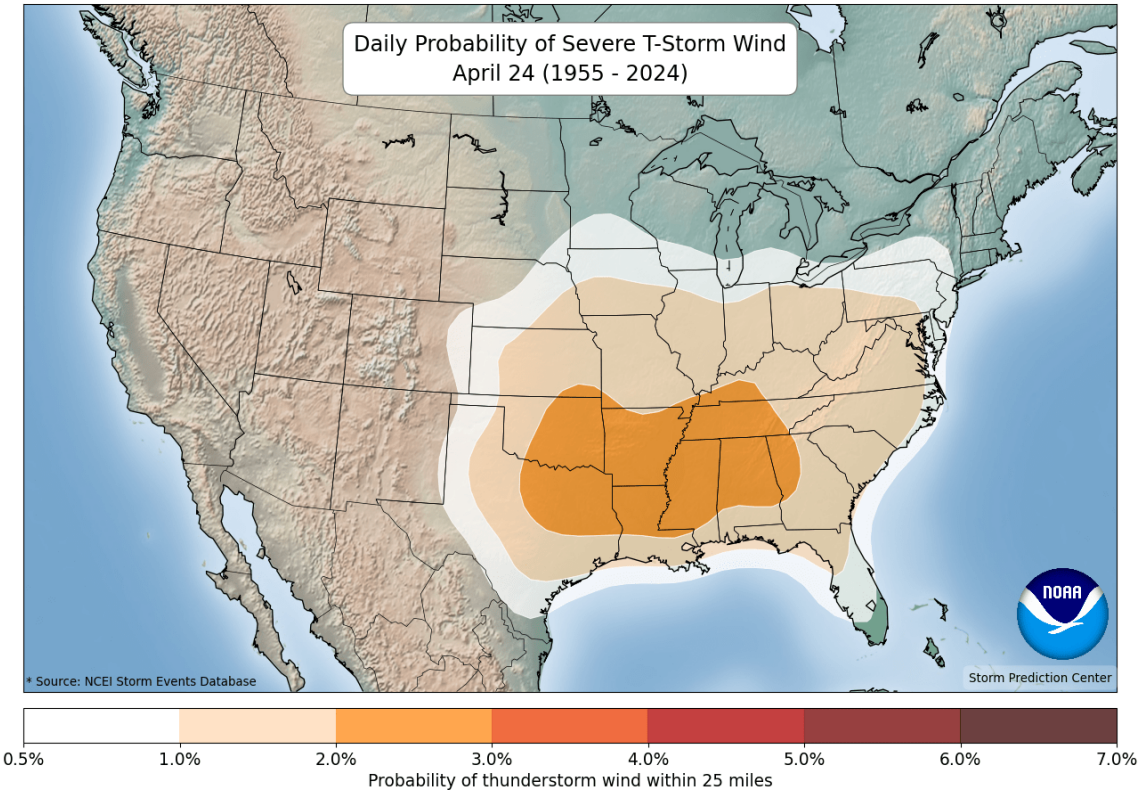


Figure 3-11. Arkansas severe-wind probability. (Source: NOAA / National Weather Service.)

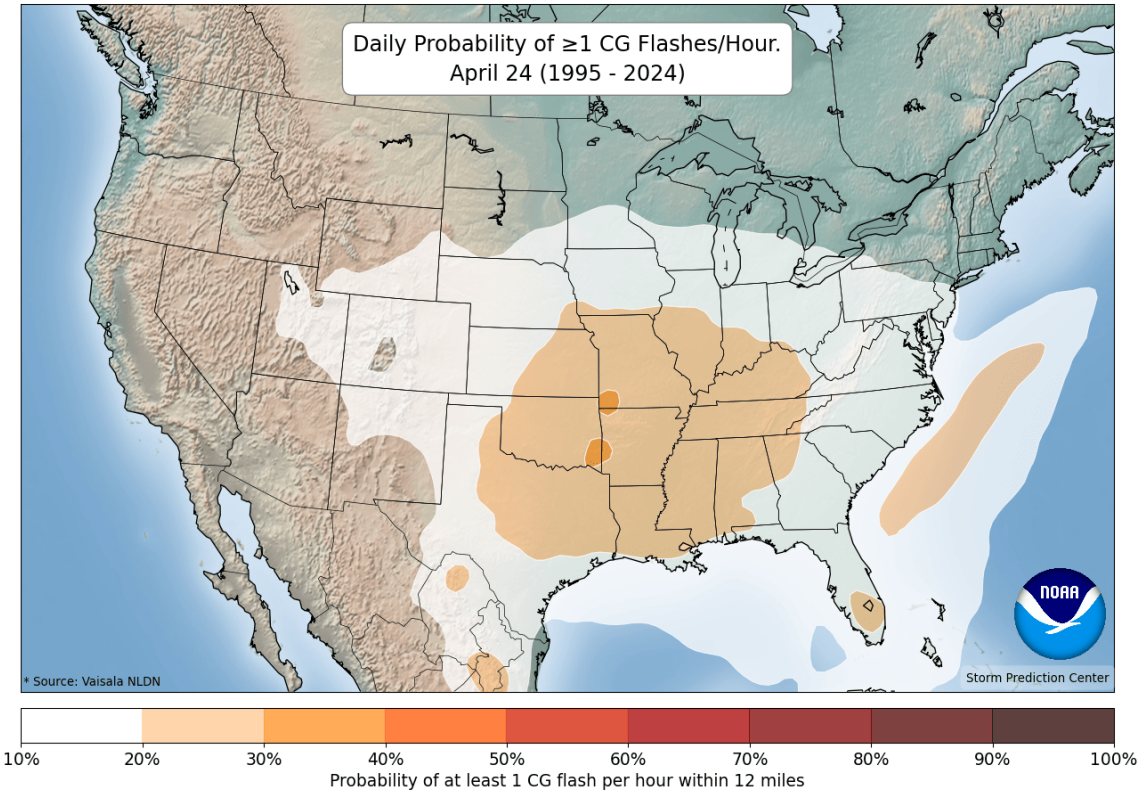


Figure 3-12. Arkansas lightning daily probability. (Source: NOAA / National Weather Service.)

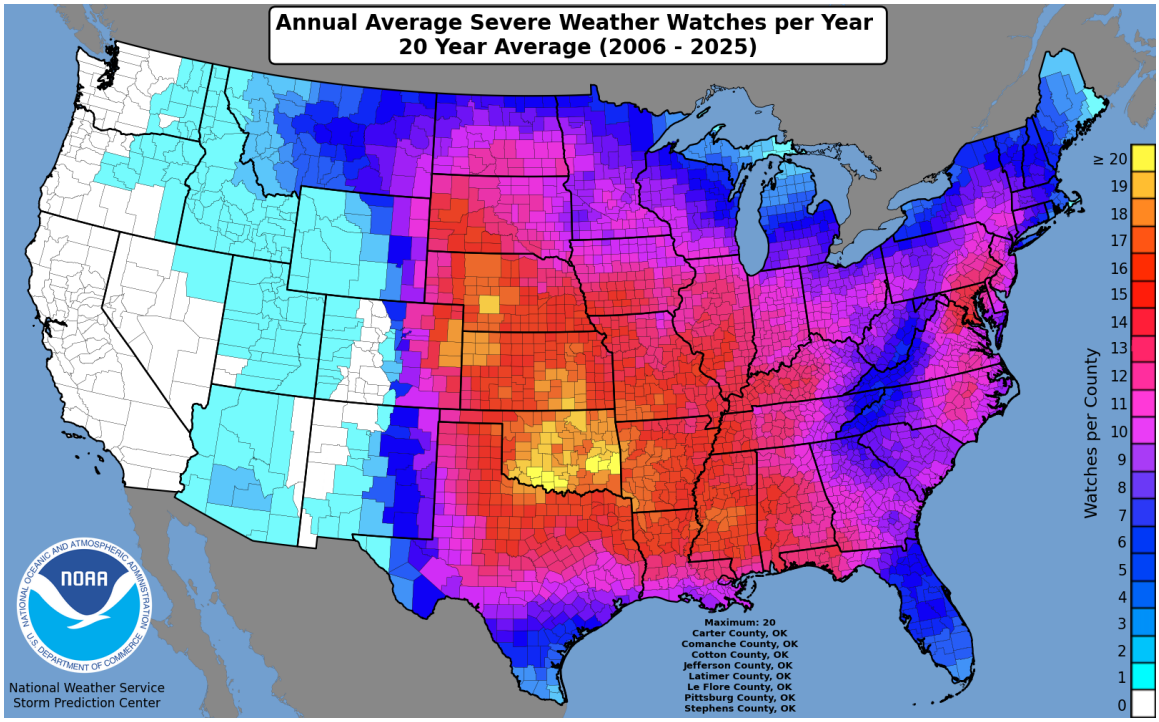


Figure 3-13. Twenty-year severe-weather watch and warning history for southwest Arkansas. (Source: NOAA.)

Extent, Magnitude, or Severity

Severe thunderstorm extent is measured by hail diameter, wind speed, and lightning. Severe hail is 1 inch in diameter or greater (recorded up to 2 inches or more in the county) and severe thunderstorm wind is 58 mph or greater (recorded up to 85 mph at Nashville in May 2000). Lightning accompanies essentially every thunderstorm.

Location

Thunderstorms affect the entire county, but the **consequences concentrate where people, structures, trees, and overhead utilities are densest, and where housing is weakest**. The highest aggregate exposure is in and around Nashville (the largest concentration of structures and overhead power), and the highest per-structure vulnerability is in the manufactured-home pockets across the rural county and in the smaller towns.

Previous Occurrences

NOAA Storm Events (2000-2026) records 134 thunderstorm wind events (about $1,952,000 in property damage), 124 hail events (with 7 reports of 2-inch or larger hail), and no recorded lightning events (lightning is under-reported in Storm Events). Notable wind events include 85 mph winds at Nashville on May 12, 2000 ($1,100,000), 60 mph winds at Nashville on June 2, 2004 ($500,000), 55 mph winds at Nashville on June 11, 2003 ($130,000), and 55 mph winds at Nashville on July 23, 2014 ($35,000). Severe thunderstorms have contributed to many of the county's severe-storm federal disaster declarations (DR-1528, DR-1751, DR-1845, DR-1975, DR-4226, and EM-3627).

Probability of Future Events

With more than 250 combined thunderstorm-related events in the 26-year record, **severe thunderstorms are a certainty every year**. The FEMA National Risk Index assigns strong wind an annualized frequency of about 3.69 and hail about 4.78 for the county, meaning the county can expect several damaging wind and hail events each year. Lightning is under-reported in Storm Events but is essentially continuous during the storm season (NRI models a lightning frequency of about 65 events per year).

Jurisdiction Vulnerability

The same 654 manufactured homes that drive the tornado life-safety risk (concentrated in Mineral Springs, Dierks, Tollette, and the rural county) are also the structures most exposed to straight-line thunderstorm winds, which overturn and destroy manufactured homes at gust speeds well below tornado strength.

- **City of Nashville** carries the highest aggregate thunderstorm loss because it contains the densest concentration of structures, overhead power and communication lines, and large facilities (the hospital, schools, poultry plants, and commercial corridor). Wind and lightning outages here affect the most people and the most critical infrastructure, and the recorded record shows the county's largest wind losses have repeatedly occurred at Nashville.
- **Unincorporated Howard County** carries the highest per-structure vulnerability. The county's many manufactured and mobile homes are extremely susceptible to straight-line wind damage, and rural areas depend on long overhead distribution lines (AEP/SWEPCO and the rural electric cooperatives) that are routinely damaged by wind and falling trees, producing long-duration rural outages. Volunteer-only fire coverage lengthens response to lightning-caused fires.
- **Cities of Dierks, Mineral Springs, and the Town of Tollette** share the manufactured-home and overhead-line vulnerability with limited local resources to clear debris and restore service quickly.
- **School Districts (Nashville, Dierks, Mineral Springs, and Umpire)** are vulnerable to roof and window damage from hail and wind and to power loss; rural Dierks and Mineral Springs campuses are especially exposed to tree-fall and lightning.

Loss Estimate

The FEMA National Risk Index models the following Expected Annual Loss for the thunderstorm sub-hazards in Howard County: **strong wind $371,783 per year**, **hail $603,133 per year**, and **lightning $185,333 per year**, all rated Relatively Low. Combined, the thunderstorm complex represents roughly $1.16 million in modeled annual loss, and the actual recorded property damage from thunderstorm wind alone (about $1,952,000) is among the highest recorded totals of any hazard in the county apart from winter storms and tornadoes.

Data Deficiency

Lightning is under-recorded in Storm Events (zero recorded events despite a high modeled frequency); lightning-caused fire and electronic-equipment losses are not systematically captured. Manufactured-home counts by jurisdiction (needed to refine wind vulnerability) should be drawn from ACS Table B25024 at the next update.

Tornado

Description

A violently rotating column of air, usually pendant to a cumulonimbus, with circulation reaching the ground (NWS 2009). Tornadoes generally form from severe (especially supercell) thunderstorms and can also form along squall lines and in hurricane rainbands. They require moist air, instability, lift, and wind shear. Arkansas sees a spring peak in tornadoes but also experiences them in fall and winter. Tornado intensity is rated on the Enhanced Fujita (EF) scale from EF0 (weak) to EF5 (violent); strong and violent tornadoes (EF2 and above) account for only about one-third of tornadoes but the vast majority of fatalities and economic loss.

Tornadoes are a serious and recurring threat in Howard County. The county has experienced fatal tornadoes within the recorded period, and its large stock of manufactured housing makes the tornado hazard especially deadly here. The Enhanced Fujita scale is summarized below.

EF Rating	3-Second Gust (mph)	Typical Damage
EF0	65-85	Light: shingles and gutters peeled, branches broken, shallow-rooted trees pushed over
EF1	86-110	Moderate: roofs stripped, mobile homes overturned or badly damaged, windows and doors lost
EF2	111-135	Considerable: roofs torn off well-built homes, mobile homes destroyed, large trees snapped or uprooted
EF3	136-165	Severe: entire stories of well-built homes destroyed, vehicles lifted, trees debarked
EF4	166-200	Devastating: well-built homes leveled, cars thrown
EF5	over 200	Incredible: strong frame homes swept off foundations

The recorded maximum in Howard County is **EF3** (Dierks, April 2009), and the most likely intensity in any given event is EF0 to EF2. Because manufactured homes are destroyed even by EF1 winds, the life-safety risk in this county is high even for the weaker events that occur most often. The May 10, 2015 EF2 tornado at Nashville killed two people and injured eight, the deadliest single recorded event in the county.

The regional tornado climatology and Howard County's own recorded tornado history are shown below.

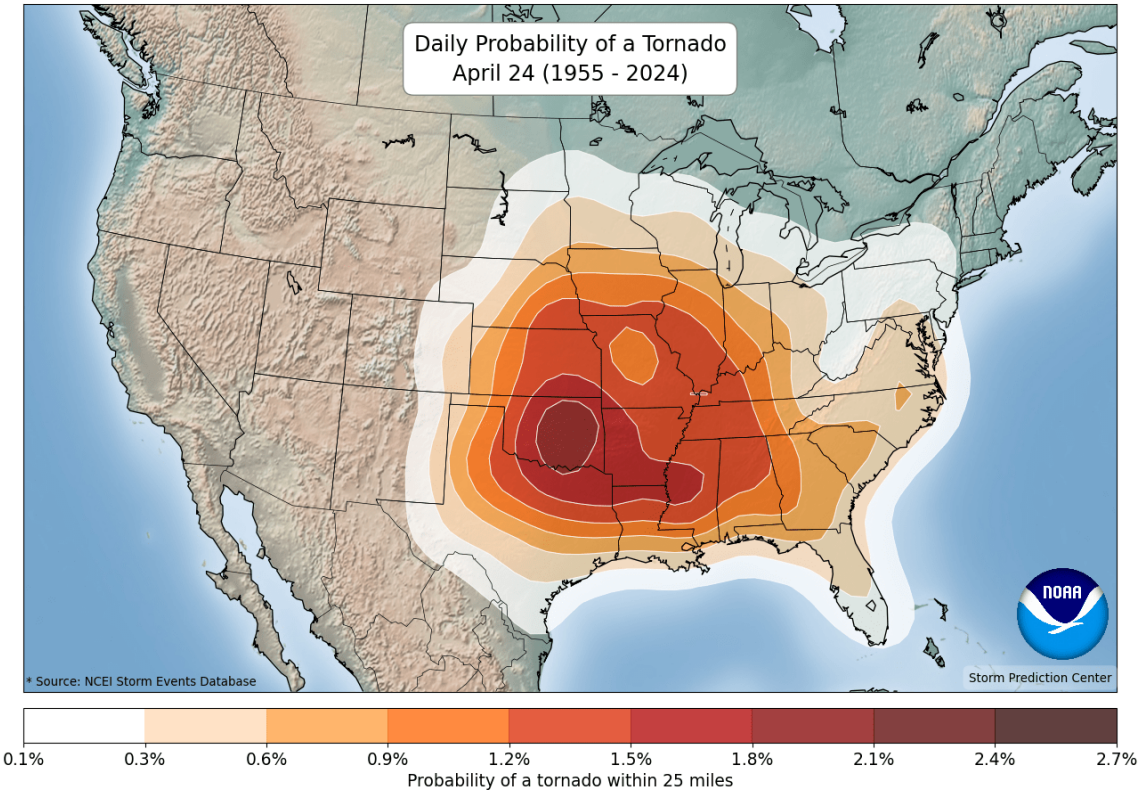


Figure 3-14. Arkansas tornado annual probability. (Source: NOAA / Storm Prediction Center.)

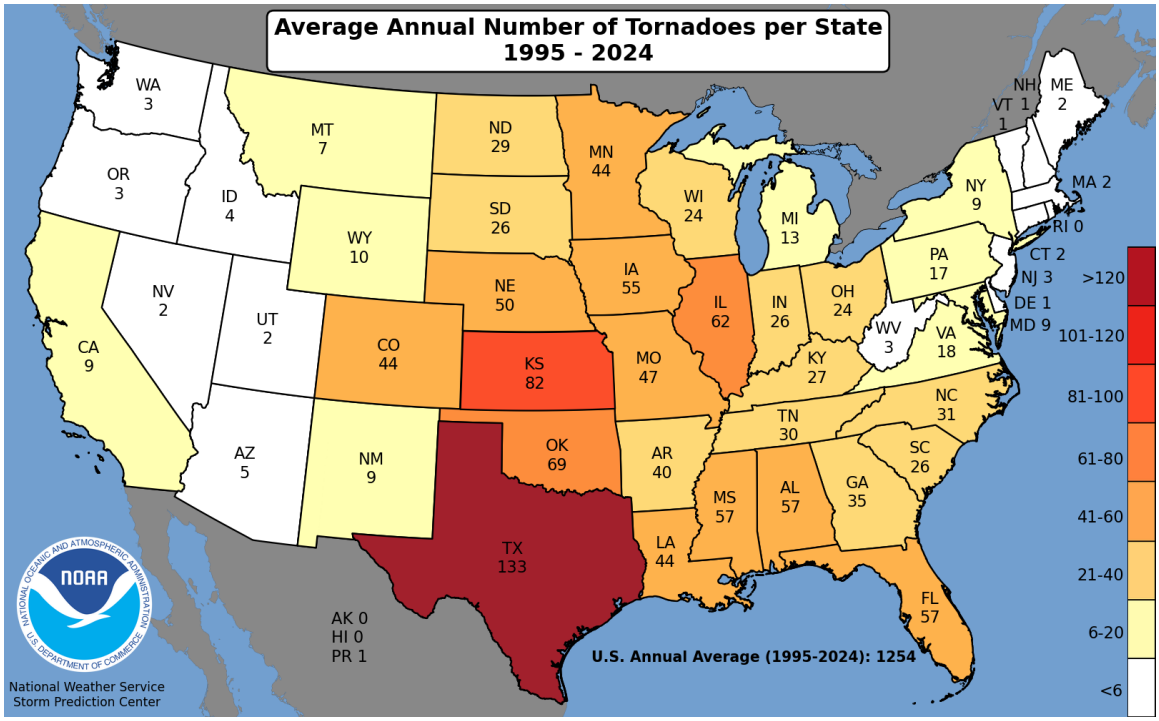


Figure 3-15. Average annual tornado occurrences by Arkansas county, 1995-2024. (Source: NOAA / Storm Prediction Center.)

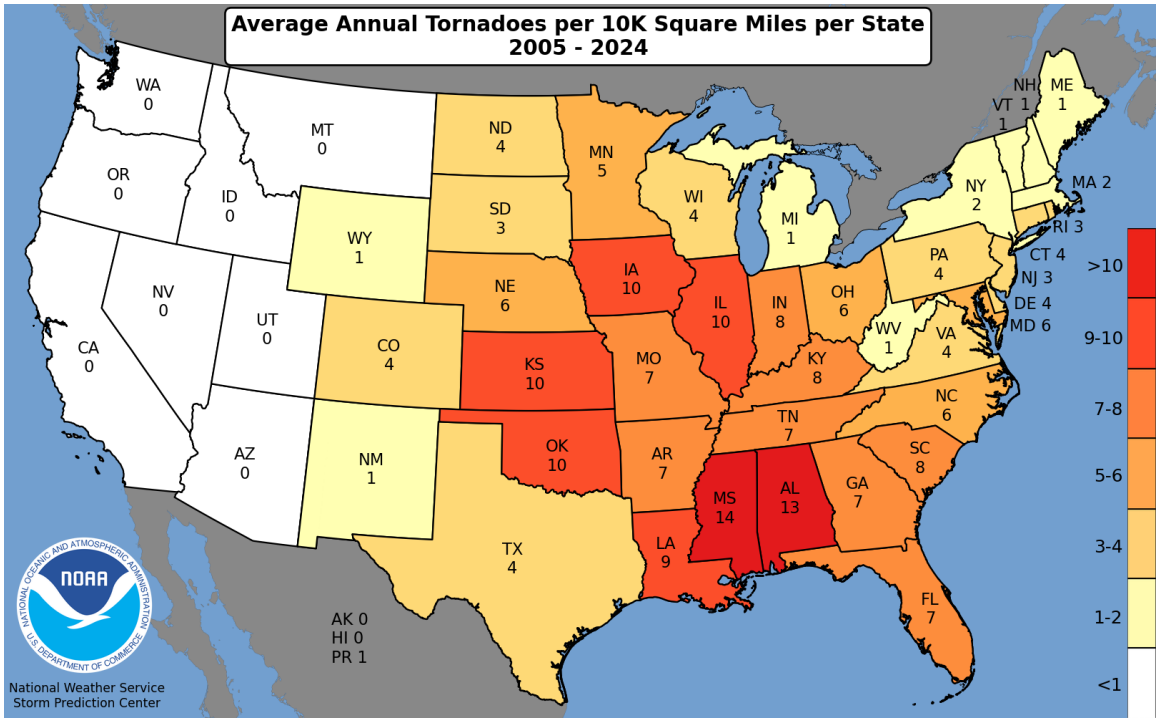


Figure 3-16. Tornadoes per 10,000 residents by state, 2005-2024. (Source: NOAA / Storm Prediction Center.)

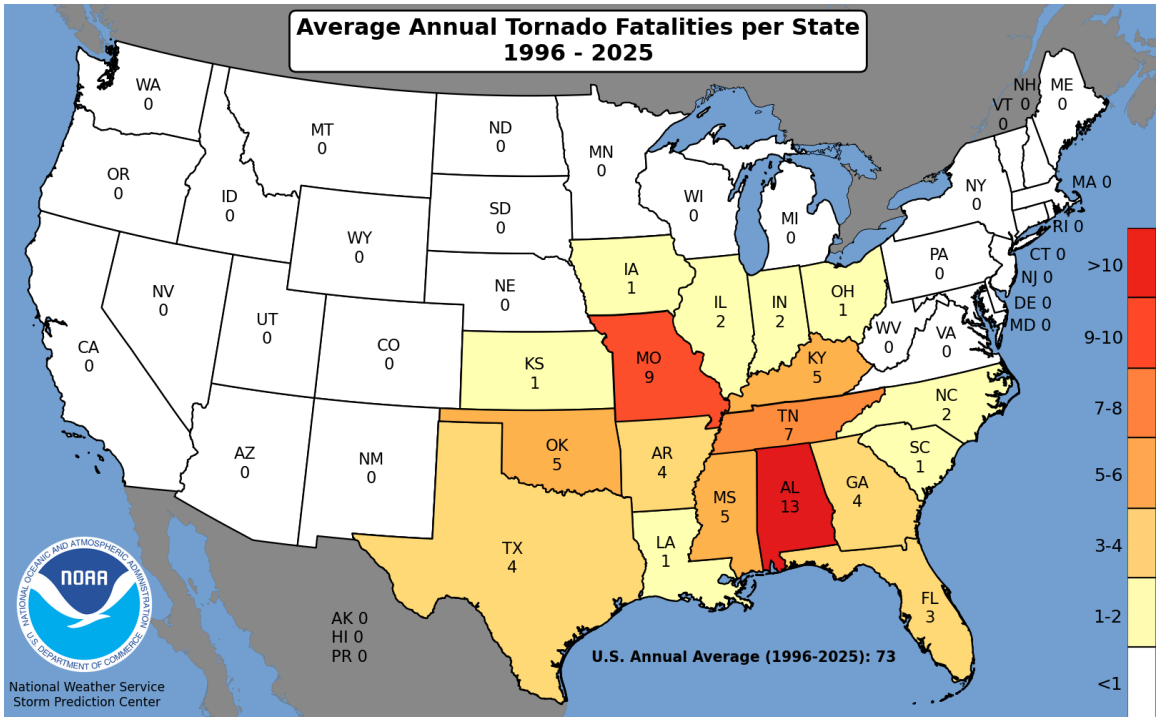
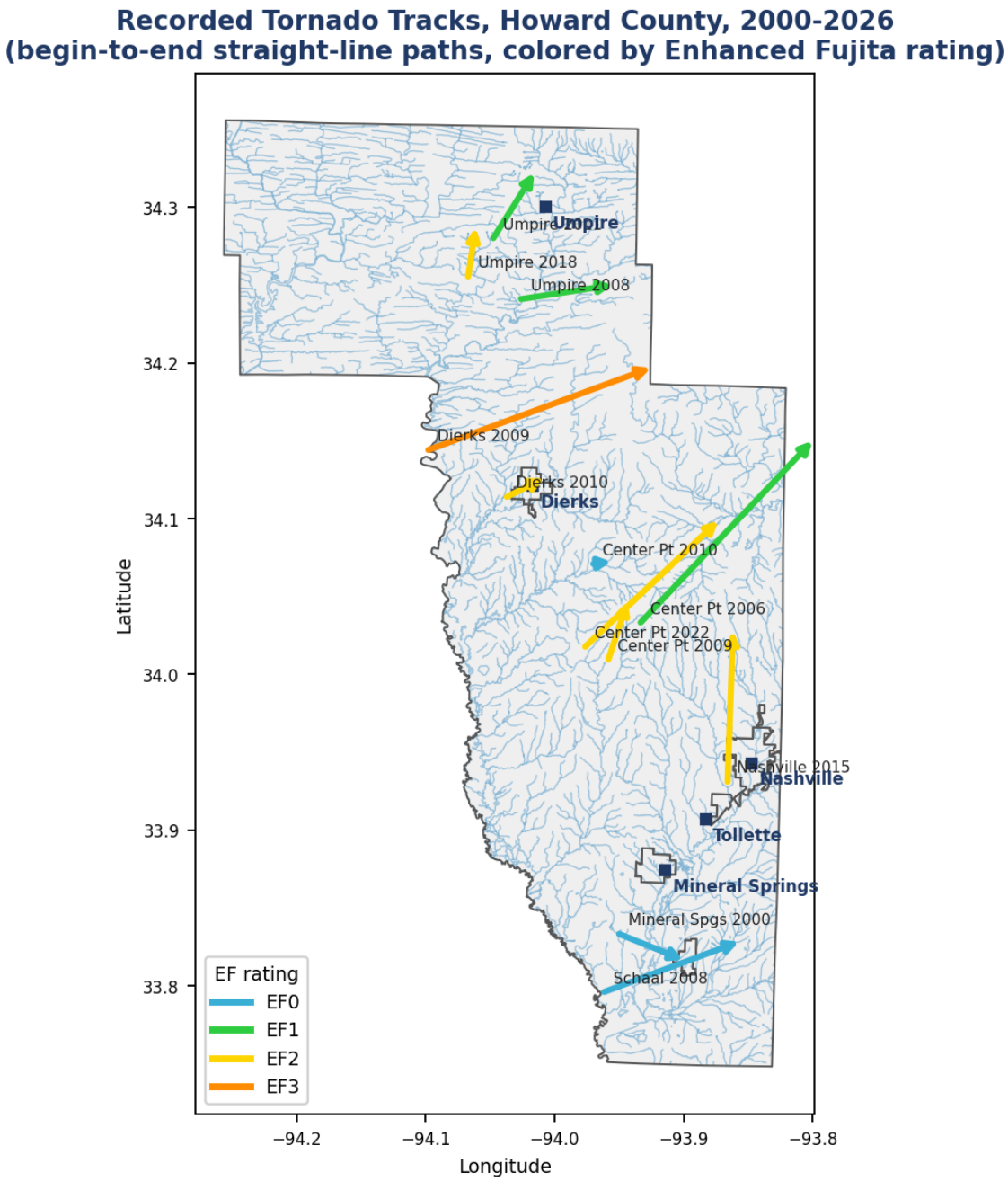


Figure 3-17. Arkansas annual storm-fatality statistics, 1996-2025. (Source: NOAA.)

Figure 3-17. Recorded Significant Tornadoes — Howard County, Arkansas

Significant recorded tornadoes 2000-2026 (NOAA Storm Events), plotted by community and Enhanced Fujita rating (marker size/color by EF). The May 10, 2015 Nashville EF2 caused 2 deaths and 8 injuries. Points are plotted at the named community and are approximate.

Figure 3-18. Recorded significant tornadoes in Howard County, 2000-2026, by community and Enhanced Fujita rating (NOAA Storm Events). The May 10, 2015 Nashville EF2 caused 2 deaths and 8 injuries.



Source: NOAA NCEI Storm Events Database (SPC tornado segments). Straight-line tracks may not reflect the exact ground path.

Figure 3-19. Recorded tornado tracks in Howard County, 2000-2026, drawn as begin-to-end straight-line paths and colored by Enhanced Fujita rating (NOAA Storm Events / Storm Prediction Center). Twelve tornadoes are recorded, ranging from EF0 to EF3 (the March 2009 Dierks-area EF3) and including the deadly May 10, 2015 Nashville EF2. Straight-line tracks may not reflect the exact ground path.

Extent, Magnitude, or Severity

Tornado extent is measured on the Enhanced Fujita (EF) scale, from EF0 to EF5. The recorded maximum in Howard County is EF3 (Dierks, 2009); the most likely intensity in any event is EF0 to EF2.

Because manufactured homes are destroyed even by EF1 winds, the life-safety extent is significant even for the weaker events that occur most often.

Location

Tornadoes can occur anywhere in the county, and there is no geographic boundary that exempts any jurisdiction. However, **vulnerability is not uniform**: it is driven by building type and population density rather than by location. The manufactured-home pockets of the rural county and the small towns face the highest life-safety risk, while Nashville faces the highest aggregate property and economic loss. Recorded tornadoes have struck Nashville, Dierks, Center Point, and Schaal.

Previous Occurrences

NOAA Storm Events (2000-2026) records 12 tornadoes in Howard County, causing 2 deaths, 9 injuries, and about $4,385,000 in property damage. Notable events include the May 10, 2015 EF2 at Nashville (2 deaths, 8 injuries, $1,500,000); the April 9, 2009 EF3 at Dierks ($1,500,000) and the April 9, 2009 EF2 at Center Point (1 injury, $500,000); the March 3, 2008 EF0 at Schaal ($200,000); the April 30, 2010 EF2 at Dierks ($200,000); and the November 4, 2022 EF2 at Center Point ($200,000). The county has tornado-specific federal declarations dating to 1968 (DR-239), 1979 (DR-574), 1982 (EM-3085), and 2009 (DR-1834), and tornadoes within many of its severe-storm declarations, including the April 2025 event (EM-3627).

Probability of Future Events

With 12 tornadoes in 26 years, the county averages about **0.46 tornadoes per year, or roughly one every two years**. The FEMA National Risk Index assigns an annualized tornado frequency of about 0.33. The expected intensity range is EF0 to EF2, with an EF3 in the record (Dierks 2009); no event above EF3 is recorded.

Jurisdiction Vulnerability

The structure-level inventory quantifies where that life-safety risk concentrates. The county has 654 manufactured homes (USACE NSI), heaviest in Mineral Springs (17.1 percent of residences), Dierks (12.3 percent), and Tollette (9.6 percent), and lightest in Nashville (1.8 percent). Because manufactured homes are destroyed even by EF1 winds, these small towns and the rural county, not the county seat, are where a weak and common tornado is most likely to be fatal.

- **Unincorporated Howard County** carries the highest life-safety risk because of its many manufactured and mobile homes, which are the structures most likely to be destroyed in even a weak tornado and most likely to cause injury or death to occupants. Several of the recorded tornadoes (Center Point, Schaal) struck rural parts of the county.
- **City of Nashville** carries the highest aggregate property, economic, and population risk, and has already suffered the county's deadliest recorded tornado (the 2015 EF2 that killed two and injured eight). A tornado through Nashville could damage the hospital, schools, the poultry plants, the commercial corridor, and the densest residential areas, and could disrupt employment for the whole county. Vulnerable populations are concentrated here, including the

hospital, long-term care facilities, schools, and the detention facility, all of which are difficult to evacuate.

- **City of Dierks** has been struck repeatedly (the 2009 EF3 and the 2010 EF2) and combines manufactured-home vulnerability with limited local warning and shelter resources.
- **City of Mineral Springs and Town of Tollette** combine manufactured-home vulnerability with limited local warning and shelter resources; residents depend on NOAA Weather Radio and access to nearby safe rooms.
- **School Districts (Nashville, Dierks, Mineral Springs, and Umpire)** could be closed for extended periods after a tornado from structural damage or utility loss, and face life-safety risk if a tornado strikes during school hours; all four conduct tornado drills, and hardened safe rooms on campuses are a priority action.

Loss Estimate

The FEMA National Risk Index models tornado Expected Annual Loss for Howard County at **$898,403 per year (Relatively Low rating, but among the largest dollar figures of any hazard in the county)**. Recorded property damage in the Storm Events period was about $4,385,000, and the hazard has caused 2 deaths and 9 injuries, the only recorded fatalities of any natural hazard in the county during the period. The dominant loss driver is manufactured housing and the concentration of people and property in Nashville.

Data Deficiency

Tornado tracks prior to about 1980 were compiled from written records and may undercount weaker events. The count and location of manufactured homes by jurisdiction, needed to refine the life-safety loss estimate, should be added from ACS data at the next update. A significant local warning limitation is radar coverage: Howard County sits at the far edge of the surrounding National Weather Service radars (the Shreveport radar reaches it only at the margin, the Fort Smith radar is blocked by terrain, and the Little Rock radar is too distant), so generally only stronger tornadoes (roughly EF2 to EF3 and above) are reliably detected by radar and weaker tornadoes must be confirmed by a physical NWS damage survey. The county is exploring alternative radar options; several neighboring counties, including Sevier, face the same gap.

Wildfire

Description

Any free burning uncontainable wildland fire not prescribed for the area which consumes the natural fuels and spreads in response to its environment (NWS 2009). Wildfires occur when warm temperatures, low humidity, wind, and a lack of recent precipitation combine with sufficient fuel and an ignition source. Fine fuels such as grass and pine needles allow fires to start and build enough intensity to ignite larger woody material. Ignition can be natural (lightning) or human-caused (equipment sparks, debris burning, discarded cigarettes, arson). Wildfires are most common during drought. Fire danger is measured by the Burning Index and the Keetch-Byram Drought Index, and the National Weather Service issues Red Flag Warnings when conditions favor ignition and spread.

In Howard County, wildfire risk is closely tied to drought and concentrates in the wildland-urban interface, where the county's extensive pine and hardwood forest (the timber base for Weyerhaeuser and the wood-products industry) meets rural homes and small communities.

According to the USDA Forest Service Wildfire Risk to Communities assessment (v2, 2026), Howard County has a greater wildfire likelihood than 59 percent of U.S. counties, and homes in the county face greater wildfire risk than 56 percent of U.S. counties, both rated in the moderate range. The same assessment finds that homes and other buildings in Howard County are predominantly in the Direct Exposure Zone, meaning they are close enough to wildland fuels to be ignited directly by flames or wind-borne embers rather than only by long-range ember transport.

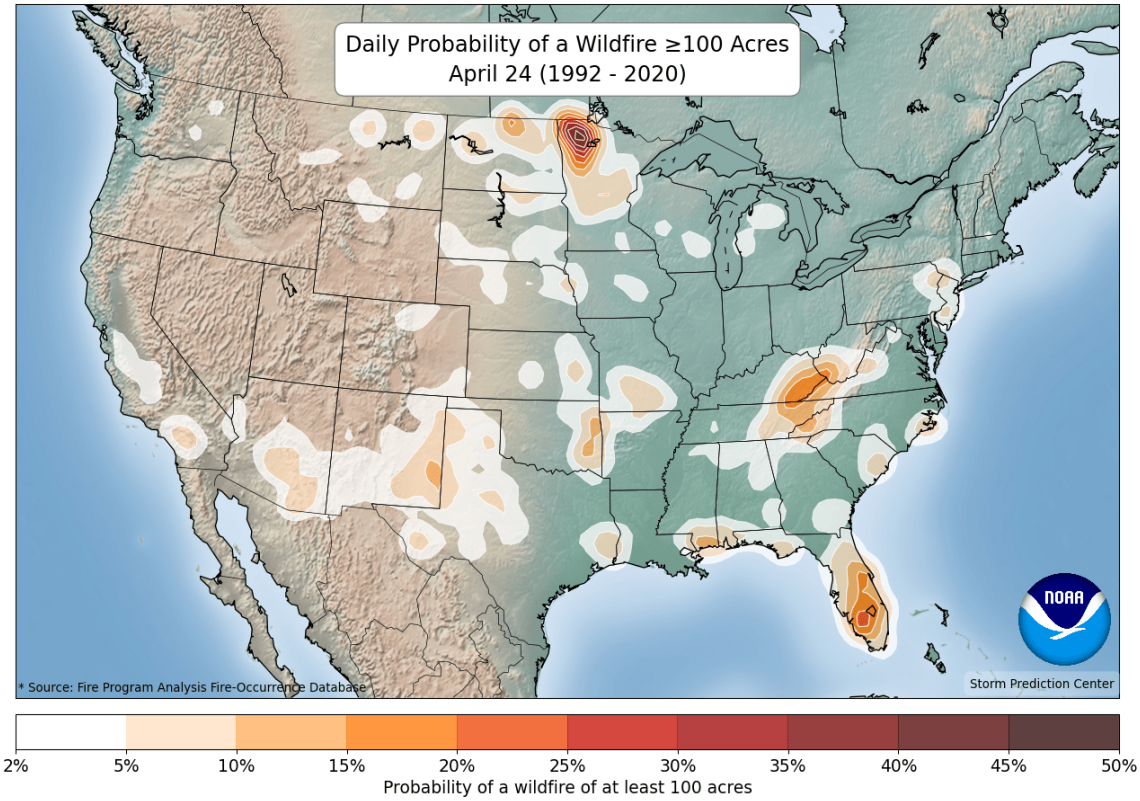


Figure 3-20. Arkansas wildfire annual probability (fires of 100 or more acres). (Source: USDA Forest Service.)

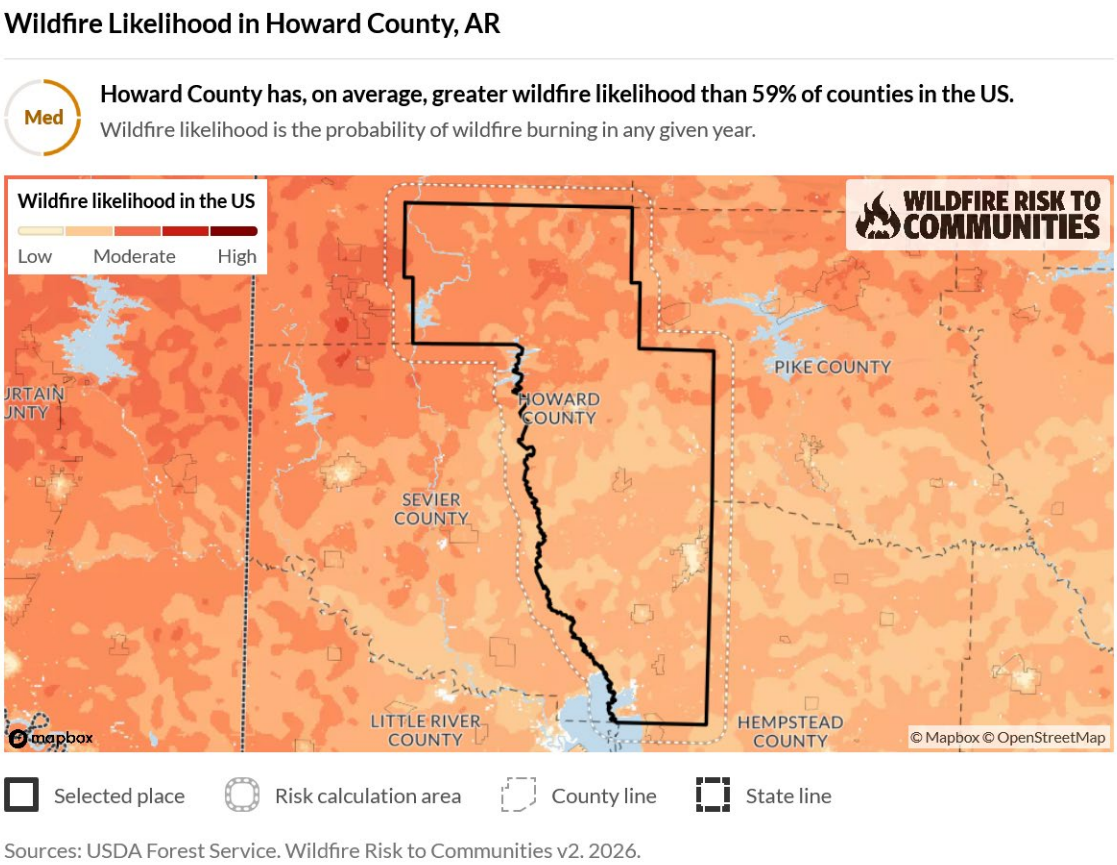


Figure 3-21. Wildfire likelihood across Howard County (USDA Forest Service, Wildfire Risk to Communities v2, 2026). The county's average wildfire likelihood is higher than 59 percent of U.S. counties.

Extent, Magnitude, or Severity

Wildfire extent is measured by area burned and by the USDA Wildfire Risk to Communities rating. Howard County's wildfire likelihood exceeds that of 59 percent of U.S. counties (a moderate rating), and most structures sit in the Direct Exposure Zone. The credible range runs from frequent small grass and brush fires to a wildland-urban-interface fire in the forested rural county during drought and burn-ban periods.

Location

Wildfire risk is **not uniform**. It is highest in the **wildland-urban interface on the wooded outskirts of the towns and throughout the forested rural county**, particularly the timbered northern and western parts of the county in the Ouachita foothills, and lowest in the developed core of Nashville. Communities surrounded by or interspersed with forest and grassland (Dierks, Umpire, Schaal, and the rural unincorporated county) carry the most exposure, particularly during drought and burn-ban periods.

Previous Occurrences

NOAA Storm Events records 3 wildfires in Howard County (about $50,000 in property damage and 1 injury), but Storm Events substantially under-records the hazard. The Arkansas Department of Agriculture, Forestry Division, which tracks wildland fire more completely, recorded 63 wildfires burning 304 acres in Howard County over the seven years from 2013 through 2019, an average of about 9 fires and 43 acres per year; the worst year in that period was 2017, with 17 fires and 132 acres. That dataset ends in 2019 and should be refreshed when the Forestry Division publishes newer county figures. Statewide context underscores the recurring threat: as of April 2025, wildfires had burned more than 20,000 acres across Arkansas in that year, with debris burning and arson the leading causes. The Arkansas Department of Agriculture Forestry Division maintains local forestry crews and equipment for Howard County, and the county and cities periodically issue burn bans during dry periods.

Probability of Future Events

Because of the under-recording of small fires, a reliable annual frequency cannot be calculated from the event record. Given the county's extensive forest cover, recurring drought, and routine burn-ban periods, the realistic planning expectation is that grass and wildland fires occur most years, with elevated risk in drought years. The NRI rates the hazard low in dollar terms but not zero.

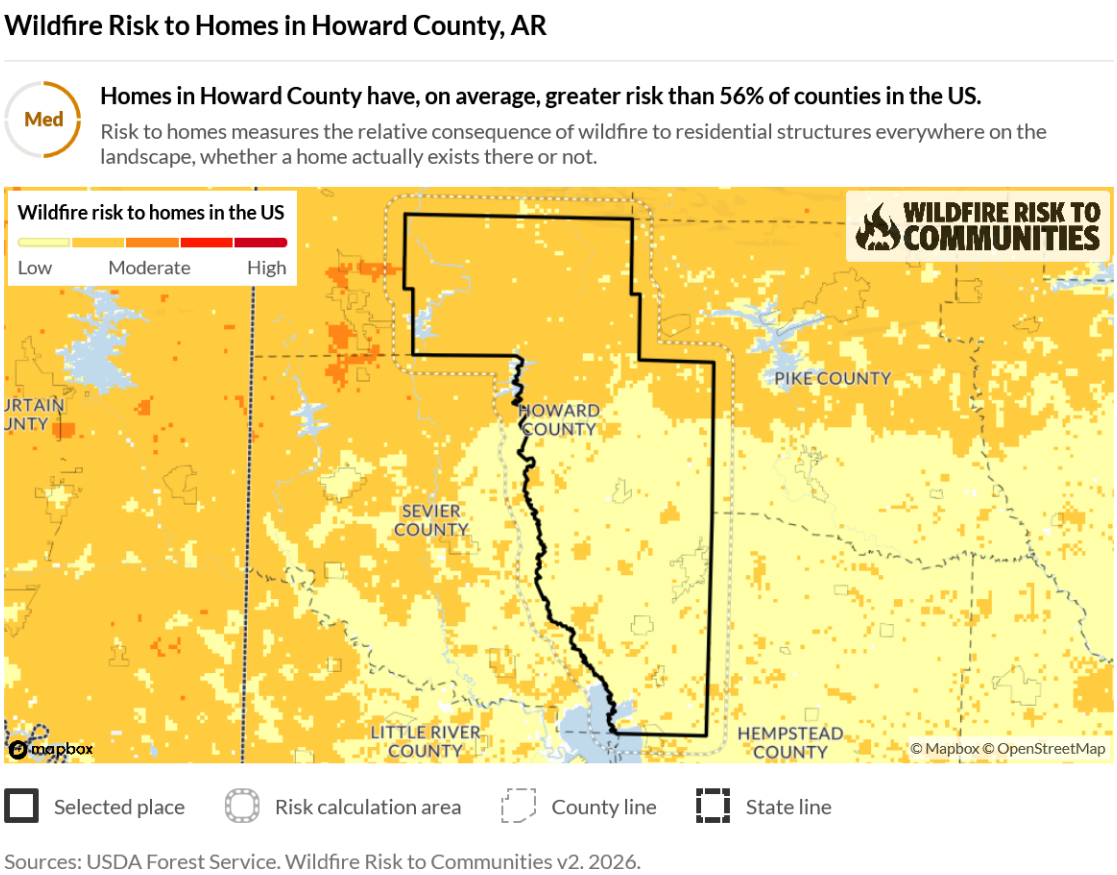


Figure 3-22. Wildfire risk to homes in Howard County (USDA Forest Service, Wildfire Risk to Communities v2, 2026). Homes in the county face greater wildfire risk than 56 percent of U.S. counties.

Jurisdiction Vulnerability

- **Unincorporated Howard County** carries the highest wildfire exposure. The county is roughly 587 square miles, much of it forest and pasture, and rural fire protection is provided entirely by volunteer fire departments (see Fire Protection in Section 2), which lengthens response times. The two largest fire districts by area, Athens Umpire and Nathan, cover the forested northern and northeastern county where the wildland-urban interface and response distances are greatest. Rural homes, many of them manufactured, sit directly in the wildland-urban interface, and the commercial timberland that supports the county's wood-products economy is itself at risk.
- **City of Dierks** sits in the timbered northwestern county near the Saline River and Dierks Lake and is the incorporated city most embedded in forest; it faces meaningful interface exposure with limited local firefighting capacity.
- **City of Mineral Springs and Town of Tollette** are small communities adjacent to forest and grassland with limited local firefighting capacity.
- **City of Nashville** has the lowest wildfire exposure in its developed core but faces interface risk on its wooded edges and at facilities backing onto undeveloped land.
- **School Districts** are exposed where rural campuses (especially Umpire, Dierks, and Mineral Springs) back onto wooded or grassed land; the Umpire campus, in the forested northwestern county, carries the county's highest school wildfire exposure; defensible space around campuses is a recommended action.

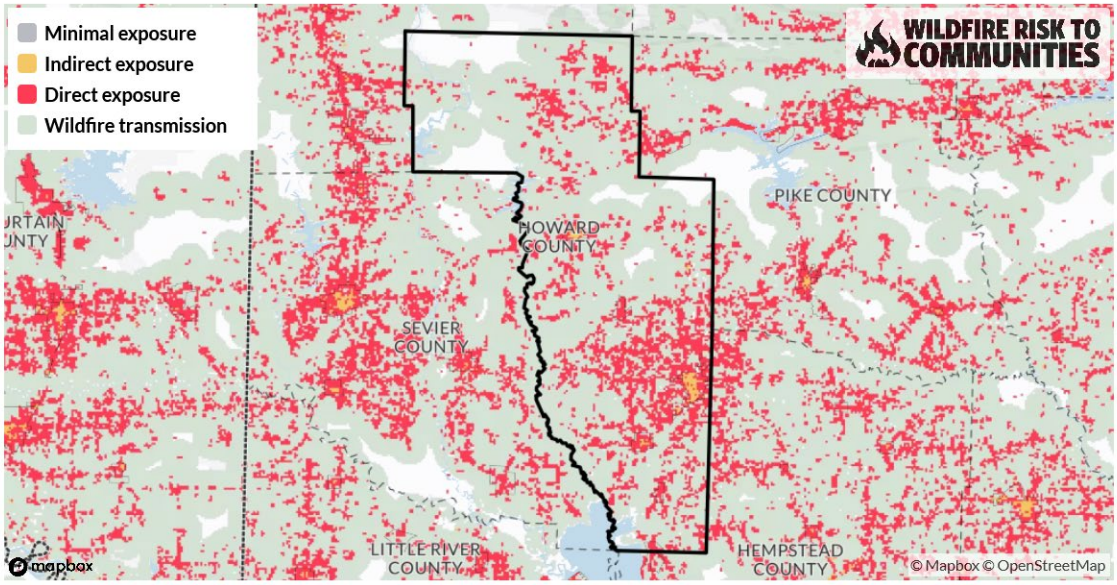
The USDA Wildfire Risk to Communities mapping reinforces these jurisdiction findings. The risk-reduction-zone mapping shows that most structures in the county sit in the Direct Exposure Zone, where defensible space and home-hardening are the most effective mitigation measures. The vulnerable-populations mapping shows that parts of the county, including areas with higher shares of residents over age 65 or residents in racial and ethnic minority groups, rank above the local median for difficulty preparing for, responding to, and recovering from wildfire, compounding the physical exposure with social vulnerability and consistent with the county's Very High Social Vulnerability rating in Section 2.

Wildfire Risk Reduction Zones in Howard County, AR

Very High

Homes and other buildings in Howard County are predominantly in the Direct Exposure Zone.

Risk Reduction Zones are the areas where mitigation activities will be most effective at protecting homes and other buildings from wildfire.



Selected place County line State line

Sources: USDA Forest Service. Wildfire Risk to Communities v2. 2026.

Figure 3-23. Wildfire risk reduction zones in Howard County (USDA Forest Service, 2026). Structures are predominantly in the Direct Exposure Zone, where defensible space and home-hardening are most effective.

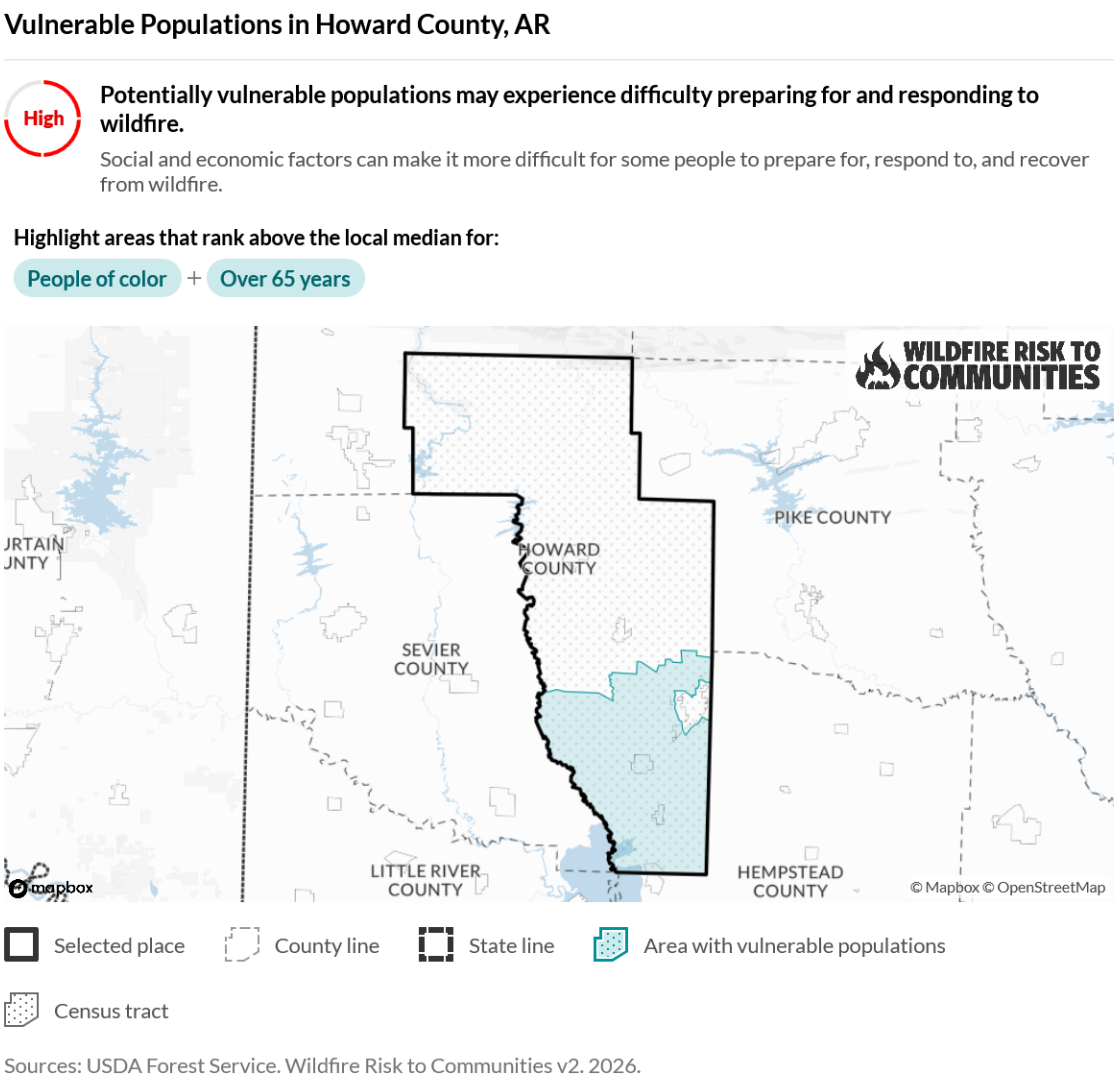


Figure 3-24. Populations in Howard County potentially vulnerable to wildfire (USDA Forest Service, 2026), highlighting census areas above the local median for older adults and racial and ethnic minority residents.

Loss Estimate

The FEMA National Risk Index models wildfire Expected Annual Loss for Howard County at **$22,687 per year (Very Low)**. This low figure reflects the historical scarcity of large structure-destroying fires, not an absence of ignitions; the more meaningful exposure is the potential loss of rural homes in the interface and of commercial timberland, which a dollar-average understates.

Data Deficiency

This update incorporates the USDA Forest Service Wildfire Risk to Communities mapping (v2, 2026) for wildfire likelihood, risk to homes, risk reduction zones, and vulnerable populations (Figures 3-20 through 3-23), which fills the wildland-urban interface mapping gap noted in prior plans. The remaining data gap is the local fire history: county-specific wildfire counts and acres-burned figures

should be obtained from the Arkansas Department of Agriculture Forestry Division "Wildfire Statistics by County" reports and added at the next update.

Winter Storms

Description

A winter storm is a winter weather event that produces impactful accumulations of freezing rain (ice), sleet, and/or snow (NWS 2018). Winter storms may include heavy snow, blowing snow, high winds, extreme cold, or ice. Among the greatest hazards are traffic accidents and the failure of power distribution under ice loads. In Arkansas, ice storms are a greater threat than blizzards: moisture from the Gulf of Mexico falling over shallow cold air near the surface can produce ice accumulations of two inches or more, with tremendous damage to power lines, trees, and poultry houses.

For Howard County, the winter storm hazard, and ice in particular, is one of the most damaging hazards the county faces. The FEMA National Risk Index rates the county's **ice-storm Expected Annual Loss as Very High**, the highest rating of any hazard for the county.

Ice accumulation severity and its typical effects are summarized below.

Ice Accumulation	Typical Impact
Trace to 0.25 in	Minor; slick roads and walkways, isolated power interruptions
0.25 to 0.50 in	Scattered tree-limb and power-line damage; travel hazardous
0.50 to 1.00 in	Widespread limb and line damage; multi-day power outages likely; poultry-house ventilation at risk
Greater than 1.00 in	Catastrophic; extensive structural, tree, and utility damage. The December 2000 ice storm is the benchmark event for this county

Extent, Magnitude, or Severity

Winter storm extent is measured by ice accumulation and snowfall. The credible range runs from a trace to more than one inch of ice; the December 2000 ice storm (more than one inch of ice, with catastrophic tree and power-line damage) is the benchmark event, and the FEMA National Risk Index rates the county's ice-storm expected annual loss Very High.

Location

Winter storms are a regional hazard that affects the entire county at once, so meteorological exposure is broadly uniform. The differences between jurisdictions are in consequence: the rural county and the small towns lose power longest, the cities concentrate the most vulnerable populations on power-dependent medical equipment, and the entire planning area is hampered by a lack of snow-and-ice removal equipment.

Previous Occurrences

NOAA Storm Events (2000-2026) records 43 winter events (winter storm, ice storm, and winter weather) plus 7 cold events. The defining event is the December 2000 ice storm, recorded at the county-zone level at about $40,000,000 in property damage (this is a regional zone-level estimate attributed to the entire county zone, not a precise county-only figure). The February 16, 2021 winter event recorded $102,000 and the January 8, 2014 event recorded $100,000. The county has three winter-storm federal declarations: the December 2000 ice storm (EM-3159 and DR-1354) and the January 2026 severe winter storm (EM-3636).

Probability of Future Events

With 43 winter events in 26 years, the county averages about **1.65 damaging winter events per year, making winter weather a near-annual certainty**. The FEMA National Risk Index assigns ice storm an annualized frequency of about 0.57 (a damaging ice storm roughly every 2 years) and winter weather about 4.74. Long-duration freezing-rain events affect Arkansas most years.

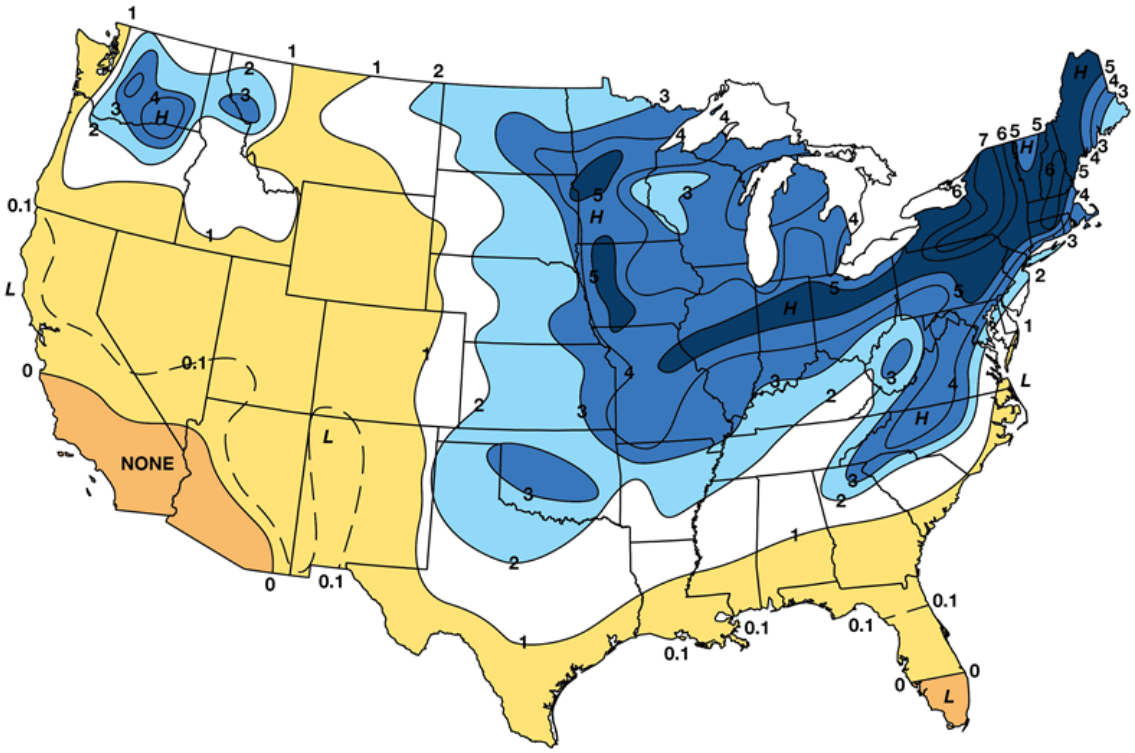


Figure 3-25. Average annual number of days with freezing rain (1948-2000). Southwest Arkansas averages roughly one to two freezing-rain days per year, the ice exposure that drives the county's highest-rated hazard. Source: Changnon and Karl, 2003.

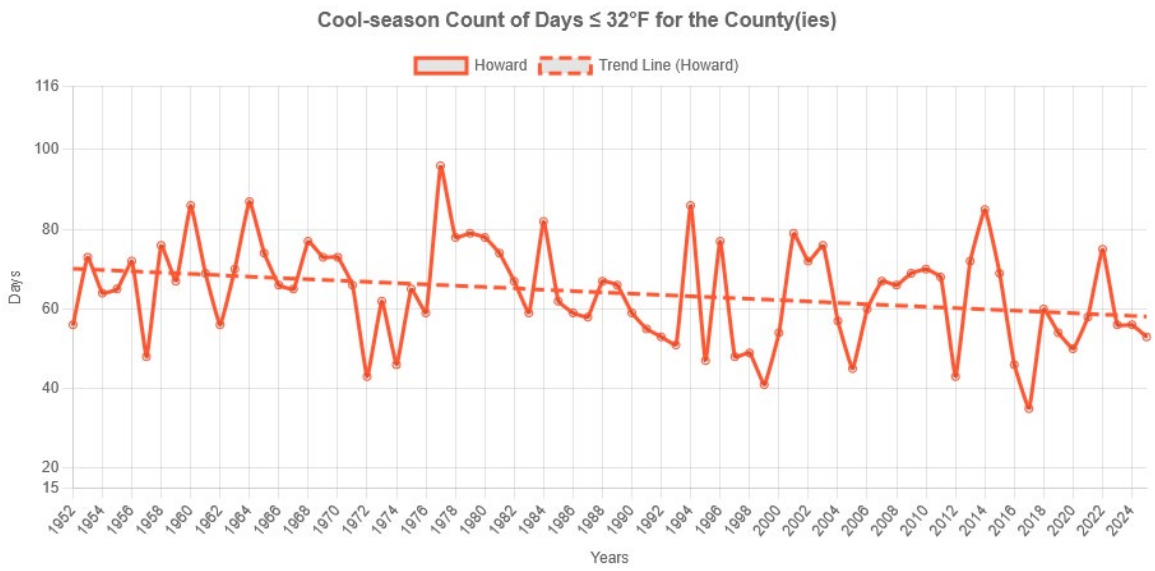


Figure 3-26. Cool-season count of days at or below 32 degrees F in Howard County, 1952-2024, with trend line. Freezing days remain frequent year to year despite a gradual long-term decline. Source: SCIPP.

Jurisdiction Vulnerability

- **Unincorporated Howard County** is highly vulnerable to ice. Long rural overhead distribution lines (AEP/SWEPCO, Rich Mountain, South Central Electric, and the rural electric cooperatives) fail under ice loads, producing multi-day rural outages; the county's many poultry houses are particularly vulnerable, as ice and the loss of power to ventilation and heating can cause catastrophic livestock loss; and manufactured homes are poorly insulated against extreme cold. Rural residents on wells lose water when power fails.
- **City of Nashville** concentrates the most vulnerable populations during winter storms: the hospital, long-term care facilities, and home-bound residents on electric-powered medical equipment all depend on continuous power and heat. Nashville's tree canopy over streets and power lines increases ice-related outages and road blockage. Warming-center capacity and facility generators are the key needs.
- **Cities of Dierks and Mineral Springs and the Town of Tollette** have little or no snow-and-ice removal equipment and limited staff, so roads remain hazardous longer and isolated residents may be cut off.
- **School Districts (Nashville, Dierks, Mineral Springs, and Umpire)** face building damage (roof and pipe damage), closures and added makeup days, and dangerous bus routes on icy rural roads.

Loss Estimate

The FEMA National Risk Index models the following Expected Annual Loss for the county: **ice storm $2,263,058 per year (Very High rating)**, **winter weather $41,798 per year (Relatively Low)**, and **cold wave $202,492 per year (Relatively Low)**. Ice storm is the second-largest modeled annual loss of any hazard in the county, behind only flooding, and carries the highest NRI rating. The December 2000 ice storm remains the benchmark event for catastrophic winter loss in the county, and the recorded winter property-damage total (about $40,200,000, dominated by that zone-level estimate) is the largest recorded loss of any hazard.

Data Deficiency

The large December 2000 ice-storm damage figure is an NCEI zone-level estimate attributed to the whole county zone and should be presented as a regional estimate rather than a precise county-only loss; it should not be added across counties as independent loss. Poultry-house and agricultural losses from ice and cold are not fully captured in Storm Events and should be supplemented with USDA data at the next update.

Extreme Heat

Description

Extreme heat is a prolonged period of excessively hot weather, generally a period of two or more days with temperatures near or above 90 degrees Fahrenheit combined with high humidity (NWS 2018).

During extreme heat events the human body's ability to cool itself is challenged, which can lead to heat cramps, heat exhaustion, and life-threatening heat stroke. Heat is one of the leading weather-related causes of death nationally. The National Weather Service issues Heat Advisories and Excessive Heat Warnings based on the heat index, which combines air temperature and humidity. Extreme heat also stresses power and water systems, agriculture, and livestock.

In Howard County, hot and humid summers are routine, and the combination of high temperatures and humidity produces dangerous heat index values most summers. Extreme heat is a chronic, recurring seasonal hazard rather than a rare one, and its consequences fall hardest on vulnerable residents and on outdoor workers in the county's poultry, timber, and agricultural economy.

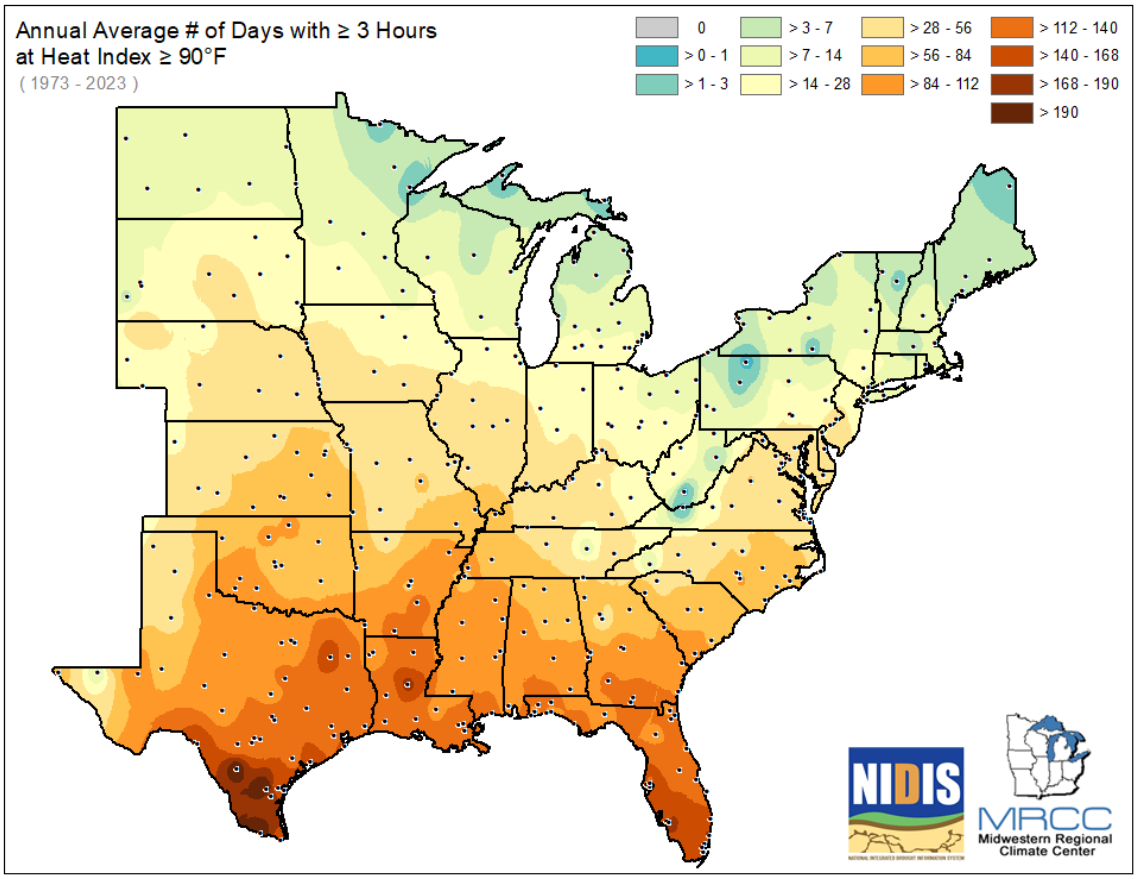


Figure 3-27. Average annual number of days with a heat index at or above 90 degrees Fahrenheit. Southwest Arkansas, including Howard County, experiences a high number of dangerous-heat days each year. (Source: SCIPP / Southern Climate Impacts Planning Program.)

Extent, Magnitude, or Severity

Extreme heat extent is measured by the heat index (air temperature combined with humidity). The credible extent is multiple multi-day periods each summer with heat index values at or above 90 to 105 degrees Fahrenheit or higher, sufficient to trigger National Weather Service Heat Advisories and Excessive Heat Warnings.

Location

Extreme heat is a regional, non-localized hazard that affects the entire county at once. As with drought and winter storms, meteorological exposure is uniform, and the differences between jurisdictions are in consequence. The urban core of Nashville experiences an urban heat-island effect, and the county's older adults, residents on power-dependent medical equipment, outdoor workers, and residents of manufactured or substandard housing without adequate cooling are the most exposed.

Previous Occurrences

NOAA Storm Events records 75 heat events affecting Howard County during 2000-2026, with no deaths or injuries recorded in that database. Storm Events under-records heat-related illness, which is captured instead in public-health and emergency-department data.

Probability of Future Events

Extreme heat is essentially an annual seasonal risk. The FEMA National Risk Index assigns a heat-wave annualized frequency of about 17.5 events per year for the county. Dangerous heat index days occur every summer, and the realistic planning expectation is that the county will experience multiple periods of extreme heat each year.

Jurisdiction Vulnerability

- **City of Nashville** concentrates the most heat-vulnerable populations: the hospital, long-term care facilities, and home-bound residents on cooling-dependent medical equipment, along with the densest development and an urban heat-island effect. Cooling-center capacity and outreach to vulnerable residents are the key needs.
- **Unincorporated Howard County** exposes outdoor workers in poultry, timber, and agriculture to prolonged heat, and rural residents in manufactured or substandard housing may lack adequate cooling; those on wells lose water if power fails during a heat-driven outage.
- **Cities of Dierks and Mineral Springs and the Town of Tollette** share the vulnerable-population and cooling-access concerns with limited local resources.
- **School Districts** manage heat exposure during late-summer and early-fall outdoor activities and at their campuses; the primary concern is student and staff safety and any loss of air conditioning.

Loss Estimate

The FEMA National Risk Index models a heat-wave Expected Annual Loss of about **$368,853 per year (Relatively Low)** for the county. Extreme heat produces primarily public-health consequences (heat illness and death) and agricultural and livestock stress rather than structural building loss, so the dollar figure understates the true human impact.

Data Deficiency

Heat-related illness and emergency-department visits are not captured in the NOAA Storm Events Database; county-level heat morbidity and mortality data should be obtained from the Arkansas Department of Health and added at the next update. Agricultural and livestock heat losses should be supplemented with USDA data.

SECTION 4

Mitigation Strategy

The Howard County Hazard Mitigation Plan includes a mitigation strategy that serves as the county's guide to reducing the potential losses identified in the risk assessment. The strategy is built on existing programs, resources, policies, and authorities, and on the ability to grow and improve those tools over time.

Goals

The goals of this plan, carried through from Section 1, are to decrease the potential for death, injury, and economic damage from natural hazards; to create a framework that encourages mitigation at all levels of government and the private sector; to identify and pursue state and federal grant funding for mitigation; and to take steps to protect existing properties from future disasters.

Considerations and Prioritization

Each jurisdiction selected its mitigation actions based on benefit to the community, total cost and cost-effectiveness, support from the community, ease and practicality of implementation, consistency with the jurisdiction's capabilities, and the availability of funding. These actions were discussed at the risk assessment and mitigation strategy meetings, where all jurisdictions were instructed on the importance of prioritizing their strategies. As funding becomes available, each jurisdiction will weigh cost against need and the funding actually available to decide which action to pursue next.

Priorities are assigned as Very High, High, Medium, or Low. A benefit-cost review will be completed for any action that requires it before federal grant funds are obligated, consistent with FEMA requirements. The review uses FEMA's Benefit-Cost Analysis (BCA) Toolkit to compare an action's avoided future losses against its cost, and only actions with a benefit-cost ratio of 1.0 or greater are advanced for federal grant funding. For actions funded locally or through non-federal sources, the committee weighs cost against benefit qualitatively using the priority levels assigned in the matrix.

Status of Previous Actions (Plan Update)

Since the previous plan, no mitigation actions were completed, due to a combination of lack of funding, turnover among committee members, and the expiration of the prior plan. Most of the previous actions have been carried forward into this update, refined to match the corrected risk assessment, and the planning committee intends to begin work on them as funding becomes available. The prioritization approach has not changed: it remains a balance of need against available funding. The action table below also corrects an error in the prior plan (a winter-storm action table that listed Little River County communities rather than Howard County jurisdictions) and adds new actions that follow directly from the corrected risk assessment, including joining the NFIP in Tollette, completing dam inundation studies for the Gillham and Dierks projects, and hardening critical facilities against ice-storm power loss.

The status of each mitigation action from the previous (2016/2020) Howard County plan is documented below, as required for plan updates by 44 CFR 201.6(d)(3). The prior plan reported that none of its actions had been completed; each is carried forward into the current strategy and mapped to the corresponding action in the matrix that follows.

#	Previous Action (prior plan)	Hazard(s)	Prior Priority	Status	Carried Forward As
1	Complete a dam inundation study	Dam and Levee Failure, Flooding	Medium	Not completed; carried forward	Dam and levee inundation studies / EAP action
2	Establish an early warning system	Dam and Levee Failure, Flooding	High	Not completed; carried forward	Early warning system action
3	Establish a warming center	Winter Storm	Medium	Not completed; carried forward	Warming and cooling centers action
4	Implement burn bans and burn permits	Wildfire	Medium	Ongoing; carried forward	Burn ban / burn-permit action
5	Adopt water-conservation ordinances	Drought, Wildfire	Medium	Not completed; carried forward	Water-conservation ordinance action
6	Install low-flow fixtures in public buildings	Drought	Medium	Not completed; carried forward	Water-conservation / low-flow fixtures action
7	Adopt stormwater drainage ordinances	Flooding	Low	Not completed; carried forward	Floodplain / stormwater ordinance action
8	Place NOAA Weather Radios in public buildings	Multiple	High	Not completed; carried forward	NOAA Weather Radio action
9	Implement a tree-trimming program	Thunderstorm, Tornado, Winter Storm	High	Not completed; carried forward	Vegetation / tree-trimming action
10	Provide public education on building retrofits	Multiple	Medium	Not completed; carried forward	Public-education action
11	Acquire generators for critical	Multiple	Medium	Not completed; carried forward	Backup-generator action

	infrastructure				
12	Build safe rooms	Tornado, Thunderstorm	Very High	Not completed; carried forward	Community safe rooms action
13	Create a Firewise program	Wildfire	Medium	Not completed; carried forward	Firewise / defensible-space action
14	Establish defensible space around critical infrastructure and schools	Wildfire	High	Ongoing; carried forward	Firewise / defensible-space action

Range of mitigation actions considered. In building this strategy, the planning committee evaluated a comprehensive range of mitigation action types for each participating jurisdiction and each profiled hazard, drawn from the categories recognized in FEMA guidance: local plans and regulations (floodplain and building-code enforcement, ordinance updates, and plan integration); structure and infrastructure projects (drainage and culvert improvements, safe rooms, backup power, and dam and levee measures); natural systems protection (riparian-buffer and stormwater practices); education and awareness programs (NOAA Weather Radio, Firewise, and public outreach); preparedness and response actions (early-warning systems and emergency-operations coordination); and property protection (elevation, acquisition, and retrofit of at-risk structures). From this full range, each jurisdiction selected the actions best matched to its hazards, capabilities, and available funding, as shown in the action matrix that follows. Action types considered but not selected for a given jurisdiction, such as large structural projects where no cost-effective site exists, were set aside in favor of lower-cost prevention, preparedness, and property-protection measures.

Mitigation Action Plan

The following matrix lists the mitigation actions for the planning area, the hazards each addresses, the rationale and assigned priority, whether it applies to new or existing buildings, the cost-benefit and funding approach, the time frame, the responsible department, and the participating jurisdictions to which it applies.

Mitigation Action / Project	Associated Hazard	Rationale for Priority	Priority	New / Existing	Cost-Benefit & Funding	Time Frame	Responsible Department	Jurisdiction(s)
Complete dam inundation studies and Emergency Action Plans for the High Hazard dams affecting the county (Gillham Dam, Nichols Lake Dam, Millwood - Okay Levee) and coordinate the Dierks Lake project with USACE Little Rock District, Sevier County, and Little River County	Dam and Levee Failure, Flooding	Inundation extent and at-risk structures are currently unknown; required to protect downstream populations on the Cossatot and Saline rivers	High	New and Existing	Low to moderate cost; HMGP, BRIC, state and local funds	5 years	County OEM, County Floodplain Management, Public Works	Howard County, Dierks, Nashville
Install and expand an early warning system (river and creek gauges, outdoor warning sirens, NOAA radio coverage)	Flooding, Dam and Levee Failure, Tornado, Severe Thunderstorm	Increases warning time and saves lives, especially in the Cossatot and Saline corridors and the rural county	High	New and Existing	High cost; FEMA grants and other grants as available	5 years	County OEM, County Floodplain Management, all cities Public Works	All jurisdictions
Build community safe rooms and harden shelters at schools and public buildings	Tornado, Severe Thunderstorm Wind	Reduces loss of life during high-wind events; school safe rooms double as community shelter after hours. Howard County has recorded tornado fatalities	Very High	New and Existing	$250,000 to $1,000,000 per site; HMGP, BRIC, local and school funds	4 years	County Judge, all mayors, all superintendents	All jurisdictions; Nashville SD, Dierks SD, Mineral Springs SD, Umpire SD
Acquire backup generators for critical facilities (hospital, long-term care, water and wastewater systems, warming and cooling centers, shelters)	Ice Storm, Severe Thunderstorm, Flooding, Tornado	Maintains power to life-safety facilities during the multi-day outages typical of ice storms	High	New and Existing	$25,000 to $30,000+ per site; BRIC, HMGP, local funds	5 years	County Judge, all mayors	Howard County, Nashville, all cities

Support manufactured-home resilience: anchoring and tie-down retrofits and targeted safe-room access for the county's manufactured-housing stock	**Tornado, Severe Thunderstorm Wind, Ice Storm, Earthquake**	**The county's 654 manufactured homes are its most wind- and quake-fragile housing and concentrate in Mineral Springs (17.1% of homes), Dierks (12.3%), Tollette (9.6%), and the rural county; anchoring is a low-cost, high-return life-safety measure**	**High**	**Existing**	**Low to moderate cost; HMGP, BRIC, local funds**	**5 years**	**County OEM, County Judge, mayors of Mineral Springs, Dierks, Tollette**	**Howard County, Mineral Springs, Dierks, Tollette**
Coordinate with the Arkansas Department of Transportation on the county's poor-condition and scour-critical bridges over water, prioritizing the two US 278 structures over the Cossatot River and Baker Creek	Flooding	All 116 county bridges cross water; four are poor-condition and four scour-critical (FHWA NBI), and a failure on US 278 would sever the primary east-west route across the western county	Medium	Existing	Coordination and study cost; ArDOT, HMGP, BRIC	5 years	County Judge, Public Works, ArDOT	Howard County
Establish and equip warming and cooling centers	Winter Storm, Extreme Heat	Protects vulnerable residents (elderly, medically fragile, those in substandard housing) during temperature extremes	Medium	New and Existing	City or County funding; General Improvement and other grants	5 years	County Judge, all mayors, all superintendents	All jurisdictions
Join the National Flood Insurance Program and adopt a floodplain management ordinance	Flooding	Gives residents access to flood insurance and strengthens floodplain management in the one participating municipality that is	High	New and Existing	Low cost (staff time and ordinance adoption)	2 years	Mayor of Tollette; County Floodplain Manager	Tollette

		not yet a member						
Adopt and strengthen floodplain and stormwater drainage ordinances; improve urban drainage capacity	Flooding	Reduces repetitive flash flooding of streets and developed property, including the Nashville urban drainage that produced the 2006 flash flood	Medium	New and Existing	Low to moderate cost; local funding	Ongoing	All mayors, Public Works	Nashville, Howard County
Identify and improve flood-prone low-water crossings and acquire, elevate, or relocate repeatedly flooded structures	Flooding	Removes repetitive exposure and restores rural emergency access along the Cossatot, Saline, Little Missouri, and Rolling Fork drainages	Medium	Existing	Varies; HMGP, BRIC, local funds	5 years	County Judge, Public Works	Howard County, Dierks, Tollette
Implement a vegetation and tree-trimming program along power lines and roads	Severe Thunderstorm, Tornado, Ice Storm, Winter Storm	Reduces outages and road blockage from downed limbs and lines	High	New and Existing	Cost varies; local, county budget, utility partnership, grants	Biannual	County Judge, all Public Works, utilities	All jurisdictions
Implement and enforce burn bans and a burn-permit program	Wildfire	Prevents wildfire ignitions during drought and Red Flag conditions, protecting rural homes and commercial timberland	Medium	Not applicable	Low cost	Continual	County Judge, all mayors, fire chiefs	All jurisdictions
Adopt water-conservation ordinances and install low-flow fixtures in public buildings and schools	Drought, Wildfire	Conserves water during drought and supports firefighting supply for the county's small water systems	Medium	New and Existing	Low cost	1 year	County Judge, all mayors, all superintendents	All jurisdictions; school districts
Place NOAA Weather Radios in all public buildings	Tornado, Severe Thunderstorm, Flooding, Winter	Increases warning time and keeps the public and staff	High	New and Existing	Low cost; local, county budget, grant funds	2 years	County Judge, all mayors, all superintendents	All jurisdictions; school districts

and schools	Storm, Dam and Levee Failure	informed						
Provide public education on building retrofits and household preparedness	Flooding, Severe Thunderstorm, Tornado, Wildfire, Winter Storm, Earthquake	Helps residents reduce damage and prepare for hazards	Medium	New and Existing	Low cost; local and county funding	1 year	County OEM	All jurisdictions
Support poultry-house and agricultural resilience (backup power, structural reinforcement, water supply)	Ice Storm, Severe Thunderstorm, Drought	Reduces catastrophic livestock and crop loss, a major rural economic exposure for the county's poultry industry	Medium	Existing	Varies; USDA programs, local	Ongoing	County, USDA, Cooperative Extension	Howard County
Create a Firewise program and establish defensible space around rural critical infrastructure and schools	Wildfire	Reduces wildfire risk to rural homes, campuses, and commercial timberland in the wildland-urban interface	Medium	New and Existing	Low cost; Forestry Division and volunteer time, grants	4 years	County Judge, fire chiefs, Forestry Division	Howard County, Dierks, Mineral Springs; school districts

Action Coverage

The planning committee confirmed that every participating jurisdiction, including each school district, has at least one mitigation action addressing each hazard to which it is vulnerable. Most actions in the matrix apply to all jurisdictions. The Nashville, Dierks, Mineral Springs, and Umpire School Districts are named participants in the community safe-room, NOAA Weather Radio, water-conservation, public-education, and Firewise and defensible-space actions, which together address the tornado, severe thunderstorm, flooding, winter storm, drought, wildfire, and earthquake hazards those campuses face. The dam and levee, wildfire, and flooding actions name the specific jurisdictions (Nashville, Dierks, Mineral Springs, Tollette, and the unincorporated county) most exposed to each of those hazards, and the "Join the National Flood Insurance Program" action is assigned specifically to Tollette.

SECTION 5

Acronyms

Acronym	Definition
ACS	American Community Survey
ADEM	Arkansas Division of Emergency Management
BCA	Benefit-Cost Analysis
BRIC	Building Resilient Infrastructure and Communities
CFR	Code of Federal Regulations
CID	Community Identification (NFIP)
CRS	Community Rating System
DMA 2000	Disaster Mitigation Act of 2000
EAL	Expected Annual Loss
EAP	Emergency Action Plan
EF	Enhanced Fujita (tornado scale)
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMA	Flood Mitigation Assistance
HHPD	High Hazard Potential Dam
HMGP	Hazard Mitigation Grant Program
NCEI	National Centers for Environmental Information (NOAA)
NFIP	National Flood Insurance Program
NID	National Inventory of Dams
NMSZ	New Madrid Seismic Zone
NRI	FEMA National Risk Index
NWS	National Weather Service
OEM	Office of Emergency Management
SCIPP	Southern Climate Impacts Planning Program
SHMO	State Hazard Mitigation Officer
Southwest Arkansas PDD	Southwest Arkansas Planning and Development District
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

WUI	Wildland-Urban Interface

References

The following primary sources and data sets were used in the preparation of this plan.

- FEMA, National Risk Index (NRI), version 1.20 (December 2025).
- FEMA, National Flood Hazard Layer (NFHL) and effective Flood Insurance Rate Maps, Howard County digital FIRM 05061C (effective December 3, 2010).
- FEMA, Local Mitigation Planning Policy Guide (FP-206-21-0002, effective April 11, 2025) and Local Mitigation Plan Review Tool.
- U.S. Army Corps of Engineers, National Inventory of Dams (record last updated 2026).
- NOAA National Centers for Environmental Information, Storm Events Database (2000-2026).
- U.S. Geological Survey, Earthquake Hazards Program earthquake catalog.
- CDC / ATSDR, Social Vulnerability Index 2022 (census-tract level).
- USDA Forest Service, Wildfire Risk to Communities (version 2, 2026).
- Southern Climate Impacts Planning Program (SCIPP), Simple Planning Tool for Climate Hazards, version 2.0.
- U.S. Census Bureau, 2020 Decennial Census and 2018-2022 American Community Survey.
- Arkansas GIS Office, fire districts and fire stations feature services (gis.arkansas.gov).
- Arkansas Natural Resources Division, Dam Safety Program.
- Arkansas Department of Agriculture, Forestry Division (wildfire statistics).
- Southwest Arkansas Planning and Development District, Comprehensive Economic Development Strategy (CEDS).

Plan Adoption

Following FEMA approval of the Howard County Hazard Mitigation Plan, each participating jurisdiction adopts the plan by resolution. The signed resolutions are attached as an appendix. The participating jurisdictions are:

Jurisdiction	Resolution Status
Howard County	**[VERIFY - attach signed resolution]**
City of Nashville	**[VERIFY - attach signed resolution]**
City of Dierks	**[VERIFY - attach signed resolution]**
City of Mineral Springs	**[VERIFY - attach signed resolution]**
Town of Tollette	**[VERIFY - attach signed resolution]**
Nashville School District	**[VERIFY - attach signed resolution]**
Dierks School District	**[VERIFY - attach signed resolution]**
Mineral Springs School District	**[VERIFY - attach signed resolution]**
Umpire School District	**[VERIFY - attach signed resolution]**

Sample Adoption Resolution

Each participating jurisdiction adopts the plan by resolution using the template below. The completed and signed resolution for each jurisdiction is inserted following adoption.

RESOLUTION NO. ____

A RESOLUTION ADOPTING THE HOWARD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS, certain areas of Howard County are subject to periodic flooding, tornadoes, severe storms, winter storms, dam and levee failure, and other natural hazards with the potential to cause damage to people and property; and

WHEREAS, under the Disaster Mitigation Act of 2000, the Federal Emergency Management Agency requires that local jurisdictions have in place a FEMA-approved Hazard Mitigation Plan as a condition of receiving certain federal mitigation funding; and

WHEREAS, [jurisdiction name] participated in the preparation of the Howard County Multi-Jurisdictional Hazard Mitigation Plan and has reviewed the plan;

NOW, THEREFORE, BE IT RESOLVED by the [governing body] of [jurisdiction name], Arkansas, that:

1. The Howard County Multi-Jurisdictional Hazard Mitigation Plan is hereby adopted as an official plan of [jurisdiction name].
2. The [responsible official or department] is directed to pursue implementation of the mitigation actions assigned to [jurisdiction name] as funding becomes available.
3. [jurisdiction name] will continue to participate in the plan maintenance and five-year update process.

ADOPTED this ____ day of _____, 20__.

_____ [Title], [Jurisdiction]

ATTEST: _____ [Clerk or Recorder]

Jurisdiction Adoption Record

The adoption date and resolution number for each participating jurisdiction are recorded below at adoption, and the signed resolutions are attached.

Jurisdiction	Governing Body	Adoption Date	Resolution No.
Howard County	Quorum Court	[VERIFY]	[VERIFY]
City of Nashville	City Council	[VERIFY]	[VERIFY]
City of Dierks	City Council	[VERIFY]	[VERIFY]
City of Mineral Springs	City Council	[VERIFY]	[VERIFY]
Town of Tollette	Town Council	[VERIFY]	[VERIFY]
Nashville School District	School Board	[VERIFY]	[VERIFY]
Dierks School District	School Board	[VERIFY]	[VERIFY]
Mineral Springs School District	School Board	[VERIFY]	[VERIFY]
Umpire School District	School Board	[VERIFY]	[VERIFY]