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ATHENS COUNTY HAZARD MITIGATION PLAN AUGUST 2025

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1 | Introduction



1.1 Overview

With the 2019 Athens County Hazard Mitigation Plan set to expire in 2025, Athens County and its constituents aim to adopt a new, updated hazard mitigation plan. As outlined in the Disaster Mitigation Act of 2000 (DMA2K), any local jurisdiction seeking funding from the Federal Emergency Management Agency (FEMA) must maintain an up-to-date disaster mitigation plan. This Plan meets the criteria as set forth by FEMA in the DMA2K and provides the County and its participating jurisdictions with a comprehensive guide for future mitigation efforts to combat the hazards that affect their communities.

Natural, geological, and human-caused hazards pose a variety of risks to the lives, businesses, and properties within Athens County. As such, a Core Planning Committee within Athens County has been established with the goal of developing and implementing the 2025 Athens County Hazard Mitigation Plan. Through cooperative efforts between local, county, state, and federal government agencies, this Plan is designed to minimize the adverse effects of hazardous events on the lives and properties of residents of Athens County.

This 2025 Athens County Hazard Mitigation Plan is a multi-jurisdictional plan which considers the impacts of hazards on incorporated cities and villages and unincorporated townships. Athens County's jurisdictions and townships are listed below in **Tables 1.1.1 and 1.1.2**. These areas are also displayed in **Figure 1.1.3** on the following page. The Plan is designed for a five-year implementation period and describes the methods and procedures utilized in its development, provides the results of community involvement activities such as survey collection, identifies the mitigation activities determined to be the most important to the County and establishes a timeline for the implementation of the actions.

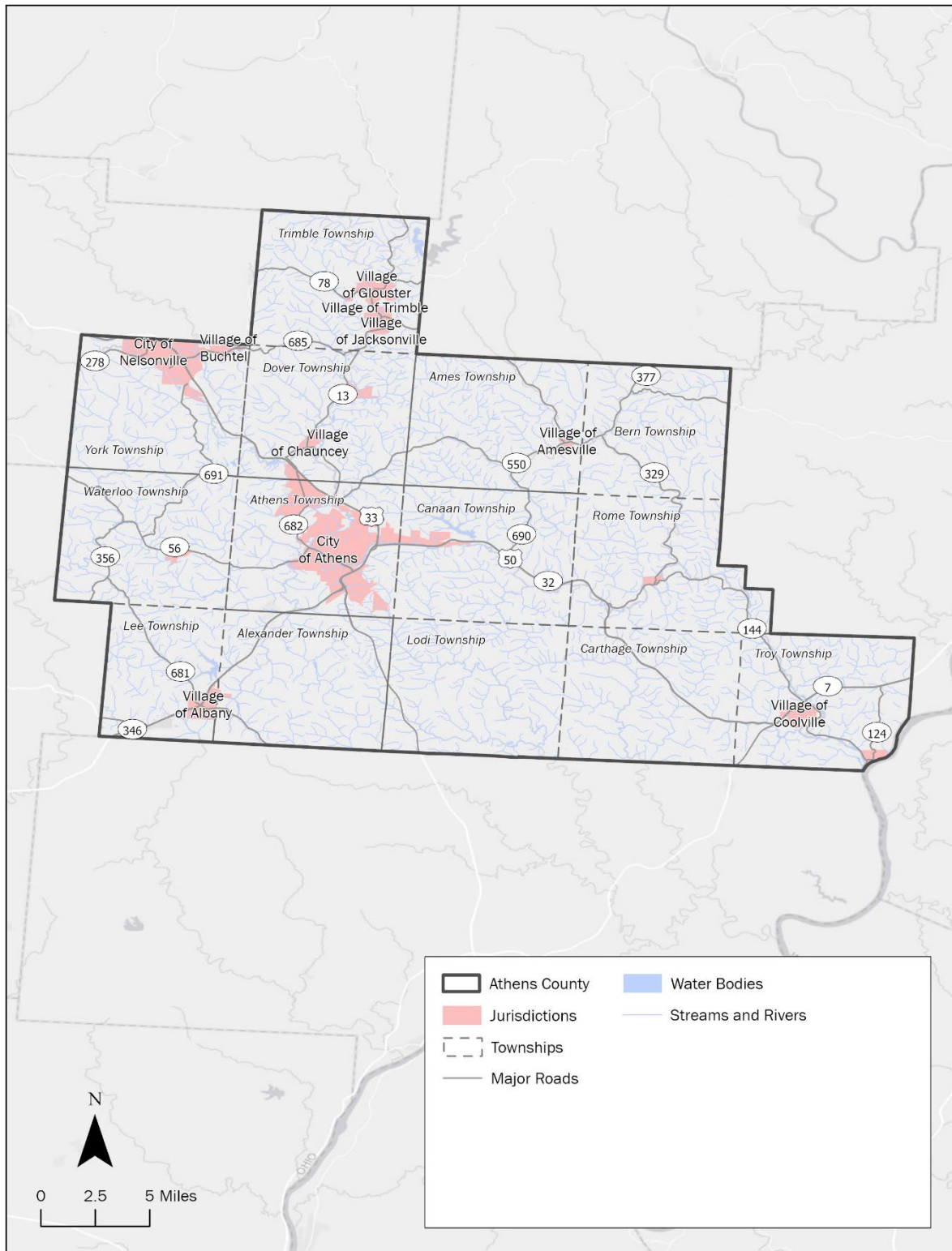
Table 1.1.1: Athens County Jurisdictions

Jurisdictions	
City of Athens	Village of Chauncey
City of Nelsonville	Village of Coolville
Village of Albany	Village of Glouster
Village of Amesville	Village of Jacksonville
Village of Buchtel	Village of Trimble

Table 1.1.2: Athens County Townships

Townships	
Alexander Township	Lee Township
Ames Township	Lodi Township
Athens Township	Rome Township
Bern Township	Trimble Township
Canaan Township	Troy Township
Carthage Township	Waterloo Township
Dover Township	York Township

Figure 1.1.3: Athens County Jurisdictions Map





This Plan is comprised of six chapters, which detail the methods, analysis, and discussion surrounding the various hazards that threaten Athens County and its jurisdictions. These chapters are as follows:

- This **Introduction** (Chapter 1) provides a discussion about the general purpose and goals that Athens County wishes to achieve throughout the development and implementation of this Plan. This section also includes a summary of the Plan's contents.
- Chapter 2, **History and Demographics**, includes a description of Athens County and each participating jurisdiction, including their history, population, and other general information.
- Chapter 3, **Planning Process**, details the process for the development of this Plan. This section includes details about the process used to develop this Plan, including a description of who participated, how the community was involved, which hazards were included in the Plan and why, as well as how the Plan was developed through public meetings, reviews, and evaluations. This section also details the review and incorporation of existing plans, studies, reports, and technical information.
- Chapter 4 contains the **Hazard Identification and Risk Assessment (HIRA)**. This section provides detailed descriptions and a corresponding analysis for each hazard that could potentially affect Athens County. The nature, location, extent, historical impact, vulnerability, and likelihood of occurrence for each hazard are provided for each hazard. These analyses include the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; an estimate of the potential dollar losses to vulnerable structures; and a general description of land uses and development trends within the community.
- Chapter 5, **Hazard Mitigation**, outlines the goals, strategies, and actions for the County. The proposed actions are presented in tables, categorized by the associated hazard and community, and then ranked from highest to lowest priority based on feedback received from County officials and participating jurisdictions and stakeholders. Excluded hazards are also documented in this section, along with the rationale for exclusion from the Plan.
- The final chapter (Chapter 6) of this Plan, **Schedule and Maintenance**, provides a summary of the proposed Plan adoption, integration, and maintenance schedule. This section describes how the County will review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within five years to continue to be eligible for mitigation project grant funding.

The resulting Athens County Hazard Mitigation Plan will be submitted to the Ohio Emergency Management Agency (Ohio EMA) and subsequently FEMA for their review. Following the agency review, the jurisdictions will then review the Plan for adoption. This hazard mitigation plan serves as a helpful tool for citizens, policymakers, local businesses, and other local stakeholders who all share a public interest in keeping Athens County as safe and resilient as possible. As such, this Plan aims to:

- Minimize property damage, economic loss, injury, and loss of human life – to achieve the Plan's main goal of reducing the impact of natural and manmade hazards on the County's economy and the well-being of its citizens.
- Enhance public awareness and education – to widen the public's understanding of natural and manmade hazards and how they might affect public health and safety, the environment, the local economy, and basic day-to-day operations.
- Coordinate inter-jurisdictional preparedness measures – to encourage and ensure multi-jurisdictional cooperation in County-wide mitigation actions and programs so that they may be implemented efficiently and effectively.



- Provide decision-making tools for interested stakeholders – to formulate a comprehensive, updated analysis of Athens County’s vulnerability to hazards so that decision makers can better prepare for natural and manmade disasters.
- Achieve regulatory compliance – to ensure that the County and its political subdivisions meet state and federal mitigation planning requirements so that they may be eligible to participate in and receive funding from grant programs, policies, and regulations.

1.2 Setting

Athens County is located in southeast Ohio and has a total area of approximately 508 square miles. The County contains two cities, eight villages, and fourteen townships (**Tables 1.1.1 and 1.1.2**). The City of Athens serves as the County seat. Athens County is bounded by six Ohio counties: Perry County to the north, Morgan County to the northeast, Washington County to the east, Meigs County to the south, Vinton County to the southwest, and Hocking County to the northwest. It is also bounded by one West Virginia county: Wood County to the southeast.

Land use patterns in Athens County are shown in **Figure 1.2.1**. Land use types include residential, agricultural, industrial, commercial, government/institutional, public utility, and vacant. Land cover in Athens County is shown in **Figure 1.2.2**. Land cover types include cultivated crops, forested, developed, herbaceous/grassland, wetlands, hay and pasture, open water, and shrub and scrub.

Figure 1.2.1: Athens County Land Use Map

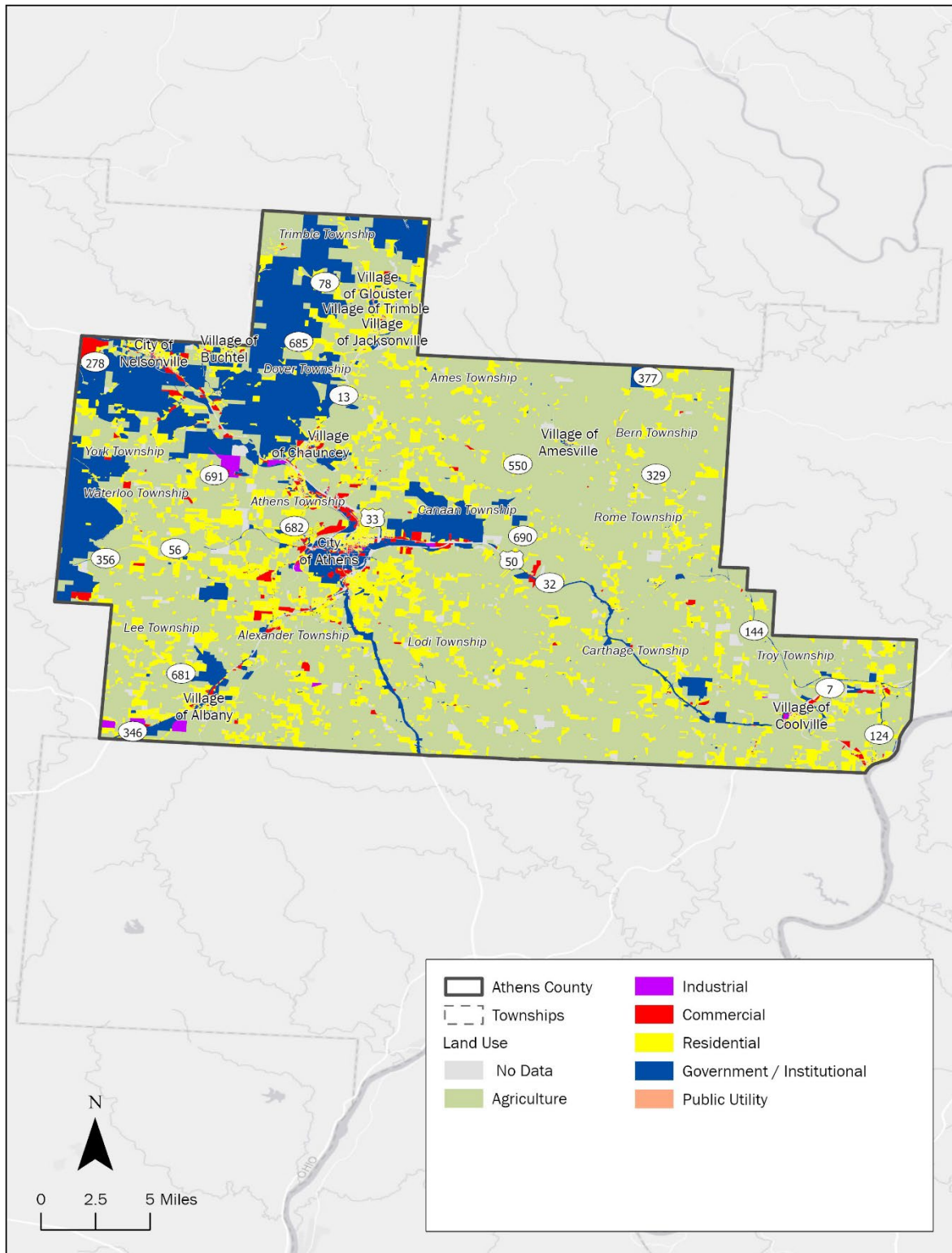
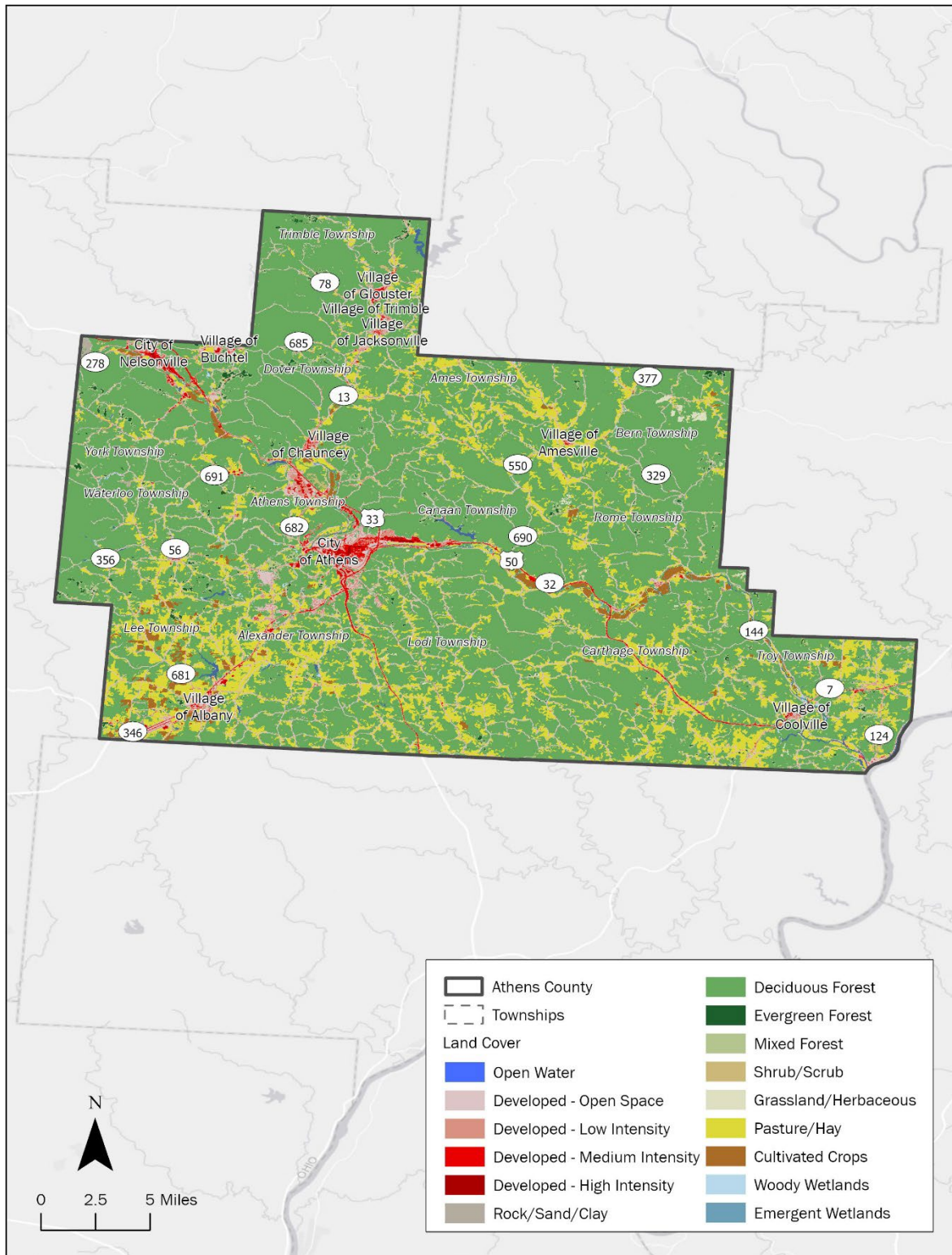


Figure 1.2.2: Athens County Land Cover Map

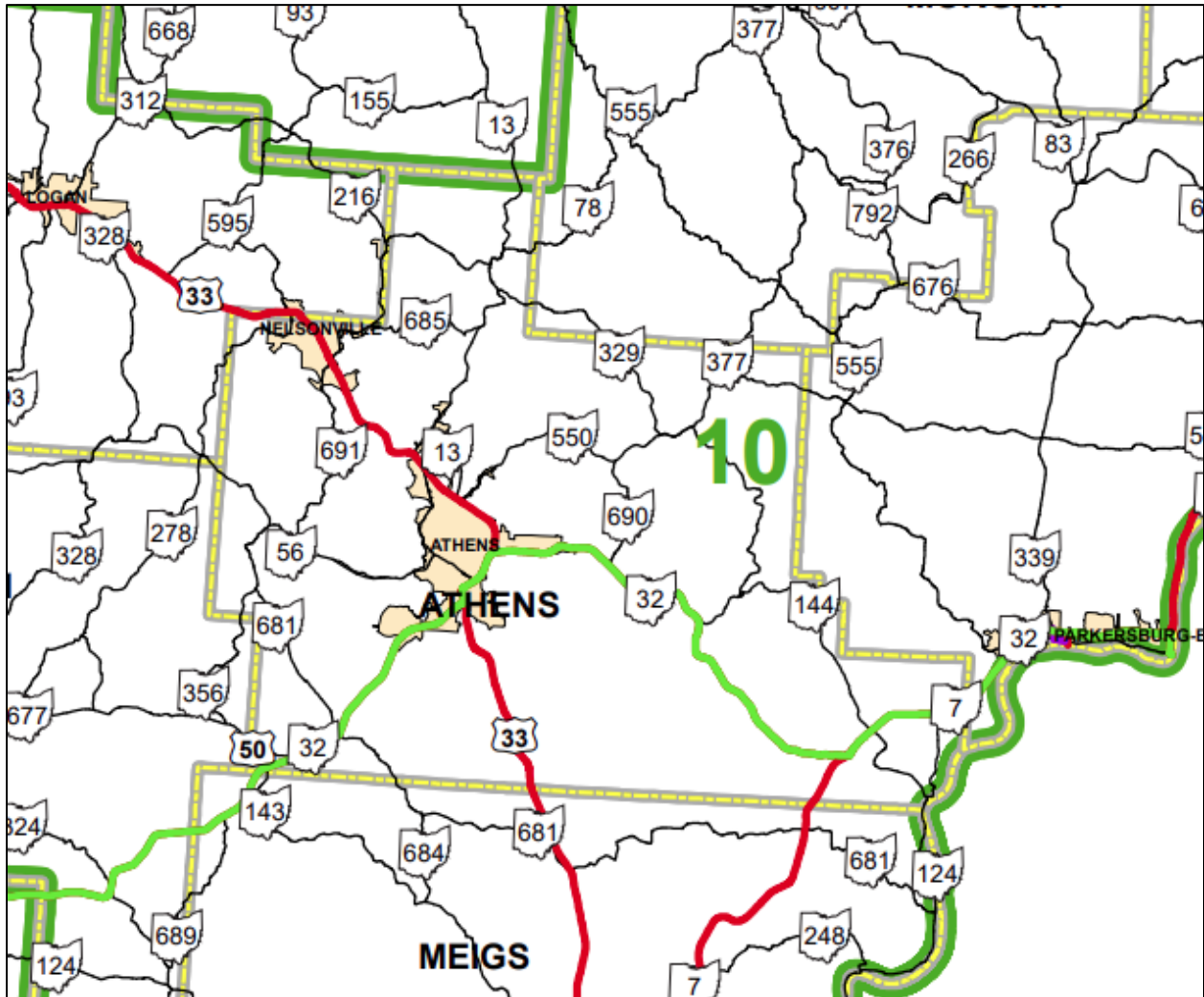


1.3 Region Features

Transportation

Athens County contains several major roadways, including several State Routes (SR) and two U.S. Highways (US). Athens County does not contain any Interstates (I). Major roadways in Athens County include SR-13, SR-32, SR-56, SR-78, SR-124, SR-144, SR-278, SR-329, SR-356, SR-377, SR-550, SR-681, SR-682, SR-685, SR-690, SR-691, US-33, and US-50. The United States Department of Transportation's Strategic Highway Network, used for national defense mobility and deployment of military equipment, extends through the southern half of Athens County along US-50 (Figure 1.3.1).

Figure 1.3.1: National Highway System & State Routes



Source: Ohio Department of Transportation (Highways are red while National Highways that serve as part of the Strategic Highway Network are green)

Athens County has one public-use airport, Ohio University Gordon K. Bush Airport, located two miles southwest of the Village of Albany.

Watco Companies, LLC and Hocking Valley Scenic Railway both have railway lines in Athens County. The Watco Companies line, known as the Kanawha River Railroad, runs north to south through the

Villages of Albany, Glouster, Chauncey, Jacksonville, and Trimble, the City of Athens, and the unincorporated communities of The Plains and Millfield. The Kanawha River Railroad provides freight connection between Columbus, Ohio, and the western portion of West Virginia. The Hocking Valley Scenic Railway is stationed in the City of Nelsonville, extending northwest into neighboring Hocking County. The Railway provides historic train rides throughout the year and is listed on the National Register of Historic Places.

The Hockhocking Adena Bikeway (**Figure 1.3.2**) is a non-motorized multiuse path that connects pedestrians to the Cities of Nelsonville and Athens, the Village of Chauncey, and the unincorporated communities of Canaanville and The Plains. The Bikeway is used as a means of both transportation and recreation for Athens County residents and visitors, providing access to the business districts of Athens, Nelsonville, and Chauncey, while also extending to the campuses of Hocking College, Athens High School, and Ohio University.

Figure 1.3.2: Hocking Adena Bikeway



Source: Orangedoug

Natural Features

Table 1.3.3 below lists Athens County parks and nature areas.

Table 1.3.3: Parks & Nature Areas in Athens County, Ohio

Parks & Nature Areas	
Acadia Cliffs State Nature Preserve	Hockhocking-Adena Bike Path
Armory Park	Moonville Rail-Trail
Burr Oak State Park	Richland Avenue Park



Parks & Nature Areas	
Camp Rotan	Riddle State Nature Preserve
Desonier State Nature Preserve	Sells Park
East State Street Park	Strouds Run State Park
Ferndale Park	Waterloo Wildlife Area
Fox Lake Wildlife Area	Wayne National Forest
Gifford State Park	West State Park
Highland Park	

Athens County also has several streams and water bodies which are listed in **Table 1.3.4** below.

Table 1.3.4: Athens County Streams and Water Bodies

Water Bodies		
Ash Pond	Guthrie Creek	Onion Creek
Athens Fish and Game Club Lake	Hamley Run	Opossum Run
Beal Lake	Hatch Fork Big Run	Picketts Run
Biddle Creek	Herrold Run	Pine Run
Big Bailey Run	Hewett Fork	Piper Run
Big Run	Hocking River	Pratts Fork
Bogie Run	Hyde Fork	Prists Fork
Boon Run	Indian Run	Rainbow Lake
Brill Run	Jackson Run	Rays Lake
Bryson Branch	Joes Run	Riley Run
Buck Lake	Johnson Run	Rockcamp Creek
Buckeye Run	Jordan Run	Rocky Riffle Run
Buckley Run	Kasler Creek	Rocky Run
Butts Run	Kelleys Run	Rodgers Fork
Buzzard Run	Kitten Run	Ross Run
Canaanville Run	Lake Snowden	Rowell Run
Carbondale Creek	Lead Run	Salt Creek
Carr Bailey Run	Leading Creek	Sawyer Run
Carters Fork	Lick Run	Scott Creek
Cherry Creek	Limeston Run	Shade River



Water Bodies		
Coal Fork	Linscott Run	Sharps Fork Federal Creek
Coal Run	Little Factory Creek	Sharps Run
Coates Run	Little Greens Run	Skunk Run
Congress Run	Long Run	Slater Brothers Pond
Dairy Run	Margaret Creek	Snow Fork
Dark Cave Run	Margaret Creek Conservancy District Reservoir	Spring Branch
Dirty Creek	Marietta Run	Spruce Run
Dorr Run	Matters Pond	Stony Camp Run
Dow Lake	McCunes Run	Strouds Run
Drapers Run	McDougall Branch	Sugar Creek
Duck Run	McGill Run	Sulphur Run
Dutch Creek	Meigs Creek	Sunday Creek
Duvals Run	Middle Branch Shade River	Swan Run
East Branch Fourmile Creek	Middle Branch	Tar Creek
East Branch Shade River	Mill Creek	Thompsons Fork
Ervin Run	Miller Run	Tiger Run
Ewing Run	Minkers Run	Trace Run
Factory Creek	Modoc Reservoir	Tucker Run
Federal Creek	Modoc Run	Twomile Run
Flat Run	Monday Creek	West Bailey Run
Fourmile Creek	Mud Fork	West Branch Margaret Creek
Fox Lake	Mud Lick Run	West Branch Sunday Creek
Frost Run	Mush Run	Whites Run
Goose Creek	Nellis Run	Willow Creek
Goose Run	Nices Run	Wolfpen Creek
Grass Run	North Branch Margaret Creek	Woods Lake
Greens Run	North Branch Margaret Creek	Wyatt Run

2 | History & Demographics

2.1 History

Athens County is located in southeastern Ohio and is bordered by Meigs, Vinton, Hocking, Perry, Morgan, and Washington Counties in Ohio, as well as Wood County in West Virginia. The County has a total area of 508 square miles, of which roughly 503.2 square miles are land, and 4.8 square miles are water. Athens County is the 23rd largest county in Ohio by total area. Formerly part of Washington County, Athens County was established on March 1st of 1805. Subsequently, portions of Athens County were taken to form parts of Hocking, Meigs, and Vinton Counties. Athens County is named after Athens, Greece, because it is home to Ohio University, the first state university in Ohio.

Twenty-nine properties throughout Athens County are listed on the National Register of Historic Places, with the first property, Ohio University's Manasseh Cutler Hall (**Figure 2.1.1**), being entered in 1966. Named after the New England physician, botanist, and minister, Manasseh Cutler, Cutler Hall was completed in 1819 and is now used as the main administration building for Ohio University.

Figure 2.1.1: Manasseh Cutler Hall



Source: National Archives Catalog (Left) and Orchysterium (Right)

Hocking River Channelization

The Hocking River and its tributaries, including Monday, Sunday, Federal, and Margaret Creeks, drain most of Athens County. While Ohio University was initially organized on the hilltops north of the Hocking River, continued growth brought development into the river's floodplain. By the mid-20th Century, the Hocking River had established itself as a disruptive force to the newly constructed University dormitories on East, South, and West Greens (**Figure 2.1.2**). Three of the river's ten highest recorded crests occurred between 1963-1968. The flood of 1964 caused an estimated \$1,300,000 in damages and, following this natural disaster, the United States Congress authorized the Athens Local Protection Project in 1965.

The Athens Local Protection Project was created to redirect approximately 5 miles of the Hocking River around the City of Athens and the campus of Ohio University. Designed and constructed by the U.S. Army Corps of Engineers in cooperation with the Hocking Conservancy District, the project rerouted the Hocking River while also expanding the bottom width of the river channel. Excavated materials were used to fill portions of the original channel and to construct embankments to protect the area from future overflow.

Construction of the new channel required a federal investment of approximately \$5,000,000 (**Appendix F**). The Hocking Conservancy District, representing the State and community stakeholders, coordinated the relocation of public streets and utilities, as well as provided the necessary land, rights of way, and easements for the redirected riverbanks.

The Hocking Conservancy District was also responsible for maintenance to the City of Athens and Ohio University storm sewer systems and the installation of three pumping stations for stormwater control. The Athens Local Protection Project broke ground on April 12, 1969, and construction was completed in 1972. In total, approximately 3,900,000 cubic yards of material were excavated, with 90,300 cubic yards of stone bank protection installed and over 300 acres seeded with 1,500 trees planted.

Coal Mining

The coal industry of Athens County has historically focused on mining the Middle Kittanning Number 6 coal seam in Ames, Athens, Canaan, Dover, Trimble, Waterloo, and York Townships as well as the Pittsburgh Number 8 coal bed in Alexander, Ames, Canaan, Bern, Lodi and Rome Townships. Additionally, the Meigs Creek Number 9 seam was mined northwest from the Village of Amesville in Ames Township.

Tragedy struck the local coal industry in 1930 when the Sunday Creek Coal Company Poston Mine Number 6 in Millfield, Dover Township, experienced an explosion approximately 10,200 feet from the main shaft. The Millfield Mine Disaster became the worst mine disaster in the State of Ohio, with 82 lives lost, and significantly impacted the Millfield community. While the Number 6 mine reopened and continued operations following the disaster, the mining operation in Millfield as a whole was abandoned in 1963 – one of many Athens County mining facilities that closed during the mid-20th Century.

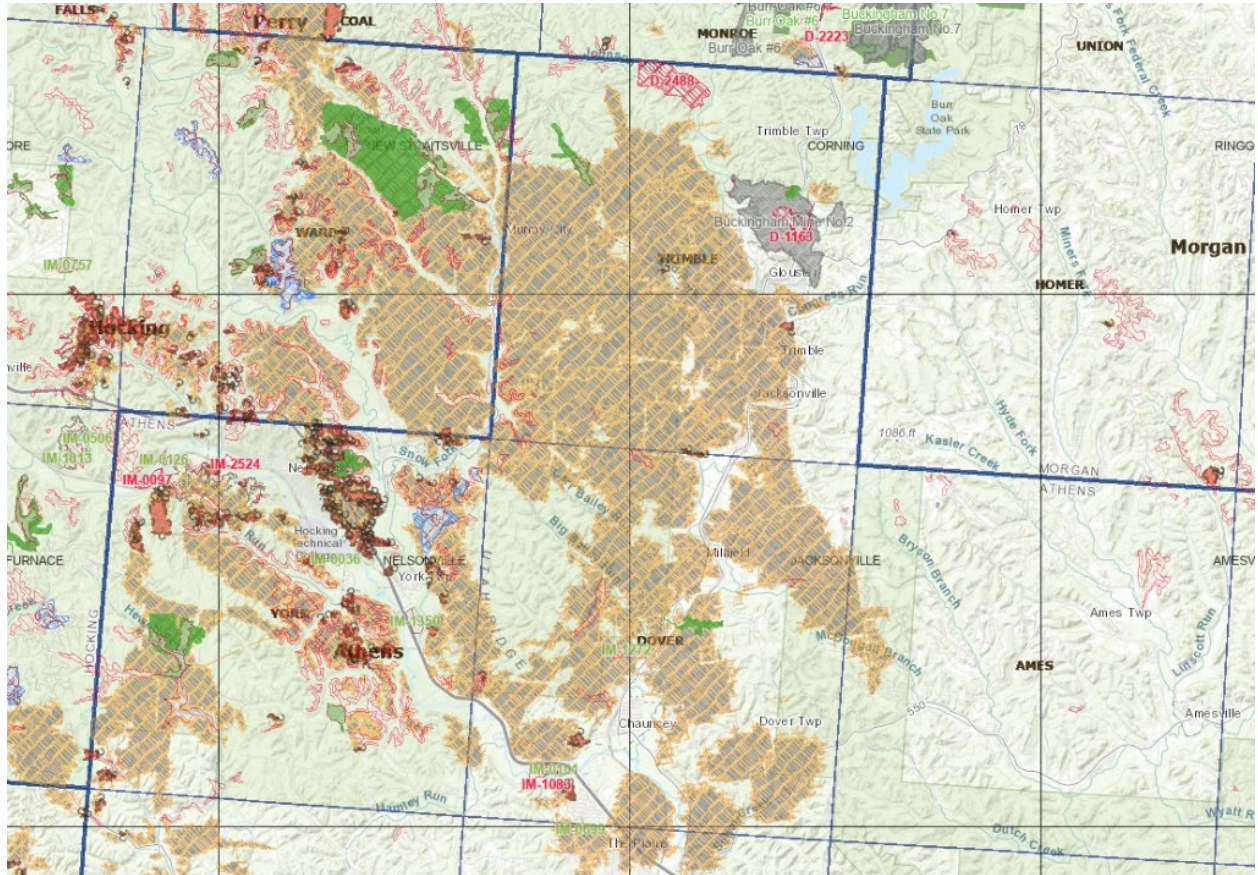
The legacy of Athens County's mining industry remains an important factor in future development considerations and hazard mitigation. Abandoned mines are prevalent throughout the county, particularly within Dover, Trimble, and York Townships (see the yellow/gray areas in Figure 2.1.3). Mine subsidence is an ongoing concern in this region, and both developers, financing agencies, and local jurisdictions should reference Section 4.6 of this Plan to ensure safe construction in areas of historically high underground mining activity.

Figure 2.1.2: Car Submerged in Floodwater, Ohio University East Green



Source: Ohio University Photographer Archives, Mahn Center for Archives & Special Collections, Ohio University Libraries

Figure 2.1.3: Detail of the Extent of Mapped Mine Locations (Active and Abandoned) in Ames, Dover, Trimble, and York Townships



Source: Ohio Department of Natural Resources – Division of Mineral Resources & Division of Geological Survey

2.2 Communication Outlets

A variety of communication outlets are available to the residents of Athens County, ranging in scale from local communities to County-wide notices. Methods of communication within the County include radio and television broadcasts, direct alert systems, and local government smartphone apps.

Athens County Emergency Management Agency – Hyper-Reach

The Athens County EMA provides citizens the opportunity to register for Hyper-Reach, a mass notification system designed to provide emergency alerts directly to registered residents. Users have the option to be notified via text message and/or an audio telephone call to their personal phone. Hyper-Reach is also available as a smartphone app through either the Apple App Store or Google Play Store.



Source: Hyper-Reach/Athens Co. EMA

City of Athens – The Government Channel (Spectrum Channel 1024)

The Government Channel is a television channel produced and distributed by the City of Athens to connect residents with their local government through live city meetings and locally produced educational programs. The Government Channel also provides alerts via a 24-hour bulletin board with city news and information.



Source: City of Athens

Athens County Sheriff's Office – Mobile App

The Athens County Sheriff's Office has developed a mobile phone app to improve communication between the Sheriff's Office and the Athens County community. The app allows citizens to report crimes, submit tips, and stay up to date on public notices issued by the Athens County Sheriff's Office. The app is available in both the Apple App Store and the Google Play Store.



Source: Athens County Sheriff's Dept.

City of Athens – Athens City Source Mobile App

The City of Athens has recently released the Athens City Source app to provide city residents a method of reporting issues such as vandalism or code violations, as well as receiving important City news and public announcements. To report possible violations, users will need to create an account on the app by creating a username and password. The app is available in both the Google Play Store and the Apple App Store.



Source: City of Athens

Athens County's primary communication outlets, including websites, television, and social media are listed in **Table 2.2.1**, below:

Table 2.2.1: Communication Outlets and Social Media

Jurisdiction/Entity	Source
Local Government Websites	
Athens County	https://www.co.athensoh.org/
Athens County Engineer	https://athenscountyengineer.org/
Athens County EMA	https://ema.athensoh.org/
Athens County 9-1-1	https://www.athens911.com/
Athens City-County Health Department	https://www.athenspublichealth.org/



Jurisdiction/Entity	Source
Local Government Websites	
Athens County Sherriff's Office	https://www.athenssheriff.com/
Athens Township	https://athenstwp.com/
Ames Township	https://sites.google.com/site/amestownship/
Canaan Township	https://canaantwpathensco.org/
Lodi Township	https://www.loditownship.org/
City of Athens	https://www.ci.athens.oh.us/
City of Nelsonville	https://www.cityofnelsonville.com/
Village of Albany	https://albanyoh.org/
Village of Amesville	http://www.amesvilleohio.org/
Village of Chauncey	https://villageofchauncey.com/
Village of Coolville	http://villageofcoolville.org/
Village of Jacksonville	https://jacksonvilleoh.com/
New Marshfield	https://newmarshfieldohio.wixsite.com/newmarshfield
Athens County Public Libraries	https://www.myacpl.org/
Richland Area Fire Department (Volunteer)	https://richlandareafire.com/
Social Media	
Athens County EMA	https://www.facebook.com/athens.ema/
Athens County Sheriff's Office	https://www.facebook.com/athenscountysheriff/
Athens County 9-1-1	https://www.facebook.com/Athenscounty911/
Athens City-County Health Department	https://www.facebook.com/athenscitycountyhd/
City of Athens	https://www.facebook.com/CityOfAthensOhioInfo/
City of Athens Fire Department	https://www.facebook.com/AthensFireDepartmentOhio/
City of Athens Police Department	https://www.facebook.com/AthensOhioPoliceDepartment/
City of Nelsonville	https://www.facebook.com/nelsonvillecity/
City of Nelsonville Division of Fire	https://www.facebook.com/NelsonvilleFireDepartment/
City of Nelsonville Police Department	https://www.facebook.com/nelsonvillepolice/
Village of Albany	https://www.facebook.com/Albany.Ohio/
Albany Area Volunteer Fire Department	https://www.facebook.com/p/Albany-Area-Volunteer-Fire-Department-100057352754495/



Jurisdiction/Entity	Source
Social Media	
Albany Police Department	https://www.facebook.com/AlbanyOhioPoliceDepartment/
Ames-Bern Volunteer Fire Department	https://www.facebook.com/people/Ames-Bern-Volunteer-Fire-Department/100064920000696/
The Plains Volunteer Fire Department	https://www.facebook.com/ThePlainsVolunteerFireDepartment/
Glouster Fire Department	https://www.facebook.com/p/Glouster-Fire-Department-100064392355725/
Richland Area Volunteer Fire Department	https://www.facebook.com/RichlandAreaFD/
York Township Volunteer Fire Department	https://www.facebook.com/YorkFD1500/
Village of Coolville	https://www.facebook.com/p/Village-of-Coolville-100068994856528/
Coolville Volunteer Fire Department	https://www.facebook.com/p/Coolville-Volunteer-Fire-Department-100063685174692/
Carthage Township Fire Department Station 26	https://www.facebook.com/people/Carthage-Township-Fire-Department-Station-26/100083294704651/
Village of Jacksonville	https://www.facebook.com/JacksonvilleOhio/
Jacksonville Volunteer Fire Department	https://www.facebook.com/JacksonvilleVFD
Rome Township Volunteer Fire Department	https://www.facebook.com/RTVFD19/
Waterloo Fire Department	https://www.facebook.com/WaterlooFire/
Athens County Public Libraries	https://www.facebook.com/MyACPL/
News Channels & Newspapers	
The Athens Messenger	https://www.athensmessenger.com/
The Post	https://www.thepostathens.com/
Athens County Independent	https://athensindependent.com/
The Athens News	https://www.athensnews.com/
WOUB Public Media	https://woub.org/news/
City of Athens Government Channel	https://www.ci.athens.oh.us/109/The-Government-Channel
NBC4i WCMH-TV	https://www.nbc4i.com/
WSAZ NewsChannel 3	https://www.wsaz.com/
CBS 10tv WBNS	https://www.10tv.com/
ABC 6 WSYX	https://abc6onyourside.com/
FOX 28 WTTE	https://myfox28columbus.com/



Jurisdiction/Entity	Source
News Channels & Newspapers	
The Logan Daily News	https://www.logandaily.com/
Logan-Hocking Times	https://www.loganhockingtimes.org/
The Parkersburg News & Sentinel	https://www.newsandsentinel.com/



2.3 Demographics Overview

This section provides select demographic information to help identify strategies to better serve the County residents during emergency hazard events. The information can be used to understand potential vulnerabilities in subgroups of the population. For example, knowing the number of senior citizens that live alone and that may require additional assistance during an emergency can help assistance organizations anticipate where additional services may be needed.

Table 2.3.1 below, provides a summary of the total population changes that have occurred in Athens County between the 2010 U.S. Census and the 2023 5-Year American Community Survey (ACS) Estimates based on census data. According to the U.S. Census, Athens County's population decreased by 3,184 people (-4.92 percent) between 2010 and 2023. For comparison, the U.S. population grew 9.04 percent and Ohio's population grew 2.49 percent during that period. Three townships – Canaan, Lee, and Rome Townships – experienced population growth. Of the townships experiencing population decline, Athens Township experienced the greatest population decline by persons with a decrease of 1,015 people (-3.33 percent), while Bern Township experienced the greatest population decline by percentage with a decrease of 165 people (-28.85 percent).

A more detailed description of population, housing, and income demographics for Athens County and each city and village jurisdiction is provided on the following pages.

Table 2.3.1: County And Township Population Growth Estimates Between 2010 Census and 2023 5-Year ACS Estimates

County/Township	Total Population 2010 Census	Total Population 2023 Estimate	2010-2023	
			Population Change	Percent Change
Athens County	64,757	61,573	-3,184	-4.92%
Alexander Township	2,811	2,780	-31	-1.10%
Ames Township	1,183	1,105	-78	-6.59%
Athens Township	30,473	29,458	-1,015	-3.33%
Bern Township	572	407	-165	-28.85%
Canaan Township	1,666	1,871	205	12.30%
Carthage Township	1,532	1,477	-55	-3.59%
Dover Township	3,626	3,306	-320	-8.83%
Lee Township	2,729	2,835	106	3.88%
Lodi Township	1,425	1,244	-181	-12.70%
Rome Township	1,320	1,664	344	26.06%
Trimble Township	4,480	4,040	-440	-9.82%
Troy Township	2,617	2,562	-55	-2.10%
Waterloo Township	2,562	2,007	-555	-21.66%
York Township	7,761	6,817	-944	-12.16%



Social Vulnerability Index Score

The Social Vulnerability Index Score is a component of the Center for Disease Control and Prevention (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI) measures the susceptibility (risk) of social groups to the adverse impacts of natural hazards that may result in disproportionate deaths, injury, loss, or disruption of livelihood. As FEMA explains, the “Social Vulnerability score considers the social, economic, demographic, and housing characteristics of a community that influence its ability to prepare for, respond to, cope with, recover from, and adapt to environmental hazards. The score and rating represent the relative level of a community’s social vulnerability compared to all other communities at the same level (e.g., county level). A community’s Social Vulnerability score is proportional to a community’s risk. A higher Social Vulnerability score results in a higher Risk Index score.”

According to the Center for Disease Control and Prevention (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI) Athens County has a calculated Social Vulnerability Index of 0.80 (on scale of 0 to 1) on a state level, which is considered a high level of susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S. For comparison, Ohio’s average Social Vulnerability Index is 0.50 on a state level. **Table 2.3.2** reports the SVI scores for socioeconomic status, housing type and transportation, race and ethnic minority status, and household characteristics for Athens County and Ohio at both the state and nation levels.

The score is calculated using U.S. Census data for 16 social factors, which research literature suggests contributes to the reduction in a community’s ability to prepare for, respond to, and recover from hazards, thus making the community more vulnerable. Each county is subdivided into census tracts, and each census track is ranked on the 16 social factors. The 16 social factors are organized into four themes. Each census track is ranked separately for each theme and receives an overall ranking. The four themes and social factors are described below according to the CDC/ATSDR Social Vulnerability Index:

1. **Socioeconomic Status:** this theme covers socioeconomic status, such as households with income below the 150-percentile poverty level, employment status, housing cost burden, high school diploma status, and if the household has health insurance.
2. **Housing Type and Transportation:** this theme covers multi-unit structures, mobile homes, crowding within households, households without a vehicle, and group quarters.
3. **Race and Ethnic Minority Status:** this theme covers the percentage of Hispanic or Latino (of any race); Black and African American (not Hispanic or Latino); American Indian and Alaska Native (not Hispanic or Latino); Native Hawaiian and Other Pacific Islander (not Hispanic or Latino); Two or More Races (not Hispanic or Latino); Other Races (not Hispanic or Latino).
4. **Household Characteristics:** this theme covers the elderly population (65 and older), children under 17 years of age, civilians with a disability, single-parent households, and the household’s English language proficiency.

Table 2.3.2 Social Vulnerability Score per Theme for Athens County and Ohio

Theme	Athens County (Statewide)	Ohio (Statewide)	Athens County (Nationwide)	Ohio (Nationwide)
Socioeconomic Status	0.86	0.50	0.72	0.37
Housing Type and Transportation	0.99	0.50	0.93	0.42
Race and Ethnic Minority Status	0.60	0.50	0.31	0.28
Household Characteristics	0.06	0.50	0.04	0.40



2.4 Community Profiles

Athens County

Athens County is located in southeast Ohio, and is part of the Athens, Ohio, Micro Area. As of the 5-Year ACS Estimates (census), the population was 61,573 making it the 41st most populated county in Ohio. The City of Athens is the largest city and serves as the County seat.

Tables 2.4.1 to 2.4.6 summarize the Athens County's population, housing statistics, and income statistics. There are 22,722 households of which 19.8 percent have at least one member under 18 years of age, and 28.4 percent have members 65 years and over. The largest percentage of households (15.1 percent) had an income between \$50,000 to \$74,999; approximately 9.5 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Athens County was the White (non-Hispanic) group, which makes up 89.2 percent of the population. Two or More Races is the second largest race (3.8 percent). Approximately 1.0 percent of the city's population speak Spanish at home. In addition, 1.7 percent speak another Indo-European language, 1.8 percent speak an Asian and Pacific Island language, and 1.0 percent speak another language.

Table 2.4.1: Athens County Population by Age Statistics 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	61,573	100%
Under 18 Years	9,160	14.88%
18 to 24 Years	16,056	26.08%
25 to 34 Years	7,380	11.99%
35 to 44 Years	6,592	10.71%
45 to 54 Years	6,212	10.09%
55 to 64 Years	7,120	11.56%
65 Years and Over	9,053	14.70%

Table 2.4.2: Athens County Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	26,466	100%
Occupied Housing Units	22,722	85.85%
Housing Units - Mobile Homes	2,986	13.14%
Vacant Housing Units	3,744	14.15%

**Table 2.4.3: Athens County Household Statistics 2023 ACS 5-Year Estimates**

Household Statistics	Number	Percentage
Total Households	22,722	-
Average Household Size	2.37	-
Households with People Under 18 Years	4,500	19.80%
Households with People 65+ Years	6,453	28.40%
Householder Living Alone 65+ Years	2,545	11.20%
No Vehicle Available	1,629	7.17%
With a Broadband Internet Subscription	19,345	85.14%

Table 2.4.4: Athens County Population by Race and Ethnicity Statistics 2023 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	61,573	100%
White	54,895	89.15%
Black or African American	1,526	2.48%
American Indian and Alaska Native	38	0.06%
Asian	1,293	2.10%
Native Hawaiian and other Pacific Islander	0	0%
Some Other Race	76	0.12%
Two or More Races	2,365	3.84%
Hispanic or Latino (of any race)	1,380	2.24%

Table 2.4.5: Athens County Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	59,273	100%
English only	55,943	94.38%
Spanish	607	1.02%
Other Indo-European languages	1,018	1.72%
Asian and Pacific Island languages	1,093	1.84%
Other languages	612	1.03%



Table 2.4.6: Athens County Household Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Number of Households
Less than \$10,000	9.50%
\$10,000 to \$14,999	6.30%
\$15,000 to \$24,999	10.70%
\$25,000 to \$34,999	8.60%
\$35,000 to \$49,999	12.50%
\$50,000 to \$74,999	15.10%
\$75,000 to \$99,999	12.30%
\$100,000 to \$149,999	14.10%
\$150,000 to \$199,999	5.30%
\$200,000 or more	5.60%
Median Household Income	\$53,837
Mean Household Income	\$75,116



City of Athens

Tables 2.4.7 to 2.4.12 summarize the City of Athens's population, housing statistics, and income statistics. There are 7,081 households of which 12.8 percent have at least one member under 18 years of age, and 14.4 percent have members 65 years and over. The largest percentage of households (16.6 percent) had an income of less than \$10,000. In 2023, the largest racial group in the City of Athens was the White (non-Hispanic) group, which makes up 81.4 percent of the population. Two or More Races is the second largest race (6.2 percent). Approximately 1.3 percent of the city's population speak Spanish at home. In addition, 2.1 percent speak another Indo-European language, 4.1 percent speak an Asian and Pacific Island language, and 2.4 percent speak another language.

Table 2.4.7: City of Athens Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	23,211	100%
Under 18 Years	1,836	7.91%
18 to 24 Years	13,206	56.90%
25 to 34 Years	2,566	11.06%
35 to 44 Years	1,656	7.13%
45 to 54 Years	1,199	5.17%
55 to 64 Years	1,309	5.64%
65 Years and Over	1,439	6.20%

Table 2.4.8: City of Athens Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	8,062	100%
Occupied Housing Units	7,081	87.83%
Housing Units - Mobile Homes	49	0.69%
Vacant Housing Units	981	12.17%

Table 2.4.9: City of Athens Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	7,081	-
Average Household Size	2.31	-
Households with People Under 18 Years	904	12.77%
Households with People 65+ Years	1,020	14.40%
Householder Living Alone 65+ Years	566	8.00%
No Vehicle Available	721	10.18%
With a Broadband Internet Subscription	6,177	87.23%

**Table 2.4.10: City of Athens Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	23,211	100%
White	18,890	81.38%
Black or African American	989	4.26%
American Indian and Alaska Native	16	0.07%
Asian	1,030	4.44%
Native Hawaiian and other Pacific Islander	0	0%
Some Other Race	21	0.09%
Two or More Races	1,440	6.20%
Hispanic or Latino (of any race)	825	3.55%

Table 2.4.11: City of Athens Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	22,767	100%
English only	20,523	90.14%
Spanish	298	1.31%
Other Indo-European languages	474	2.08%
Asian and Pacific Island languages	934	4.10%
Other languages	538	2.36%

Table 2.4.12: City of Athens Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	16.60%
\$10,000 to \$14,999	10.10%
\$15,000 to \$24,999	15.00%
\$25,000 to \$34,999	6.50%
\$35,000 to \$49,999	11.60%
\$50,000 to \$74,999	9.10%
\$75,000 to \$99,999	8.50%
\$100,000 to \$149,999	10.20%
\$150,000 to \$199,999	6.00%
\$200,000 or more	6.60%
Median Household Income	\$37,059
Mean Household Income	\$71,290



City of Nelsonville

Tables 2.4.13 to 2.4.18 summarize the City of Nelsonville's population, housing statistics, and income statistics. There are 1,345 households of which 21.3 percent have at least one member under 18 years of age, and 24.0 percent have members 65 years and over. The largest percentage of households (20.1 percent) had an income between \$50,000 to \$74,999; approximately 9.8 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the City of Nelsonville was the White (non-Hispanic) group, which makes up 88.4 percent of the population. Black or African American is the second largest race (5.0 percent). Approximately 0.14 percent of the city's population speak Spanish at home. In addition, 1.3 percent speak another Indo-European language, 0.17 percent speak an Asian and Pacific Island language, and 0.28 percent speak another language.

Table 2.4.13: City of Nelsonville Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	3,816	100%
Under 18 Years	702	18.40%
18 to 24 Years	883	23.14%
25 to 34 Years	702	18.40%
35 to 44 Years	352	9.22%
45 to 54 Years	368	9.64%
55 to 64 Years	409	10.72%
65 Years and Over	400	10.48%

Table 2.4.14: City of Nelsonville Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	1,810	100%
Occupied Housing Units	1,345	74.31%
Housing Units - Mobile Homes	103	7.66%
Vacant Housing Units	465	25.69%

Table 2.4.15: City of Nelsonville Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	1,345	-
Average Household Size	2.33	-
Households with People Under 18 Years	286	21.26%
Households with People 65+ Years	323	24.00%
Householder Living Alone 65+ Years	157	11.70%
No Vehicle Available	157	11.67%
With a Broadband Internet Subscription	1,218	90.56%

**Table 2.4.16: City of Nelsonville Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	3,816	100%
White	3,372	88.36%
Black or African American	192	5.03%
American Indian and Alaska Native	0	0%
Asian	8	0.21%
Native Hawaiian and other Pacific Islander	0	0%
Some Other Race	0	0%
Two or More Races	91	2.38%
Hispanic or Latino (of any race)	153	4.01%

Table 2.4.17: City of Nelsonville Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	3,547	100%
English only	3,479	98.08%
Spanish	5	0.14%
Other Indo-European languages	47	1.33%
Asian and Pacific Island languages	6	0.17%
Other languages	10	0.28%

Table 2.4.18: City of Nelsonville Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	9.80%
\$10,000 to \$14,999	14.00%
\$15,000 to \$24,999	10.10%
\$25,000 to \$34,999	10.50%
\$35,000 to \$49,999	10.70%
\$50,000 to \$74,999	20.10%
\$75,000 to \$99,999	8.60%
\$100,000 to \$149,999	12.60%
\$150,000 to \$199,999	3.60%
\$200,000 or more	0%
Median Household Income	\$42,281
Mean Household Income	\$52,027



Village of Albany

Tables 2.4.19 to 2.4.24 summarize the Village of Albany's population, housing statistics, and income statistics. There are 361 households of which 28.0 percent have at least one member under 18 years of age, and 38.2 percent have members 65 years and over. The largest percentage of households (25.8 percent) had an income between \$50,000 to \$74,999; approximately 6.4 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Village of Albany was the White (non-Hispanic) group, which makes up 97.4 percent of the population. Black or African American is the second largest race (1.3 percent). Approximately 0.24 percent of the city's population speak another Indo-European language at home.

Table 2.4.19: Village of Albany Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	909	100%
Under 18 Years	221	24.31%
18 to 24 Years	48	5.28%
25 to 34 Years	123	13.53%
35 to 44 Years	92	10.12%
45 to 54 Years	133	14.63%
55 to 64 Years	86	9.46%
65 Years and More	206	22.66%

Table 2.4.20: Village of Albany Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	415	100%
Occupied Housing Units	361	86.99%
Housing Units - Mobile Homes	33	9.14%
Vacant Housing Units	54	13.01%

Table 2.4.21: Village of Albany Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	361	-
Average Household Size	2.49	-
Households with People Under 18 Years	101	27.98%
Households with People 65+ Years	138	38.20%
Householder Living Alone 65+ Years	67	18.60%
No Vehicle Available	20	5.54%
With a Broadband Internet Subscription	327	90.58%

**Table 2.4.22: Village of Albany Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	909	100%
White	885	97.36%
Black or African American	12	1.32%
American Indian or Alaska Native	4	0.44%
Asian	0	0%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	0	0%
Two or More Races	8	0.88%
Hispanic or Latino (of any race)	0	0%

Table 2.4.23: Village of Albany Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	824	100%
English only	822	99.76%
Spanish	0	0%
Other Indo-European languages	2	0.24%
Asian and Pacific Island languages	0	0%
Other languages	0	0%

Table 2.4.24: Village of Albany Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	6.40%
\$10,000 to \$14,999	2.80%
\$15,000 to \$24,999	6.40%
\$25,000 to \$34,999	6.40%
\$35,000 to \$49,999	12.20%
\$50,000 to \$74,999	25.80%
\$75,000 to \$99,999	12.70%
\$100,000 to \$149,999	22.70%
\$150,000 to \$199,999	0%
\$200,000 or more	4.70%
Median Household Income	\$66,518
Mean Household Income	\$82,658



Village of Amesville

Tables 2.4.25 to 2.4.30 summarize the Village of Amesville's population, housing statistics, and income statistics. There are 68 households of which 14.7 percent have at least one member under 18 years of age, and 63.2 percent have members 65 years and over. The largest percentage of households (30.9 percent) had an income between \$75,000 to \$99,999. In 2023, the largest racial group in the Village of Amesville was the White (non-Hispanic) group, which makes up 98.9 percent of the population. Some Other Race is the second largest race (1.1 percent).

Table 2.4.25: Village of Amesville Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	189	100%
Under 18 Years	39	20.63%
18 to 24 Years	7	3.70%
25 to 34 Years	26	13.76%
35 to 44 Years	27	14.29%
45 to 54 Years	4	2.12%
55 to 64 Years	21	11.11%
65 Years and More	65	34.39%

Table 2.4.26: Village of Amesville Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	71	100%
Occupied Housing Units	68	95.77%
Housing Units - Mobile Homes	1	1.47%
Vacant Housing Units	3	4.23%

Table 2.4.27: Village of Amesville Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	68	-
Average Household Size	2.78	-
Households with People Under 18 Years	10	14.71%
Households with People 65+ Years	43	63.20%
Householder Living Alone 65+ Years	9	13.20%
No Vehicle Available	0	0%
With a Broadband Internet Subscription	63	92.65%

**Table 2.4.28: Village of Amesville Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	189	100%
White	187	98.94%
Black or African American	0	0%
American Indian or Alaska Native	0	0%
Asian	0	0%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	2	1.06%
Two or More Races	0	0%
Hispanic or Latino (of any race)	0	0%

Table 2.4.29: Village of Amesville Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	176	100%
English only	176	100%
Spanish	0	0%
Other Indo-European languages	0	0%
Asian and Pacific Island languages	0	0%
Other languages	0	0%

Table 2.4.30: Village of Amesville Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	0%
\$10,000 to \$14,999	1.50%
\$15,000 to \$24,999	5.90%
\$25,000 to \$34,999	7.40%
\$35,000 to \$49,999	11.80%
\$50,000 to \$74,999	16.20%
\$75,000 to \$99,999	30.90%
\$100,000 to \$149,999	11.80%
\$150,000 to \$199,999	7.40%
\$200,000 or more	7.40%
Median Household Income	\$80,417
Mean Household Income	\$88,510



Village of Buchtel

Tables 2.4.31 to 2.4.36 summarize the Village of Buchtel's population, housing statistics, and income statistics. There are 163 households of which 17.2 percent have at least one member under 18 years of age, and 35.0 percent have members 65 years and over. The largest percentage of households (22.7 percent) had an income between \$100,000 to \$149,999; approximately 8.0 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Village of Buchtel was the White (non-Hispanic) group, which makes up 77.6 percent of the population. Two or More Races is the second largest race (18.6 percent). Approximately 2.4 percent of the city's population speak Spanish at home.

Table 2.4.31: Village of Buchtel Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	425	100%
Under 18 Years	121	28.47%
18 to 24 Years	25	5.88%
25 to 34 Years	31	7.29%
35 to 44 Years	50	11.76%
45 to 54 Years	44	10.35%
55 to 64 Years	72	16.94%
65 Years and More	82	19.29%

Table 2.4.32: Village of Buchtel Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	182	100%
Occupied Housing Units	163	89.56%
Housing Units - Mobile Homes	34	20.86%
Vacant Housing Units	19	10.44%

Table 2.4.33: Village of Buchtel Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	163	-
Average Household Size	2.61	-
Households with People Under 18 Years	28	17.18%
Households with People 65+ Years	57	35.00%
Householder Living Alone 65+ Years	23	14.10%
No Vehicle Available	12	7.36%
With a Broadband Internet Subscription	134	82.21%

**Table 2.4.34: Village of Buchtel Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	425	100%
White	330	77.65%
Black or African American	6	1.41%
American Indian or Alaska Native	0	0%
Asian	0	0%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	0	0%
Two or More Races	79	18.59%
Hispanic or Latino (of any race)	10	2.35%

Table 2.4.35: Village of Buchtel Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	329	100%
English only	321	97.57%
Spanish	8	2.43%
Other Indo-European languages	0	0%
Asian and Pacific Island languages	0	0%
Other languages	0	0%

Table 2.4.36: Village of Buchtel Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	8.00%
\$10,000 to \$14,999	4.30%
\$15,000 to \$24,999	4.30%
\$25,000 to \$34,999	9.80%
\$35,000 to \$49,999	14.70%
\$50,000 to \$74,999	18.40%
\$75,000 to \$99,999	6.70%
\$100,000 to \$149,999	22.70%
\$150,000 to \$199,999	6.70%
\$200,000 or more	4.30%
Median Household Income	\$60,625
Mean Household Income	\$94,293



Village of Chauncey

Tables 2.4.37 to 2.4.42 summarize the Village of Chauncey's population, housing statistics, and income statistics. There are 389 households of which 17.2 percent have at least one member under 18 years of age, and 22.1 percent have members 65 years and over. The largest percentage of households (19.0 percent) had an income between \$35,000 to \$49,999; approximately 11.3 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Village of Chauncey was the White (non-Hispanic) group, which makes up 95.0 percent of the population. Two or More Races is the second largest race (2.2 percent). Approximately 1.7 percent of the city's population speak another Indo-European language at home

Table 2.4.37: Village of Chauncey Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	822	100%
Under 18 Years	99	12.04%
18 to 24 Years	32	3.89%
25 to 34 Years	111	13.50%
35 to 44 Years	115	13.99%
45 to 54 Years	168	20.44%
55 to 64 Years	183	22.26%
65 Years and More	114	13.87%

Table 2.4.38: Village of Chauncey Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	430	100%
Occupied Housing Units	389	90.47%
Housing Units - Mobile Homes	83	21.34%
Vacant Housing Units	41	9.53%

Table 2.4.39: Village of Chauncey Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	389	-
Average Household Size	2.11	-
Households with People Under 18 Years	67	17.22%
Households with People 65+ Years	86	22.10%
Householder Living Alone 65+ Years	21	5.40%
No Vehicle Available	48	12.34%
With a Broadband Internet Subscription	330	84.83%

**Table 2.4.40: Village of Chauncey Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	822	100%
White	781	95.01%
Black or African American	1	0.12%
American Indian or Alaska Native	0	0%
Asian	0	0%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	17	2.07%
Two or More Races	18	2.19%
Hispanic or Latino (of any race)	5	0.61%

Table 2.4.41: Village of Chauncey Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	801	100%
English only	787	98%
Spanish	0	0%
Other Indo-European languages	14	1.75%
Asian and Pacific Island languages	0	0%
Other languages	0	0%

Table 2.4.42: Village of Chauncey Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	11.30%
\$10,000 to \$14,999	6.40%
\$15,000 to \$24,999	8.50%
\$25,000 to \$34,999	17.20%
\$35,000 to \$49,999	19.00%
\$50,000 to \$74,999	15.90%
\$75,000 to \$99,999	7.70%
\$100,000 to \$149,999	12.60%
\$150,000 to \$199,999	0.50%
\$200,000 or more	0.80%
Median Household Income	\$36,356
Mean Household Income	\$52,876



Village of Coolville

Tables 2.4.43 to 2.4.48 summarize the Village of Coolville's population, housing statistics, and income statistics. There are 242 households of which 24.0 percent have at least one member under 18 years of age, and 29.8 percent have members 65 years and over. The largest percentage of households (15.7 percent) had an income between \$100,000 to \$149,999; approximately 2.9 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Village of Coolville was the White (non-Hispanic) group, which makes up 95.5 percent of the population. Two or More Races is the second largest race (2.2 percent). Approximately 0.69 percent speak another Indo-European language, 1.5 percent speak an Asian and Pacific Island language, and 0.86 percent speak another language in the home.

Table 2.4.43: Village of Coolville Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	595	100%
Under 18 Years	118	19.83%
18 to 24 Years	27	4.54%
25 to 34 Years	77	12.94%
35 to 44 Years	65	10.92%
45 to 54 Years	121	20.34%
55 to 64 Years	89	14.96%
65 Years and More	98	16.47%

Table 2.4.44: Village of Coolville Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	269	100%
Occupied Housing Units	242	89.96%
Housing Units - Mobile Homes	21	8.68%
Vacant Housing Units	27	10.04%

Table 2.4.45: Village of Coolville Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	242	-
Average Household Size	2.46	-
Households with People Under 18 Years	58	23.97%
Households with People 65+ Years	72	29.80%
Householder Living Alone 65+ Years	31	12.80%
No Vehicle Available	34	14.05%
With a Broadband Internet Subscription	227	93.80%

**Table 2.4.46: Village of Coolville Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	595	100%
White	568	95.46%
Black or African American	0	0%
American Indian or Alaska Native	0	0%
Asian	9	1.51%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	3	0.50%
Two or More Races	13	2.18%
Hispanic or Latino (of any race)	2	0.34%

Table 2.4.47: Village of Coolville Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	581	100%
English only	563	96.90%
Spanish	0	0%
Other Indo-European languages	4	0.69%
Asian and Pacific Island languages	9	1.55%
Other languages	5	0.86%

Table 2.4.48: Village of Coolville Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	2.90%
\$10,000 to \$14,999	13.20%
\$15,000 to \$24,999	15.30%
\$25,000 to \$34,999	7.90%
\$35,000 to \$49,999	14.00%
\$50,000 to \$74,999	15.30%
\$75,000 to \$99,999	12.80%
\$100,000 to \$149,999	15.70%
\$150,000 to \$199,999	0%
\$200,000 or more	2.90%
Median Household Income	\$48,333
Mean Household Income	\$60,206



Village of Glouster

Tables 2.4.49 to 2.4.54 summarize the Village of Glouster's population, housing statistics, and income statistics. There are 639 households of which 31.5 percent have at least one member under 18 years of age, and 33.3 percent have members 65 years and over. The largest percentage of households (21.3 percent) had an income between \$35,000 to \$49,999; approximately 9.1 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Village of Glouster was the White (non-Hispanic) group, which makes up 94.5 percent of the population. Two or More Races is the second largest race (2.7 percent). Approximately 0.14 percent of the city's population speak Spanish at home. In addition, 0.55 percent speak an Asian and Pacific Island language.

Table 2.4.49: Village of Glouster Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	1,556	100%
Under 18 Years	420	26.99%
18 to 24 Years	74	4.76%
25 to 34 Years	178	11.44%
35 to 44 Years	173	11.12%
45 to 54 Years	241	15.49%
55 to 64 Years	204	13.11%
65 Years and More	266	17.10%

Table 2.4.50: Village of Glouster Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	756	100%
Occupied Housing Units	639	84.52%
Housing Units - Mobile Homes	41	6.42%
Vacant Housing Units	117	15.48%

Table 2.4.51: Village of Glouster Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	639	-
Average Household Size	2.44	-
Households with People Under 18 Years	201	31.46%
Households with People 65+ Years	213	33.30%
Householder Living Alone 65+ Years	93	14.60%
No Vehicle Available	74	11.58%
With a Broadband Internet Subscription	493	77.15%

**Table 2.4.52: Village of Glouster Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	1,556	100%
White	1,471	94.54%
Black or African American	20	1.29%
American Indian or Alaska Native	9	0.58%
Asian	8	0.51%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	0	0%
Two or More Races	42	2.70%
Hispanic or Latino (of any race)	6	0.39%

Table 2.4.53: Village of Glouster Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	1,454	100%
English only	1,444	99.31%
Spanish	2	0.14%
Other Indo-European languages	0	0%
Asian and Pacific Island languages	8	0.55%
Other languages	0	0%

Table 2.4.54: Village of Glouster Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	9.10%
\$10,000 to \$14,999	10.60%
\$15,000 to \$24,999	7.40%
\$25,000 to \$34,999	16.60%
\$35,000 to \$49,999	21.30%
\$50,000 to \$74,999	16.30%
\$75,000 to \$99,999	13.50%
\$100,000 to \$149,999	3.60%
\$150,000 to \$199,999	1.70%
\$200,000 or more	0%
Median Household Income	\$37,639
Mean Household Income	\$46,623



Village of Jacksonville

Tables 2.4.55 to 2.4.60 summarize the Village of Jacksonville's population, housing statistics, and income statistics. There are 155 households of which 11.0 percent have at least one member under 18 years of age, and 58.1 percent have members 65 years and over. The largest percentage of households (28.4 percent) had an income between \$50,000 to \$74,999; approximately 1.9 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Village of Jacksonville was the White (non-Hispanic) group, which makes up 98.5 percent of the population. Two or More Races is the second largest race (1.5 percent).

Table 2.4.55: Village of Jacksonville Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	343	100%
Under 18 Years	49	14.29%
18 to 24 Years	9	2.62%
25 to 34 Years	54	15.74%
35 to 44 Years	29	8.45%
45 to 54 Years	39	11.37%
55 to 64 Years	33	9.62%
65 Years and More	130	37.90%

Table 2.4.56: Village of Jacksonville Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	178	100%
Occupied Housing Units	155	87.08%
Housing Units - Mobile Homes	18	11.61%
Vacant Housing Units	23	12.92%

Table 2.4.57: Village of Jacksonville Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	155	-
Average Household Size	2.21	-
Households with People Under 18 Years	17	10.97%
Households with People 65+ Years	90	58.10%
Householder Living Alone 65+ Years	30	19.40%
No Vehicle Available	5	3.23%
With a Broadband Internet Subscription	109	70.32%

**Table 2.4.58: Village of Jacksonville Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	343	100%
White	338	98.54%
Black or African American	0	0%
American Indian or Alaska Native	0	0%
Asian	0	0%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	0	0%
Two or More Races	5	1.46%
Hispanic or Latino (of any race)	0	0%

Table 2.4.59: Village of Jacksonville Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	332	100%
English only	332	100%
Spanish	0	0%
Other Indo-European languages	0	0%
Asian and Pacific Island languages	0	0%
Other languages	0	0%

Table 2.4.60: Village of Jacksonville Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	1.90%
\$10,000 to \$14,999	0.60%
\$15,000 to \$24,999	7.10%
\$25,000 to \$34,999	21.30%
\$35,000 to \$49,999	7.10%
\$50,000 to \$74,999	28.40%
\$75,000 to \$99,999	12.90%
\$100,000 to \$149,999	9.00%
\$150,000 to \$199,999	0%
\$200,000 or more	11.60%
Median Household Income	\$64,135
Mean Household Income	\$75,919



Village of Trimble

Tables 2.4.61 to 2.4.66 summarize the Village of Trimble's population, housing statistics, and income statistics. There are 157 households of which 30.6 percent have at least one member under 18 years of age, and 26.8 percent have members 65 years and over. The largest percentage of households (26.8 percent) had an income between \$35,000 to \$49,999; approximately 8.9 percent of households had an annual income of less than \$10,000. In 2023, the largest racial group in the Village of Trimble was the White (non-Hispanic) group, which makes up 99.5 percent of the population. Black or African American and Two or More races are the second largest race (0.225 percent each).

Table 2.4.55: Village of Trimble Population by Age 2023 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	444	100%
Under 18 Years	94	21.17%
18 to 24 Years	17	3.83%
25 to 34 Years	87	19.59%
35 to 44 Years	69	15.54%
45 to 54 Years	76	17.12%
55 to 64 Years	45	10.14%
65 Years and More	56	12.61%

Table 2.4.56: Village of Trimble Housing Statistics 2023 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	176	100%
Occupied Housing Units	157	89.20%
Housing Units - Mobile Homes	51	32.48%
Vacant Housing Units	19	10.80%

Table 2.4.57: Village of Trimble Household Statistics 2023 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	157	-
Average Household Size	2.83	-
Households with People Under 18 Years	48	30.57%
Households with People 65+ Years	42	26.80%
Householder Living Alone 65+ Years	29	18.50%
No Vehicle Available	6	3.82%
With a Broadband Internet Subscription	104	66.24%

**Table 2.4.58: Village of Trimble Race and Ethnicity Statistics 2023 ACS 5-Year Estimates**

Race and Ethnicity	Number	Percentage
Total Population	444	100%
White	442	99.55%
Black or African American	1	0.225%
American Indian or Alaska Native	0	0%
Asian	0	0%
Native Hawaiian or Pacific Islander	0	0%
Some Other Race (One Race)	0	0%
Two or More Races	1	0.225%
Hispanic or Latino (of any race)	0	0%

Table 2.4.59: Village of Trimble Language Spoken at Home Statistics 2023 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	405	100%
English only	405	100%
Spanish	0	0%
Other Indo-European languages	0	0%
Asian and Pacific Island languages	0	0%
Other languages	0	0%

Table 2.4.60: Village of Trimble Income Statistics 2023 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	8.90%
\$10,000 to \$14,999	7.00%
\$15,000 to \$24,999	7.60%
\$25,000 to \$34,999	12.10%
\$35,000 to \$49,999	26.80%
\$50,000 to \$74,999	15.90%
\$75,000 to \$99,999	7.60%
\$100,000 to \$149,999	14.00%
\$150,000 to \$199,999	0%
\$200,000 or more	0will%
Median Household Income	\$46,250
Mean Household Income	\$49,724

3 | Planning Process



3.1 Methodology

The Planning Process chapter describes the steps involved in the development of the 2025 Athens County Hazard Mitigation Plan, including details about who participated, how community involvement was organized and promoted throughout the community, what hazards were included in the Plan and why, as well as how stakeholder involvement played a critical role in the planning process. This chapter also explains how the Core Planning Committee was formed and how member feedback contributed to the updating of the County's Hazard Mitigation Plan.

3.2 Existing Plans & Regulations

Athens County and the State of Ohio maintain several plans and tools that were pertinent to reference in the development of the 2025 Hazard Mitigation Plan, including:

- 2020 Athens County Natural Hazards Mitigation Plan
- 2024 State of Ohio Hazard Mitigation Plan (SOHMP)
- Athens County Comprehensive Plan
- Community Wildfire Preparedness Plan (CWPP) and Wildfire Safety Annex
- Athens County Emergency Operations Plan
- Athens County Active Transportation Plan
- Age-Friendly Athens County Action Plan
- Zoning Regulations for Local Jurisdictions
- Athens County Subdivision Regulations
- Athens County Hocking River Land Use Plan

3.3 Athens County Authority to Adopt Plan

The Athens County Board of Commissioners are elected at large for four-year terms. The board members are the budgeting, appropriating, taxing, and purchasing authority. The Athens County Planning Commission was established by the Athens County Board of Commissioners in conformance with Section 713.21 of the Ohio Revised Code. The authority to adopt plans comes from statutory law and from Chapter 307 of the Ohio Revised Code. **Table 3.1.1** lists the existing authorities and regulations in place in Athens County and its municipalities.

Table 3.3.1: Existing Authorities and Regulations in Athens County's Municipalities

Community	Planning Commission	Comprehensive Plan	Floodplain Regulation	Building Codes*	Zoning Codes	Capital Budget	Public Works Budget
Athens County	Yes	Yes	Yes	Yes	No	Yes	Yes
City of Athens	Yes	Yes	Yes	Yes	Yes**	Yes	Yes
City of Nelsonville	Yes	No	Yes	Yes	Yes	Yes	Limited in-kind wages only



Community	Planning Commission	Comprehensive Plan	Floodplain Regulation	Building Codes*	Zoning Codes	Capital Budget	Public Works Budget
Village of Albany	Yes	Yes	Yes	Yes	Yes	No	Limited in-kind wages only
Village of Amesville	Yes	Yes	Yes	Yes	No	No	Limited in-kind wages only
Village of Buchtel	No	No	Yes	Yes	No	Yes	Limited in-kind wages only
Village of Chauncey	Yes	No	Yes	Yes	Yes	No	Limited in-kind wages only
Village of Coolville	No	No	Yes	Yes	No	No	Limited in-kind wages only
Village of Glouster	No	No	Yes	Yes	No	No	Limited in-kind wages only
Village of Jacksonville	No	No	Yes	Yes	No	No	Limited in-kind wages only
Village of Trimble	No	No	Yes	Yes	No	No	Limited in-kind wages only

* All jurisdictions within the state now follow the State Building Code (Ohio Administrative Code 4101:1) for commercial/industrial structures and residential structures with four or more units.

** Athens Township administers zoning regulations for the unincorporated portion of the Township commonly known as The Plains. This is the only unincorporated area within Athens County with Zoning.



3.4 Notification Process

Core Planning Committee members were invited to participate at the beginning of the planning process through a Kickoff Meeting announcement. Prior to each additional meeting, members of the Core Planning Committee were invited to participate via email notification. Representatives from the following entities were invited to participate in the planning process. Additionally, **Table 3.4.1** lists the participating jurisdictions and representatives and how they participated.

Athens County

- Athens County 911
- Athens County Auditor
- Athens County Board of Developmental Disabilities
- Athens County Commissioners
- Athens County Coroner
- Athens County Planning Office
- Athens County Economic Development Council
- Athens County Fire Department
- Athens County Public Health
- Athens County Sheriff
- Athens Soil and Water Conservation District
- Athens-Hocking Solid Waste District

City and Village Members

- City of Athens
- City of Nelsonville
- Village of Albany
- Village of Amesville
- Village of Buchtel
- Village of Chauncey
- Village of Coolville
- Village of Glouster
- Village of Jacksonville
- Village of Trimble

Township Members

- Alexander Township
- Ames Township
- Athens Township
- Bern Township
- Canaan Township
- Carthage Township
- Dover Township
- Lee Township
- Lodi Township
- Rome Township
- Trimble Township
- Troy Township
- Waterloo Township
- York Township

Local Schools and Universities

- Ohio University
- Athens City School District

Other Organizations

- American Power and Light Electric Company
- American Red Cross
- Burrow Oak Regional Water District
- Corporation for Ohio Appalachian Development
- Le-Ax Water
- Hocking Athens Perry County Community Action (HAPCAP)
- The Athens Conservancy
- Hocking River Commission
- Holzer Health System
- Ohio Farm Bureau
- Rural Action
- Hocking County
- Ohio Department of Natural Resources
- Ohio Health
- The Gathering Place – Athens, Ohio



Table 3.4.1: Participating Jurisdictions

Community/ Organization	Stakeholders	Surveys Completed				Meetings Attended		
		Goals	Hazard Priorities	Previous Mitigation Actions	New Mitigation Actions	1	2	Other
County								
Athens County	Connor LaVelle – County Planner/Floodplain Administrator Lenny Eliason – Commissioner	✓	✓	✓	✓	✓	✓	✓
Athens County Auditor	Scott E. Dunfee – GIS Coordinator				✓	✓		
Athens County Board of Developmental Disabilities	Autumn Brown – Director	✓				✓		
Athens County EMA	Melissa Blank – Deputy Director Teresa Fouts-Imler – Director	✓	✓	✓	✓	✓	✓	✓
Athens County Coroner’s Office	Ben Ashcraft – Director	✓	✓	✓		✓		
Athens County Health Department	Patrick McGarry – Director of Environmental Health Kate Cottrill – SEC Regional Public health Coordinator	✓	✓			✓		
Athens County Public Libraries	Nick Tepe - Director	✓	✓	✓		✓		
Athens-Hocking Solid Wast District	Jane Forrest Redfern - Director	✓	✓			✓		
Jurisdictions								
City of Athens	Meghan Jennings – City Planner Robert Rymer – Fire Chief Robin Dewey – Admin Asst. Senior Division	✓	✓	✓		✓		✓
City of Nelsonville	Devon Tolliver – Chief of Police	✓	✓					✓
Village of Albany	Kevin Brown – Administrator	✓	✓	✓	✓			✓
Village of Amesville	Gary Goosman – Mayor	✓	✓	✓	✓			✓
Village of Buchtel								
Village of Chauncey	Drew Daniels – Code Inspector/Floodplain Manger Chris Russell – Administrator	✓	✓	✓	✓	✓		
Village of Coolville	Christy Bonner – Councilwoman	✓	✓	✓	✓	✓		✓
Village of Glouster	Nathon Simons – Mayor	✓	✓	✓	✓			✓
Village of Jacksonville	Heather Rockwell – Fiscal Officer	✓	✓	✓	✓			✓
Village of Trimble	Doug Davis – Mayor	✓	✓	✓	✓			✓



Community/ Organization	Stakeholders	Surveys Completed				Meetings Attended		
		Goals	Hazard Priorities	Previous Mitigation Actions	New Mitigation Actions	1	2	Other
Other								
Athens Township	Steve Pierson – Trustee Ted Linscott – Trustee					✓		
Waterloo Township	Samuel A Reinhart – Maintenance	✓	✓	✓	✓			✓
York Township	Bill Mellinger - Trustee	✓				✓		

If representatives were unable to attend the virtual Core Planning Committee meetings, they participated via “Other” formats, including online surveys, as documented in **Appendix G**.

The following section details the meetings that took place during the planning process. Documentation of each meeting, including newspaper postings, email announcements and attachments, meeting materials, and completed surveys, can be found in **Appendix G**. The City of Nelsonville and the Village of Buchtel did not fully participate in the planning and will not be adopting the 2025 Hazard Mitigation Plan.

3.5 Meetings

Core Planning Committee Kick off

A kickoff announcement was emailed to stakeholders on February 13, 2025, inviting them to participate in the 2025 Athens County Hazard Mitigation Plan update process as part of the Core Planning Committee. All kickoff materials were made available on the project’s website (<http://www.burtonplanning.com/Athens-hmp>).

The Announcement outlined the following details regarding the planning process:

- Goals of the Hazard Mitigation Plan
- A summary of who is involved in the planning process
- Federal requirements of the hazard mitigation planning process
- An overview of the hazard mitigation planning process
- The proposed schedule for the Athens County Plan update
- The role of the Core Planning Committee in the update process
- Contact information for both Athens County EMA and Burton Planning Services
- Dates, times, and Microsoft Teams links of upcoming Core Planning and Public Meetings

Core Planning Meeting and Public Meeting 1

The first meetings were open to both the core planning members and the public. They were held both virtually and in-person on Wednesday, March 19, 2025, at 1:00 P.M and at 5:00 P.M at the Athens County 911 Building. The meetings began with a brief introduction from a Burton Planning Services (BPS) representative. This introduction included a description of the in-person and virtual engagement process, including multiple options for participants to sign into the meeting. Participants that attended virtually were reminded multiple times throughout the course of the meeting to sign in using the online survey, via the chat function, or by sending an email to the County EMA or BPS. Participants that attended in-person used the sign-in sheets for attendance. The introduction also informed attendees



that they could ask questions using the chat feature, or by unmuting themselves and asking their questions at any time throughout the meeting.

A BPS representative then guided the attendees through a presentation which detailed the hazard mitigation planning process, including requirements of the planning process, potential hazards that could be addressed, benefits of hazard mitigation planning, and potential types of projects that could be federally funded because of the hazard mitigation plan. BPS also described the role that the Core Planning Committee would serve in the development of the 2025 Athens County Hazard Mitigation Plan.

A total of 17 people attended the afternoon meeting in person and four people attended virtually, including the Athens County EMA Director and Deputy Director. Representatives from the Ohio Department of Natural Resources, Ohio Farm Bureau, Athens County Auditor, Athens County Coroner, Athens County Public Libraries, Athens County Public Health and Athens County Planner, as well as the City of Athens, Athens Township, Village of Chauncey, Village of Coolville and the Athens-Hocking Solid Waste District attended the afternoon meeting. Also present were representatives of Ohio University, Memorial Health System, and the Athens Independent Newspaper. No members of the public attended the afternoon meeting.

A total of seven people attended the evening meeting, including the Athens County EMA Director and Deputy Director, along with representatives from Athens County planning, Athens and York Townships, the Corporation for Ohio Appalachian Development and an online participant who did not provide full identification.

Following the completion of the presentation, a BPS representative guided the attendees through three surveys, detailed below. Each participant was provided with multiple methods of completing the survey, including a physical hard copy of the survey, a fillable PDF that could be completed on their computer, or an online version. Links to survey locations were provided throughout the meeting. Public input was requested using social media and local news outlets.

Goals Survey

The purpose of this survey was to reflect on the goals included in the 2020 Hazard Mitigation Plan to determine if they were still relevant to the 2025 Plan. Each attendee reviewed the previous goals and determined if they were still applicable, provided comments or edits to the goals that needed to be changed, and generated new goals to potentially be included in the 2025 Plan.

Discussion on the Goals Survey centered around the relevance of the goals. Attendees indicated a preference for adding a goal related to water treatment and water delivery systems. Other attendees mentioned the relevance of invasive species to the Plan.

Hazard Priority Survey

The purpose of this survey was to review all hazards that could be included in the 2025 Hazard Mitigation Plan and prioritize them. As such, attendees were asked to rate each hazard on a scale of zero to five, with five meaning the hazard poses the greatest possible threat to the County or their community and zero meaning the hazard should not be included in the 2025 Plan. Attendees rated hazards that were included in the 2025 Hazard Mitigation Plan, as well as all potential hazards that could be included in the 2025 Plan.

Following the completion of this survey, BPS guided a discussion on which hazards were deemed to be most important and which hazards attendees did not think needed to be included. As mentioned above, attendees emphasized invasive species during this part of the meeting.



Previous Mitigation Actions Status Survey

The purpose of the Previous Mitigation Actions Status Survey was to have attendees review the mitigation actions that were included in the 2020 Hazard Mitigation Plan, reflect on the status of each action, and determine if that action should be included in the 2025 Hazard Mitigation Plan.

Core Planning Meeting and Public Meeting 2

The second meetings were open to both the core planning members and the public. They were held both virtually and in-person on Wednesday, April 28, 2025, at 1:00 P.M and at 5:00 P.M at the Athens County 911 Building. The meetings began with a brief introduction from a Burton Planning Services (BPS) representative. This introduction included a description of the in-person and virtual engagement process, including multiple options for participants to sign into the meeting. Participants that attended virtually were reminded multiple times throughout the course of the meeting to sign in using the online survey, via the chat function, or by sending an email to the County EMA or BPS. Participants that attended in-person used the sign-in sheets for attendance. The introduction also informed attendees that they could ask questions using the chat feature, or by unmuting themselves and asking their questions at any time throughout the meeting.

A BPS representative then guided the attendees through a presentation which detailed the hazard mitigation planning process, including requirements of the planning process, potential hazards that could be addressed, benefits of hazard mitigation planning, and potential types of projects that could be federally funded because of the hazard mitigation plan. BPS also described the role that the Core Planning Committee would serve in the development of the 2025 Athens County Hazard Mitigation Plan.

A total of 28 people attended the morning meeting, including representatives from the Athens County EMA, Athens County Public Health, Athens Sanitary Engineering, Athens County Sheriff's Office, Athens county Board of Developmental Disabilities, Athens Health/Athens General Hospital, Athens City Police Department, Athens County Historical Society, Tully Township, Salt Rock Township, Athens Township, Pleasant Local Schools, First Energy, ADAMH, Poet, OHSP, MCRPC, ODOT, and Ohio EMA.

No members of the public or planning committee attended the evening meeting.

Following the completion of the presentation, a BPS representative guided the attendees through a survey detailed below. Each participant was provided with multiple methods of completing the survey, including a physical hard copy of the survey, a fillable PDF that could be completed on their computer, or an online version. Links to survey locations were provided throughout the meeting. Public input was requested using social media.

Hazard Mitigation Action Scoring Matrix

The purpose of this survey was to reflect on the hazard mitigation actions included in the 2020 Hazard Mitigation Plan to determine if they were still relevant to the 2025 Plan. New mitigation actions were developed for the 2025 Plan, and these actions were presented to the Core Planning Committee. Participants were asked to score the actions based on their priority for their jurisdiction. Participants were also told that the wording for the mitigation actions may be altered to better align with the needs of their communities. The remainder of the meeting functioned as a working session, where participants were able to ask questions as they completed their surveys. Once completed, the meeting was adjourned.

4 | Risk Assessments

4.1 Dam/Levee Failure

Description

FEMA defines a dam as “any artificial barrier of at least a minimum size, including appurtenant works, that impounds or diverts water or liquid-borne solids on a temporary or long-term basis.” Dam failure occurs when that impounded water is suddenly released in an uncontrollable manner. A dam/levee failure can result in the uncontrolled release of floodwater downstream of a facility, resulting in a flood wave that can cause significant damage to buildings and infrastructure downstream. The unexpected nature of dam collapse also increases the likelihood of loss of life in the impacted area due to reduced warning times.



Tom Jenkins Dam (File Photo)

Dam infrastructure can be affected by natural hazards, such as floods or man-made threats, such as sabotage. An imbalance between a dam’s age and amount of resources invested towards dam maintenance can be detrimental to the dam’s condition. Maintenance issues include dam settlement and cracking, or movement of the dam’s foundation. Dam failures can be caused by seepage, structural failure, or water overtopping the reservoir. Most dams in the U.S. are privately owned but regulated by the State or Federal government.

The National Flood Insurance Program (NFIP) defines a levee as “a man-made structure, usually an earthen embankment, designed and constructed in accordance with the sound engineering practice to contain, control, or divert the flow of water so as to reduce risk from temporary flooding.” Levees are built parallel to waterways to reduce the risk of flood damage to neighboring infrastructure. Levee failure can occur from improper maintenance, erosion, seepage, subsidence, and when the man-made structure fails.

Common dam-related terms include:

- **Spillway:** A structure that is part of a dam or found beside a dam which allows the controlled release of water from a reservoir.
- **Outlet works:** Used to regulate or release water flow from a dam. An outlet works is a device which consists of one or more pipes or tunnels which move water through the dam.
- **Auxiliary spillway:** Also known as an emergency spillway, the auxiliary spillway is a secondary spillway only designed to operate during periods of increased water inflow or high reservoir levels.
- **Structural failure:** Caused by foundation defects such as settlement and slope instability or earthquakes.
- **Mechanical failure:** Dam failure due to malfunctioning gates, conduits, or valves.
- **Hydraulic failure:** Occurs when water overtops the dam, usually caused by inadequate spillway design, blockages in spillways, or dam crest settlement.
- **Levee System:** A flood protection system which consists of a levee or other structures, such as closure or drainage devices.



Normally, water passes through a dam via the main spillway or outlet works. During periods of increased water inflow or high reservoir levels, water should pass through an auxiliary spillway. Dam failure or partial failures are typically caused by structural, mechanical, or hydraulic failures, rather than during extreme storm events.

According to the U.S. Army Corps of Engineers (USACE), dams can be classified by their hazard potential. The three hazard potential classes are:

- **High Hazard Potential:** During the event of a dam failure loss of life is probable, which is the primary attribute for assigning this designation to a dam. Economic losses, environmental damages, and lifeline impacts are also likely, but are not required for this designation.
- **Significant Hazard Potential:** No loss of life is expected during a dam failure, but economic losses, environmental damages, and lifeline impacts are likely.
- **Low Hazard Potential:** No loss of life is expected during a dam failure and no lifeline impacts are expected. Environmental damages and economic losses are expected to be limited to the dam owner's property.

Location

Dam properties of High to Low hazard potential are listed in **Table 4.1.1**. The status of each dam's Emergency Action Plan as of March 2025, is indicated in the table (Source: USACE). Dam locations can be seen in **Figure 4.1.2**.

Table 4.1.1: Dam Properties in Athens County, Ohio

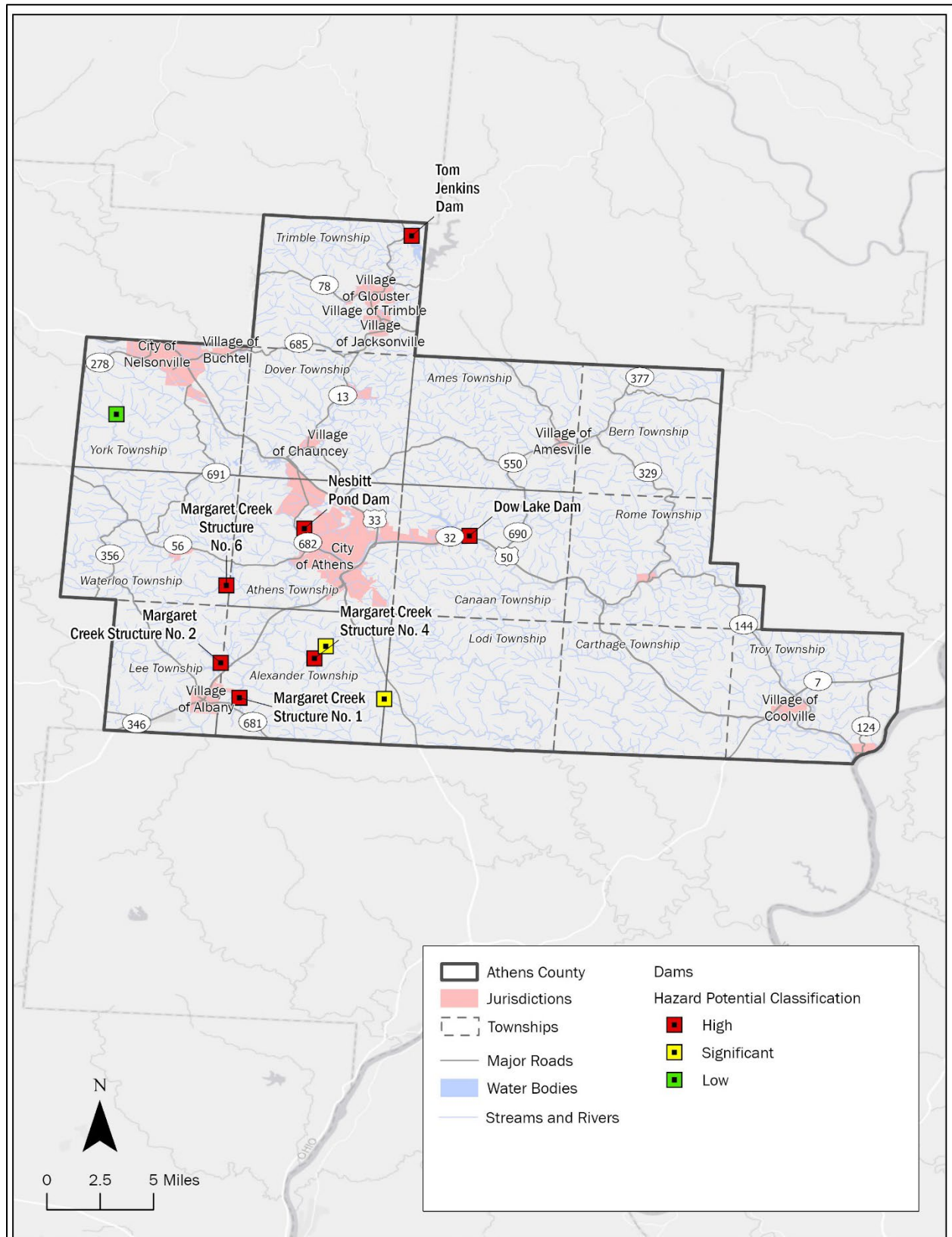
Hazard Potential Classification	Dam Name	Owner Type	Distance to Nearest City (Miles)	Condition Assessment	EAP Prepared
High	Dow Lake Dam	State	6	Fair	Yes
High	Margaret Creek Structure No. 1	Local Government	4.2	Fair	Yes
High	Margaret Creek Structure No. 2	Private	4.2	Fair	No
High	Margaret Creek Structure No. 4	Local Government	2.7	Fair	Yes
High	Margaret Creek Structure No. 6	Local Government	5.6	Poor	Yes
High	Nesbitt Pond Dam	Private	0.8	Satisfactory	No
High	Tom Jenkins Dam	Federal	3	Not Available	Yes



Hazard Potential Classification	Dam Name	Owner Type	Distance to Nearest City (Miles)	Condition Assessment	EAP Prepared
Significant	Margaret Creek Structure No. 5	Local Government	3.4	Satisfactory	Yes
Significant	Rainbow Lake Dam	Private	20	Poor	Yes
Low	Avis Dam	Federal	3	Not Rated	Not Required

Source: U.S. Army Corps of Engineers

Figure 4.1.2: Dam Locations in Athens County, Ohio





Extent

The Hazard Priority dam classification system considers the effects of dam failure or mismanagement during both normal and flood flow conditions, as well as worst-case-scenario situations. Dam classification may decrease with physical modifications to the dam or by eliminating downstream infrastructure. The classifications are justifiable, reasonable, and consistent with the federal guidelines for dam safety. The hazard potential classification may change depending on anticipated consequences of a dam failure, such as new development below a dam or within the dam breach floodplain. Hazard potential classification may decrease with physical modifications to the dam or by eliminating downstream infrastructure.

There are seven High Hazard Potential dams in Athens County, which are listed in **Table 4.1.1** and shown on **Figure 4.1.2**. Sudden failure of High Hazard dams could result in one of the following outcomes, depending on environmental conditions.

- Loss of human life.
- All items listed below for failure of Significant Hazard potential dams.

Sudden failures of Significant Hazard Potential dams could result in at least one of the following conditions:

- Disruption of a public water supply or wastewater treatment facility, release of health hazardous industrial or commercial waste, or other health hazards.
- Flooding of residential, commercial, industrial, or publicly owned structures.
- Flooding of high-value property.
- Damage or disruption to major roads including, but not limited to, interstate and state highways and the only access to residential or other critical areas such as hospitals, nursing homes, or correction facilities.
- Damage or disruption to railroads or public utilities.
- Damage to downstream dams or levees. Damage to dams or levees can include, but is not limited to, overtopping of the structure. At the request of the dam owner, the chief may exempt dams from the criterion of this paragraph if the dam owner owns the potential affected property.
- Damage or disruption to local roads including, but not limited to, roads not otherwise listed as major roads.
- Damage to agricultural crops and livestock.

While there are no Low Hazard Potential Dams in Athens County, sudden failures of Low Hazard dams could result in property losses restricted mainly to the dam and rural lands, and the loss of human life is not probable.

History

Dow Lake Dam near the City of Athens experienced a non-failure incident on January 13, 2012. Emergency repairs were made, and a dam failure was averted. There have been no known additional dam incidents in Athens County.

Probability

Dam failures are unlikely but not impossible. All dams, especially High and Significant hazard potential dams, should have an Emergency Action Plan (EAP) in place. In addition, aging dam infrastructure coupled with climate change could result in more frequent dam failures. The Climate Change section in Future Trends discusses climate change further.



Dam conditions can provide insight into how likely it is that a dam will fail. The U.S. Army Corps of Engineers defines dam conditions as follows:

Satisfactory

No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the minimum applicable state or federal regulatory criteria or tolerable risk guidelines.

- No existing deficiencies or potentially unsafe conditions are recognized, with the exception of minor operational and maintenance items that require attention.
- Safe performance is expected under all loading conditions including the design earthquake and design flood.
- Permanent risk reduction measures (reservoir restrictions, spillway modifications, operating procedures, etc.) have been implemented to eliminate identified deficiencies.

Fair

No existing dam safety deficiencies are recognized for normal operating conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action. Note: Rare or extreme events are defined by the regulatory agency based on their minimum applicable state or federal criteria.

- Lack of maintenance requires attention to prevent developing safety concerns.
- Maintenance conditions may exist that require remedial action greater than routine work and/or secondary studies or investigations.
- Interim or permanent risk reduction measures may be under consideration.

Poor

A dam safety deficiency is recognized for normal operating conditions which may realistically occur. Remedial action is necessary. 'Poor' may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency. Investigations and studies are necessary.

- Dam has multiple deficiencies or a significant deficiency that requires remedial work.
- Lack of maintenance (erosion, sinkholes, settlement, cracking, unwanted vegetation, animal burrows, inoperable outlet gates) has affected the integrity or the operation of the dam under normal operational conditions and requires remedial action to resolve.
- Critical design information is needed to evaluate the potential performance of the dam. For example, a field observation or a review of the dam's performance history has identified a question that can only be answered by review of the design and construction history for the dam. Uncertainty arises when there is no design and/or construction documentation available for review and additional analysis is needed to better understand the risk associated with operation under normal operational conditions.
- Interim or permanent risk reduction measures may be under consideration.

Unsatisfactory

A dam safety deficiency is recognized, that requires immediate or emergency remedial action for problem resolution.

- A critical component of the dam has deteriorated to unacceptable condition or failed.
- A safety inspection indicates major structural distress (excessive uncontrolled seepage, cracks, slides, sinkholes, severe deterioration, etc.), advanced deterioration, or operational deficiencies which could lead to failure of the dam or its appurtenant structures under normal operating conditions.
- Reservoir restrictions or other interim risk reduction measures are required.



- A partial or complete reservoir drawdown may be mandated by the state or federal regulatory agency.

The State of Ohio Dam Safety Program focuses on deficient Class I dams (High Hazard Potential Dams) and dams in poor condition. There are seven High Hazard Potential dams in Athens County, which are listed in **Table 4.1.1** and shown on **Figure 4.1.2**. Sudden failure of High Hazard dams could result in one of the following outcomes, depending on environmental conditions. All High Hazard Potential Dams except for Nesbitt Pond Dam have EAPs in place. Margaret Lake Dam No. 6 has an EAP in place but has a 'poor' condition assessment.

Vulnerability Assessment

Infrastructure Impact

Failures of Significant hazard potential dams could flood roadways, including major routes and local roads. Utility infrastructure (wastewater, drinking water, and commercial and industrial waste lines) may be disrupted or destroyed.

Population Impact

The local population could be impacted by loss of utilities, including the local water supply. Health hazards may also be released into the flood waters during a dam failure which may cause indirect harm to the local population. The local population could be impacted economically as well.

For social vulnerability, dam failure is not in the National Risk Index as it is not a natural disaster. However, natural disasters like flooding can occur because of dam failure. The National Risk Index, "riverine flooding" had a score of 84.0 ("Relatively Moderate"). People that are most vulnerable to flooding are those who live within the 100-year floodplain in structures that are not elevated about the base flood elevation. The index indicates an expected annual loss of \$2.1 million due to flood events with 2.9 events occurring per year.

Property Damage

At least one residential or commercial property is likely to face structural collapse during a high hazard potential dam failure. Dam failure has the potential to damage high value properties. Residential, commercial, industrial, and/or high value properties may be damaged by a significant hazard potential dam failure, as well as publicly owned properties. Properties that are owned by the dam owner may be exempt from the property damage calculation.

Loss of Life

Loss of life because of a high hazard potential dam failure is likely. Loss of life during a Significant or Low hazard potential dam failure is not expected.

Economic Losses

Economic losses can include damage from flooding crops, flooding livestock, damaged goods, and the flooding of vital roadways.

Emergency Action Plans (EAPs) have been completed for all but one High Hazard Potential Dam (**Table 4.1.1**); However, the data is subjected to agreements where it cannot be published publicly. The Ohio Department of Natural Resources (ODNR) holds a record of these EAPs.

Future Trends

Land Use and Development Trends

Development that has occurred in areas that will flood after a dam failure should be prepared for rapid flooding. Land use plans can limit development in these areas to prevent the increase of dam hazard potential. To better understand where development should be limited, dam failure inundation maps should be completed for as many dams as possible. If new residential construction units are within



the inundation/breach areas of dams, it would increase property and population vulnerabilities despite county-wide population loss.

The current total value of taxable real estate in Athens County is \$1,096,916,890. In 2022 and 2023, Athens County authorized 94 new residential units at a total value of \$16,101,000. The population is expected to decrease by 1.4 percent, or 846 people between 2020 and 2030. An additional decrease of 4.7% is expected between 2030 and 2040. Given these estimates, there are no known changes in risks associated with dam failures.

Climate Change

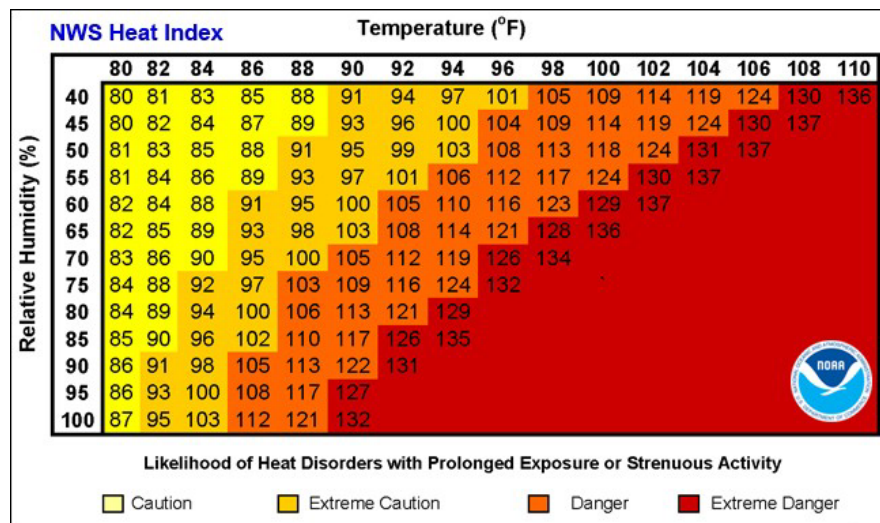
Climate change may increase the frequency and/or the severity of the impacts from a dam failure event. Climate change is having an uneven effect on precipitation (rain and snow) in the U.S. – some areas are experiencing increased precipitation and flooding, while others suffer from drought. If Athens County experiences the effects of climate change related to heavy rainfall, more frequent and severe flooding could occur, which could lead to or be caused by dam failure. Aging dam infrastructure coupled with climate change could result in more frequent dam failures. According to the 2018 National Climate Assessment, dams and levees can fail after moderate or extreme rainfall. If Athens County experiences the effects of climate change related to more frequent droughts, dams and levees can be compromised because of the ground cracking due to drying, reduced soil strength, erosion, and subsidence. As drought or precipitation frequency and intensity increase with climate change, the probability and severity of dam failure may increase as well, especially if this infrastructure is not maintained, upgraded, or, if necessary, redesigned.

4.2 Drought and Extreme Heat

Description

According to the Federal Emergency Management Agency (FEMA), extreme heat is a period of high heat and humidity with temperatures above 90 degrees for at least two to three days. In extreme heat the human body works extra hard to maintain a normal temperature, which can lead to death. Extreme heat is responsible for the highest number of annual deaths among all weather-related hazards. Humid conditions, which add to the discomfort of high temperatures, occur when a high-pressure weather system traps hazy, moist air near the ground. Extreme heat may also contribute to the formation of a drought if moisture and precipitation are lacking. The National Weather Service's Heat Index Chart is provided in **Figure 4.2.1**.

Figure 4.2.1: Heat Index Chart



Source: National Weather Service

Extreme heat events are often accompanied by drought conditions when the events are prolonged. A drought is a shortage in precipitation over an extended period of time. Droughts are common throughout all climatic zones and can range in length from a couple of weeks to multiple years or decades in some areas. The longest moderate drought in Athens County was in 2024 and lasted 27 weeks.

According to the National Oceanic and Atmospheric Administration (NOAA), there are three common types of droughts: Meteorological, Agricultural, and Hydrological. Meteorological drought severity is calculated by the amount of the rainfall deficit (compared to annual averages) and the length of the dry period. Agricultural drought is based on the effects to agriculture by factors such as rainfall and soil water deficits or diminished groundwater/reservoir levels needed for irrigation. Hydrological drought is based on the effects of rainfall shortages on the water supply, such as stream flow, reservoir and lake levels, and groundwater table decline.

Location

Drought is a countywide hazard that can affect all locations and jurisdictions in Athens County. More specifically, these hazards typically occur at a regional scale. Droughts most commonly occur in Ohio from spring through autumn; however, they may occur at any time throughout the year.

Extent

Due to the regional nature of droughts and extreme heat events, effects may be noticed throughout the County in both the urbanized and rural areas. All jurisdictions within the County may be affected in



a single drought event. In Athens County, droughts are often linked to prolonged periods of above average temperatures and little to no precipitation.

Initial effects of drought can be noticed within a short period, as soil may dry out and plants may wither and die. When drought conditions persist over several weeks, months, or years, effects may be more pronounced with reductions in water levels of wells, lakes, reservoirs, streams, and rivers. Water supply issues for agriculture, commercial/industrial activities, and private consumption may arise if drought conditions persist over a long term.

The extent of the drought is determined by the Palmer Drought Severity Index (PDSI), shown below in **Table 4.2.2**. In this way, the Index can be utilized as a tool to help define disaster areas and indicate the availability of irrigation water supplies, reservoir levels, range conditions, amount of stock water, and potential for forest fires. The Palmer Drought Severity Index depicts prolonged (in months or years) abnormal dryness or wetness and is slow to respond, changing little from week to week. It also reflects long-term moisture runoff, recharge, and deep percolation, as well as evapotranspiration.

Table 4.2.2: Palmer Drought Severity Index Classifications and Federal Drought Categories

Palmer Drought Severity Index	Category	Description
-1.0 to -1.9	D0	Abnormally Dry
-2.0 to -2.9	D1	Moderate Drought
-3.0 to -3.9	D2	Severe Drought
-4.0 to -4.9	D3	Extreme Drought
-5.0 or less	D4	Exceptional Drought

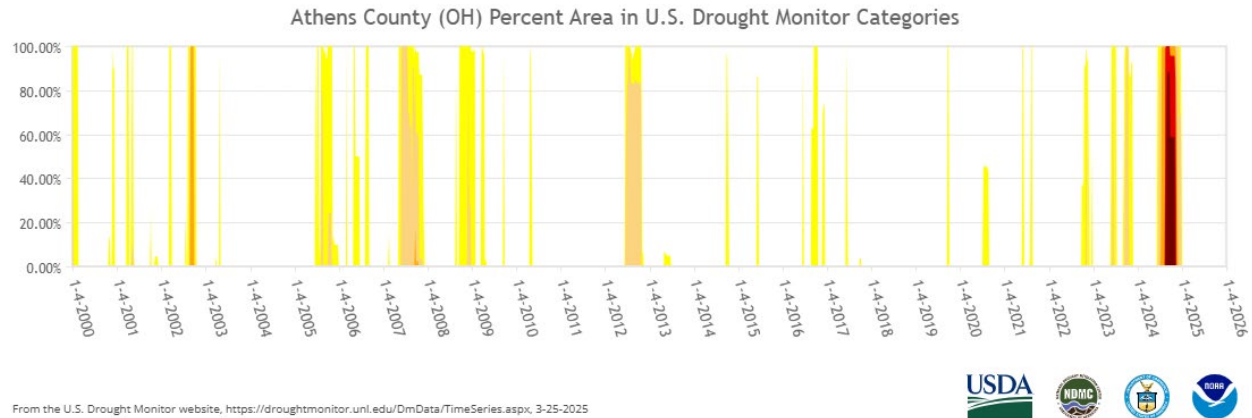
The Palmer Drought Severity Index is a standardized index with values typically falling between -4.0 and +4.0, although extreme conditions can be greater in value (including federal drought categories). Negative values indicate drought conditions while positive values represent wet conditions. Values around zero represent near normal conditions.

Abnormally dry (D0) and moderate drought (D1) conditions occur frequently and typically do not adversely affect agricultural activities unless conditions are sustained in nature. Severe and extreme drought (D2 and D3, respectively) conditions begin to impact agricultural crops, leading to potential economic losses. These more severe events also may impact drinking water resources, especially if the source is a lake or reservoir. Sustained severe droughts may alter the ability of the soil to absorb water, leading to potential flash flooding when rainfall resumes.

History

U.S. Drought Monitor (USDM) describes severe drought as a time when crops suffer, the numbers of wildfires are high and the soil is dry, cracked and pulling away from foundations. In an extreme drought, yields are minimal, livestock are stressed, and lawns go dormant. Data shows that Athens County has spent 264 weeks in abnormally dry conditions, 98 weeks in moderate drought, 27 weeks in severe drought, 13 weeks in extreme drought, and 11 in exceptional drought since 2000. **Figure 4.2.3** depicts the drought monitor history for Athens from 2000 through February 2024. The most extensive periods of moderate drought specific to Athens County are provided in **Table 4.2.4** (Source: U.S. Drought Monitor). There is an average of 38.86 inches of rain each year in Athens County, with 2024 having the lowest amount of 28.11 inches (**Table 4.2.5**).

Figure 4.2.3: Drought in Athens County from 2000 to 2024



D0 = Abnormally Dry, D1 = Moderate Drought, D2 = Severe Drought, D3 = Extreme Drought, D4= Exceptional Drought

Source: U.S. Drought Monitor

Table 4.2.4: Periods of Moderate Drought in Athens County, Ohio, 2000-2024

Start Date	End Date	# of Consecutive Weeks
6/25/2024	12/24/2024	27
9/26/2023	10/24/2023	5
6/13/2023	6/20/2023	2
6/26/2012	10/23/2012	18
12/2/2008	12/23/2008	4
6/5/2007	11/20/2007	25
10/11/2005	11/1/2005	4
8/16/2005	8/23/2005	2
8/27/2002	10/1/2002	6
5/8/2001	5/15/2001	2

Source: U.S. Drought Monitor

**Table 4.2.5: Annual Precipitation – Community Collaborative Rain, Hail, and Snow Network Station OH-AT-1 (measured in inches)**

Year	Precipitation Amount
2019	46.36 in.
2020	41.15 in.
2021	43.55 in.
2022	40.75 in.
2023	33.26 in.
2024	28.11 in.

Source: Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) Data Explorer

Severe, Extreme, and Exceptional Drought:

There have been three severe drought, one extreme, and one exceptional drought events in Athens County since January 1, 2000, according to the U.S. Drought Monitor, whose data dates back to 2000. There has been one additional drought in 1999, according to NOAA. Each drought is described in more detail below.

Severe, Extreme, and Exceptional Drought (D2 – D4), July to November 2024:

In June 2024, 100 percent of Athens County was experiencing abnormally dry conditions and 24 percent of the County was experiencing moderate drought conditions. Minimal rainfall across Athens Ohio exacerbated drought conditions. On July 16th, 2024, 15 percent of Athens County started experiencing moderate drought conditions. The moderate drought conditions spread across Athens County, and within a week approximately 100 percent of the County was experiencing severe drought conditions. The drought conditions worsened and on August 20th, 2024, 99 percent of the County was experiencing extreme drought conditions. The following week, 50 percent of the County was in an exceptional drought. The County stayed in an exceptional drought for a total of 11 weeks, followed by another week in extreme heat, and another two more weeks of severe drought. The drought was the longest Athens has recorded, lasting a total of 29 weeks. The County ended the year 2024 abnormally dry.

Severe Drought (D2), September 2007 and October 2007:

In May 2007, 100 percent of Athens County was experiencing abnormally dry conditions. Minimal rainfall across the County exacerbated drought conditions, and in June, 100 percent of Athens County was in a moderate drought. The moderate drought conditions persisted throughout the summer months, and on September 25th, 2007, 17.63 percent of Athens County was in a severe drought. The following week the County came out of the severe drought and back to a moderate drought. The next week, 2.63 percent of the County went back into a severe drought for another two weeks. The County spent the rest of the year in abnormally dry and moderate drought conditions.

Severe Drought (D2), September 2002:

In August 2002, 100 percent of Athens County was experiencing abnormally dry and moderate drought conditions. On September 3rd, 2002, 100 percent of the County was in severe drought. The whole County remained in a severe drought for four weeks in total. The drought conditions ended on October 22nd, 2002.



Drought (D2 – D3), July 1999 – October 1999:

Very little rain occurred in Spring 1999, creating abnormally dry conditions. These conditions continued throughout the summer with only inches of precipitation occurring. Water restrictions were put in place for most of the state and several other states. Most of the east coast experienced moderate to extreme drought conditions.

Extreme Heat

There have been seven excessive heat events in Athens County since January 1st, 1995. All events are listed individually in **Appendix A**.

Excessive Heat Event, April 16, 2002:

High temperatures in the 90's across Athens County were reported for the last week of June 2012. The County was already experiencing widespread power outages due to the June 29th derecho, when temperatures rose. Temperatures continued to stay elevated through mid-July.

Excessive Heat Event, July 19 through July 31, 1999:

High temperatures in the 90's across Athens County and northern Ohio were recorded for the month of July 1999. Several counties reported temperatures in the 100's.

Probability

Athens County has experienced droughts in the past, and the potential exists for the County to experience droughts in the future. Athens County has had 21 drought events since 2000, including abnormally dry. Athens County has an 88 percent chance of having a drought and/or experiencing abnormally dry conditions each year based on historical data. Athens County had two heat events between 1995 and 2012. Athens County has a low chance of having a heat event each year based on historical data.

Seasons of drought and extreme heat have the potential to occur during any particular year when necessary conditions are met. According to the Midwest Chapter of the Fifth National Climate Assessment, the frequency of major heat waves in the Midwest has increased over the last six decades. In addition, it is predicted that as the climate gets warmer, there will be an associated increase in the number and severity of summer droughts and extreme heat events. The Climate Change section in Future Trends discusses climate change further.

Vulnerability Assessment

Drought projections suggest that some regions of the U.S. will become drier and that most will have more extreme variations in precipitation. Even if current drought patterns remain unchanged, warmer temperatures will amplify drought effects. Drought and warmer temperatures may increase risks of large-scale insect outbreaks and wildfires, in addition to accelerating tree and shrub death and changing habitats and ecosystems in favor of drought-tolerant species. Forest and rangeland managers can mitigate some of these impacts and build resiliency in forests through appropriate management actions.

Infrastructure Impact

Drought does not have a significant impact on infrastructure or structures. The greatest impacts of drought are on agricultural interests, as crops may fail, and livestock may not have sufficient water resources. For social vulnerability, the FEMA National Risk Index indicates that the agricultural (crop only) in Athens County has a score of 35.0 (very low). This risk is only based on agricultural impacts and not population impact. The index indicates an expected annual loss of \$28,000 due to drought events with 0.2 events occurring per year.



Population Impact

Extreme heat can have an impact on the population of the entire County. Groups who live in areas with minimal tree cover or urban areas may experience higher temperatures relative to outlying areas due to the urban heat island effects. Groups that are particularly vulnerable to extreme heat, such as older adults and people with chronic health conditions may experience illness or injury, such as heat cramps, heat exhaustion, and heat stroke.

For social vulnerability, the National Risk Index indicates that the population in Athens County has a score of 68.6 (“relatively low”) for heat wave. The index indicates an expected annual loss of \$225,000 due to heat wave events with 0.9 events occurring per year.

Property Damage

During extreme heat events, utility failure may occur due to overuse of electricity for cooling. Property damage is a possibility due to extreme heat. Vehicles are at risk of breaking down from excessive heat, as heat can reduce battery life and reduce the efficiency of the cooling system resulting in overheated engines. Extreme heat can also cause a home to dry out and prematurely age. Excessive heat in combination with lack of rainfall (drought) can cause soil to shrink and crack, which puts stress on a home’s foundation that can be costly to fix. Drought and warmer temperatures may increase risks of large-scale insect outbreaks and wildfires. Drought and warmer temperatures may also accelerate tree and shrub death, changing habitats and ecosystems in favor of drought-tolerant species.

Expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case Athens County census tracts. Expected losses for buildings, population (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract from heat wave are recorded in **Table 4.2.6** below. The tables list the 15 census tracts in Athens County from the highest total EAL to the lowest. The EAL Total column combines the buildings, population, and agricultural losses for each census tract.

Table 4.2.6: Structure and Population Vulnerability from Heat Wave

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$29	\$8,261	\$0	\$8,290
39009972900	\$15	\$7,705	\$8	\$7,729
39009973800	\$11	\$6,570	\$89	\$6,670
39009973200	\$11	\$6,111	\$7	\$6,129
39009973101	\$8	\$5,758	\$0	\$5,765
39009972600	\$10	\$5,391	\$4	\$5,404
39009973700	\$7	\$5,291	\$65	\$5,362
39009973300	\$9	\$5,237	\$4	\$5,251
39009973600	\$10	\$5,063	\$55	\$5,127
39009972800	\$13	\$5,049	\$18	\$5,080
39009973000	\$8	\$4,945	\$0	\$4,953
39009972700	\$7	\$4,846	\$6	\$4,860
39009973500	\$6	\$4,468	\$42	\$4,515



Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973902	\$6	\$4,330	\$0	\$4,336
39009973400	\$15	\$4,207	\$14	\$4,237
Grand Total	\$164	\$83,232	\$314	\$83,709

Source: FEMA National Risk Index

Loss of Life

Loss of life is possible during drought and extreme heat events, especially for young children, the elderly, and individuals with respiratory conditions.

Economic Losses

Economic losses are a threat from extreme heat and droughts in Athens County. Crops and livestock may be compromised during prolonged extreme heat events. Human productivity can also be affected when working conditions become too hot. According to the 2022 Census of Agriculture developed by the U.S. Department of Agriculture (USDA), top crop items based on acreage for Athens County include soybeans for beans, corn for grain, wheat for grain, forage-land used for all hay and haylage, and corn for silage/greenchop (animal feed). Based on data from the U.S. Department of Agriculture, Athens County's crop yields may have been impacted from previous drought events. Acreage farmed for Corn (Grain and Silage/Greenchop), Hay & Haylage, and Soybeans increased, while acreage for wheat decreased between 2017 and 2022. Yield per acre decreased in 2022 versus 2017 for all crops except Hay & Haylage and Soybeans (**Table 4.2.7**). Corn for Silage/Greenchop had the largest yield decrease per acre (-3.4 tons/acre or -18 percent). Agricultural land use can be seen on the land use map in Chapter 1 (**Figure 1.2.1**).

Table 4.2.7: Athens County Crop Yields 2017 - 2022

Commodity	2017		2022	
	Acres	Crop Yield	Acres	Crop Yield
Corn, Grain	46,351	8,312,395 bushels	58,401	10,115,271 bushels
Hay & Haylage	15,143	17,929 tons	15,659	35,316 tons
Soybeans	63,869	3,264,981 bushels	73,605	3,865,585 bushels
Wheat	8,163	619,940 bushels	6,721	456,316 bushels
Corn, Silage/Greenchop	812	17,929 tons	955	17,832 tons

Source: United States Department of Agriculture Census

Future Trends

Land Use and Development Trends

Drought and extreme heat are most likely to impact agriculture land uses and land uses that house or serve vulnerable populations, such as schools, daycares, hospitals, and nursing homes. Less people can mean generally less people vulnerable to extreme heat/drought events. However, the increase of people aged 65+ from 2017 (11,882) to 2023 (13,233) could mean more vulnerability to Extreme Heat for that population group. Increase of agricultural land use, crop yields, and livestock cash receipts can mean more vulnerability to drought in those areas.



Climate Change

Climate change may increase the frequency and/or the severity of the impacts from drought and extreme heat events. As the climate gets warmer, there will be an associated increase in the number and severity of droughts and extreme heat events. Warmer global temperatures may be associated with a prolonged growing season, but this trend may also increase the risk of crop stress due to excessive heat and crop damage due to increased pests and disease. The longer growing season may help some crops but crops like corn and soybean will be negatively affected by the severe heat in the summer, which will decrease these crops' yields. Additionally, increased frequency and severity may negatively impact infrastructure. For example, dams and levees may be compromised after a prolonged drought if drying, reduction of soil strength, erosion, subsidence, or ground cracking occurs. Climate change is expected to increase the occurrence and duration of heat waves in the coming decades.



4.3 Earthquakes

Description

Earthquakes are sudden and rapid movements of the Earth's crust and are caused by the abrupt shifting of rocks deep underneath the earth's surface. These movements vary in length and may last from a few seconds to several minutes.

The seismicity, or seismic activity, of an area refers to the frequency, type, and size of earthquakes experienced over time. Earthquakes are measured using observations from seismometers. The Moment Magnitude Scale (MMS), which was developed in the 1970's, is the most common scale on which earthquakes larger than approximately 5.0 in magnitude are reported for the entire world. Earthquakes smaller than magnitude 5.0, which are more numerous, are reported by national seismological observatories and measured most on the local magnitude scale – also referred to as the Richter Scale. These two scales are numerically similar in their range of validity. Earthquakes of magnitude 3.0 or lower are often almost imperceptible or weak, while earthquakes of magnitude 7.0 or greater can potentially cause serious damage over larger areas.

Damage from an earthquake also depends on the earthquake's depth in the Earth's crust. The shallower an earthquake's epicenter, the more damage to structures it will cause. Alternatively, an earthquake can also be measured by its intensity. The Modified Mercalli Intensity Scale (MMI) ranges in value I to XII, in roman numerals (**Table 4.3.1**).

Earthquakes can happen anywhere without warning; they are low-probability, high-consequence events. Most major earthquakes in the U.S. have occurred in California as well as in Alaska, Hawaii, Oregon, Puerto Rico, Washington, and the entire Mississippi River Valley. There have been recorded earthquakes throughout the U.S., and the Ohio River Valley has experienced earthquakes exceeding the 3.0 magnitude within the last 25 years.

Location

Earthquakes are countywide hazards and can affect all areas and jurisdictions within Athens County. According to the Ohio Department of Natural Resources (ODNR), Ohio is located on the periphery of the New Madrid Seismic Zone, an area in and around Missouri that was the site of the largest earthquake sequence to occur in the country in the 1800's. Additionally, seismic activity is concentrated in the western Ohio region known as the *western Ohio seismic zone* (also referred to as the *Fort Wayne (Anna) seismogenic zone*), where more than 40 earthquakes have been felt since 1875.

The Starr Fault System runs east-west and just over the border into central-northwest Athens County from its greatest extent in lower Hocking and upper Vinton Counties. The fault is a Precambrian fault and is known, meaning it is verified (**Figure 4.3.2**). Earthquakes as this fault range from less than 2 to 3.8.

Extent

Earthquakes pose a risk to life and property depending on severity. To monitor earthquakes, the State of Ohio and the ODNR Division of Geological Survey coordinates a 29-station network (**Figure 4.3.3**) of seismograph stations throughout the state to continuously record earthquake activity. The Ohio Seismic Network (OhioSeis) stations are distributed across the state but are concentrated in the most seismically active areas or in areas that provide optimal conditions for detecting earthquakes. While the seismic network cannot predict earthquakes or provide an alert prior to an event, it can provide insight into earthquake risks in the state so that intelligent decisions about building and facility design and construction, insurance coverage, and other planning decisions can be made by individuals, business and industry, and governmental agencies.



According to the ODNR, there are two Ohio Seismic Network monitoring stations in Athens County and one in the neighboring, Meigs County.

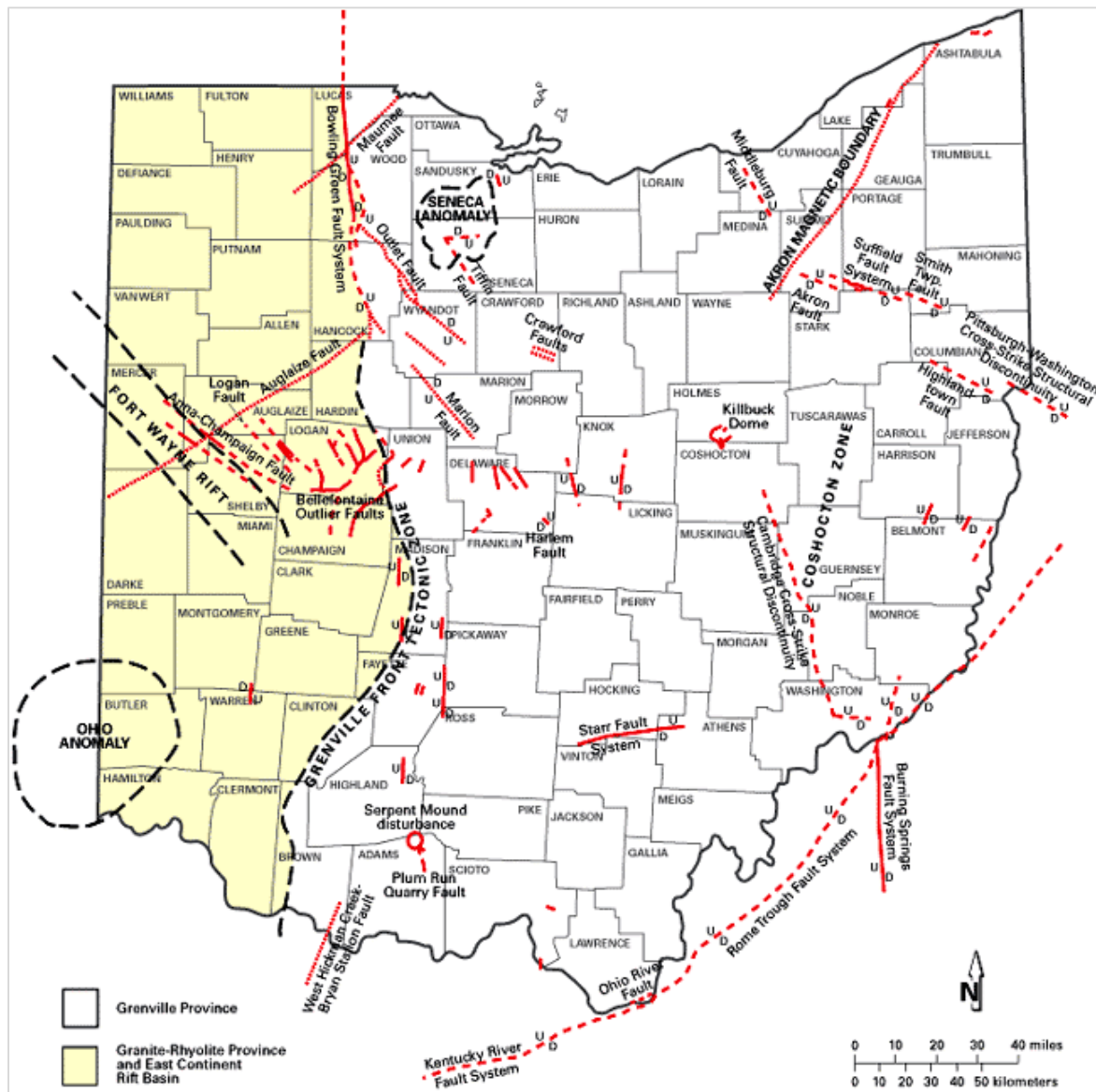
Earthquakes can yield a variety of different outcomes. With the ground shaking associated with earthquake events, buildings have a high potential to be impacted. If soil liquefaction, or the mixing of fine sediment and soil with groundwater occurs, buildings can sink into the ground. Earthquakes also have the potential to rupture dams or levees along a river, resulting in flooding and even tsunamis (see Dam Failure section). Earthquakes can cause landslides or avalanches in high-risk areas and can cause mines to subside. Furthermore, earthquakes that break gas and power lines can result in fires.

Table 4.3.1: Modified Mercalli Intensity Scale

Modified Mercalli Intensity Scale		Magnitude
I	Detected only by sensitive instruments.	1.5
II	Felt by few people at rest, especially on upper floors; delicately suspended objects may swing.	2
III	Felt noticeably indoors, but not always recognized as earthquake; standing autos rock slightly, vibrations like passing truck.	2.5
IV	Felt indoors by many, outdoors by few, at night some awaken; dishes, windows, doors disturbed; standing autos rock noticeably.	3
V	Felt by most people; some breakage of dishes, windows, and plaster; disturbance of tall objects.	3.5
VI	Felt by all, many frightened and run outdoors, falling plaster and chimneys, damage small.	4
VII	Everybody runs outdoors; damage to buildings varies depending on quality of construction; noticed by drivers of autos.	4.5
VIII	Panel walls thrown out of frames; walls, monuments, chimneys fall; sand and mud ejected; drivers of autos disturbed.	5
IX	Buildings shifted off foundations, cracked, thrown out of plumb; ground cracked; underground pipes broken.	5.5
X	Most masonry and frame structures destroyed; ground cracked, rails bent, landslides.	6
XI	Few structures remain standing; bridges destroyed, fissures in ground, pipes broken, landslides, rails bent.	6.5
XII	Total damage; waves seen on ground surface, lines of sight and level distorted, objects thrown up into air.	7 7.5 8

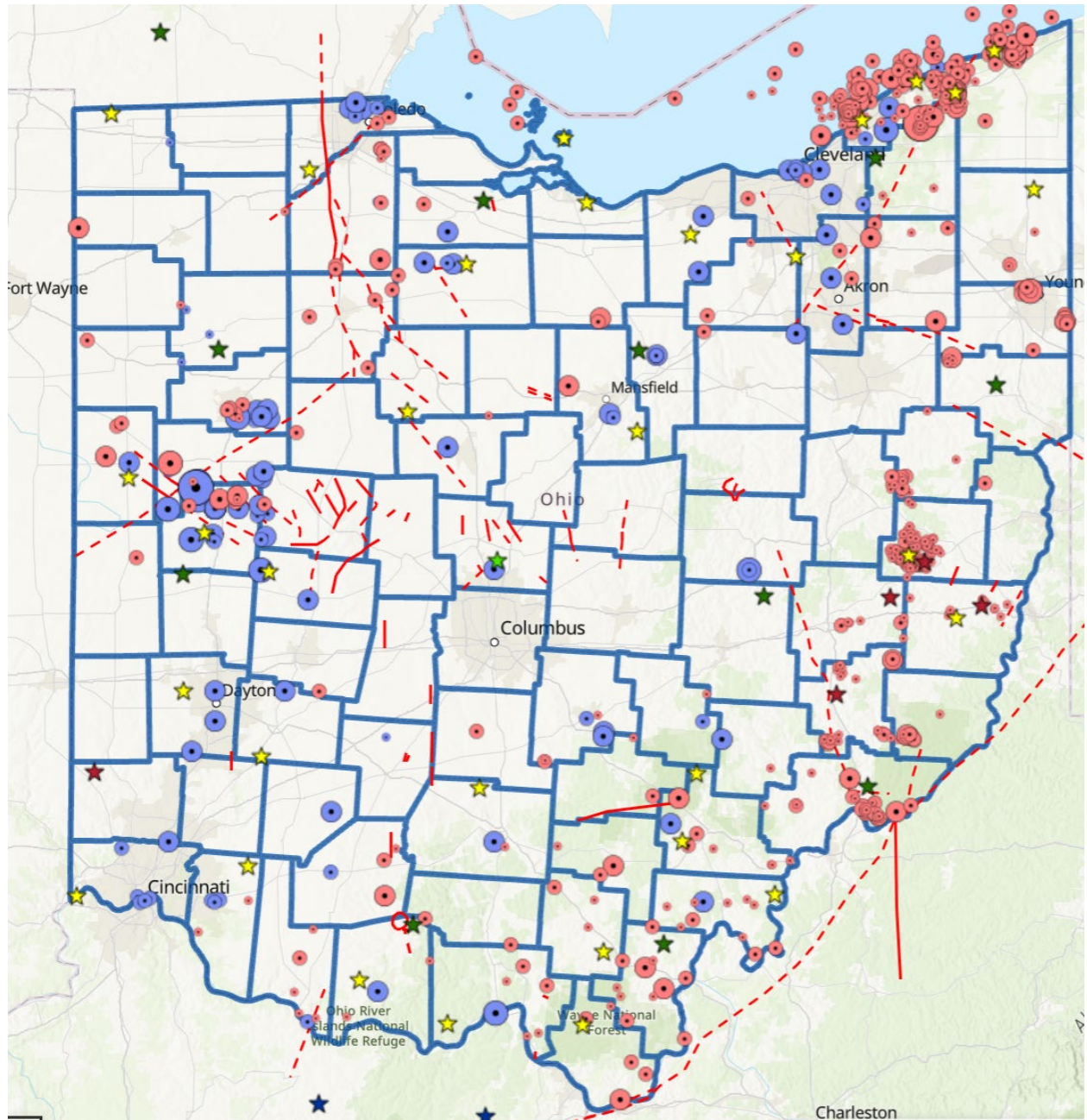
Source: ODNR

Figure 4.3.2: Ohio Faults and Seismic Zones

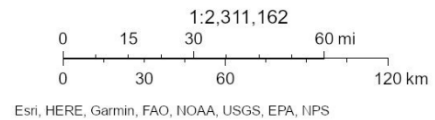
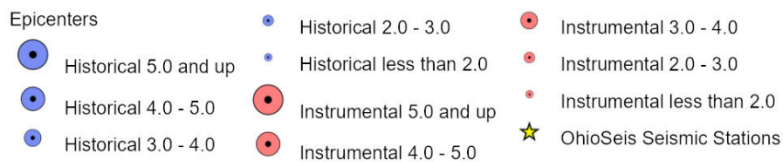


Source: ODNR

Figure 4.3.3: Earthquake Epicenters and Seismic Monitoring Stations in Ohio



Source: ODNR



History

More than 300 earthquakes of 2.0 magnitude or greater with epicenters in Ohio have occurred since 1776. Most of these events have been small, in the 2.0 to 3.0 magnitude range, while 15 earthquakes have caused minor-to-moderate damage and a few minor injuries. No deaths are recorded in Ohio



from earthquakes. According to ODNR, Athens County has had seven recorded earthquakes between 1886 and 2024, with magnitudes between 0.7 and 3.8. The 3.8 magnitude earthquake occurred in 1886 and the next highest magnitude quake at 3.5 occurred in 2013. All other earthquakes have had magnitudes of 2.0 or less. There is limited data available on any property damage.

Figure 4.3.3, above, displays epicenters of all historical earthquakes with a magnitude greater than 1.0. Locations and magnitudes of non-instrumental earthquakes correspond to felt area or maximum epicentral Modified Mercalli Intensities and may be in error by a considerable distance.

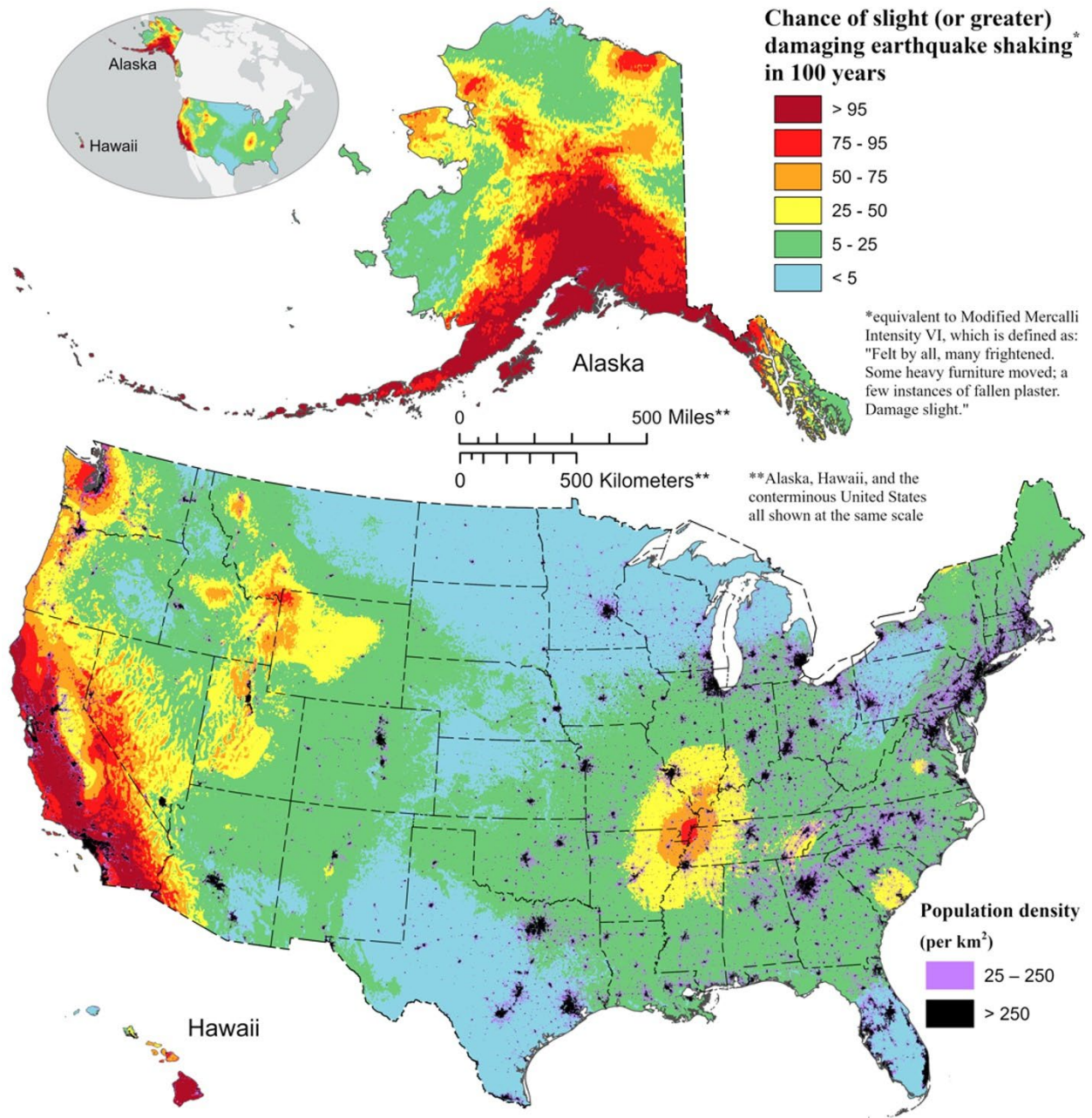
Probability

The USGS has both long-term and short-term probabilistic seismic hazard forecasts. In the 2024 one-hundred-year probabilistic seismic hazard forecast, the United States Geological Survey estimated that there is a 5 to 25 percent chance of potentially minor-damage ground shaking for Athens County (**Figure 4.3.4**).

The USGS also prepared national seismic hazard maps (NSHMP) for the United States. These time-independent maps are shown for two percent and ten percent probability of earthquake ground-shaking exceedance levels at specified probabilities over a 50-year period at several hundred thousand sites across the United States. The map (**Figure 4.3.5**) identifies that Athens County has a four to eight percent peak ground acceleration for two percent probability of exceedance in 50 years.

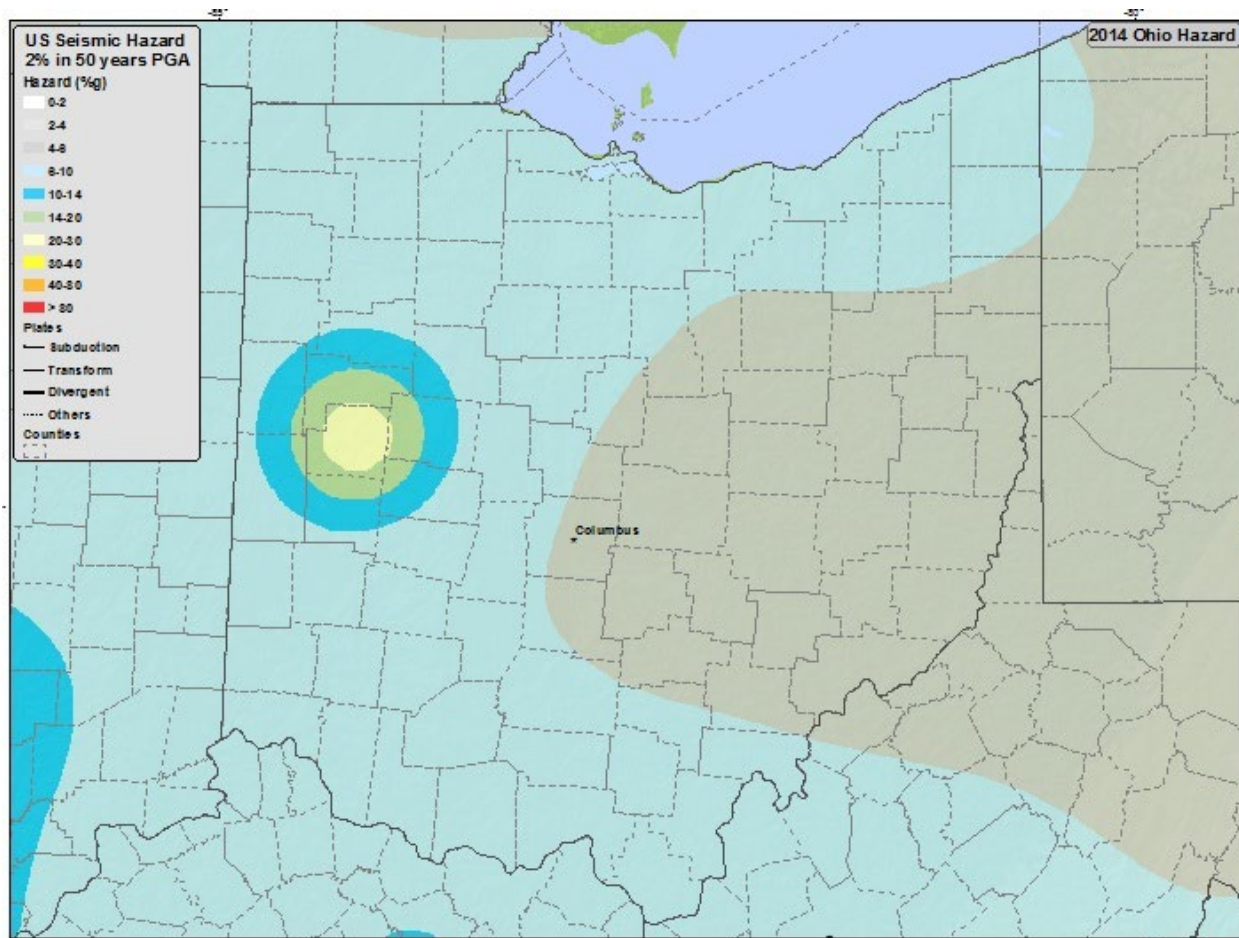
Furthermore, the ODNR indicates that the brief historic record of Ohio earthquakes suggests a risk of moderately damaging earthquakes in the western, northeastern, and southeastern parts of the State.

Figure 4.3.4: Earthquake Shaking and Seismic Design Categories



Source: USGS

Figure 4.3.5: 2014 Seismic Hazard Map of the State of Ohio



Source: USGS

Vulnerability Assessment

Infrastructure Impact

There have been two earthquakes above a 3.0 magnitude and five at 2.0 or less in Athens County since 1886. The largest earthquakes occurred on May 3, 1886, at 3.8, and on November 20, 2013, at 3.5. Magnitudes under three are not generally noticed by people and cause little, if any, damage. Buildings, roadways, gas and power lines have the potential to be affected. Since the probability of an earthquake occurring in Athens County is less than one percent, there is a low risk of impact to infrastructure as a result.

Population Impact

There is a relatively low risk of earthquakes occurring in Athens County. Accordingly, there is a low risk of impact to the population. If an earthquake occurs within Athens, the population could be impacted by loss of homes, loss of utilities, and a potential reduction in air quality.

According to the National Risk Index calculated by FEMA, Athens County's risk was scored at 51.06 ("very low") to earthquakes, as compared to all other U.S. counties, due to its very low expected annual loss, relatively moderate social vulnerability, and relatively moderate community resilience scores. Earthquakes are unlikely to occur in Athens County; therefore, the population is unlikely to be affected by earthquakes. Socially vulnerable populations may be more affected by earthquakes if they live in older housing units or apartment complexes that do not have adequate earthquake-resilient



infrastructure. The index indicates an expected annual loss of \$140,288 due to earthquakes with a less than 0.019 percent chance of an event occurring per year.

Property Damage

With any earthquake event, there is potential for property damage to occur, as ground shaking can lead to damaged buildings. Due to the non-site-specific nature of this hazard, **Table 4.3.6** lists the census tracts in Athens County, ranked with the highest vulnerability to the lowest vulnerability.

Loss of Life

Athens County has no recorded earthquake events that have resulted in loss of life; however, if an earthquake occurs, there is potential for loss of life. If there are more people and structures in an earthquake prone location, there is likely to be more of an impact. Loss of life can be mitigated by educating the public on proper protection in the event of an earthquake. For example, the USGS resources on preparing for an Earthquake hazard ([USGS Resources for Earthquake Preparedness](#)) as well as the Ready Campaign ([Ready.gov](#)) are national public service campaigns designed to educate and empower the American people to prepare for, respond to, and mitigate disasters.

Economic Losses

Earthquakes have the potential to damage infrastructure, resulting in the economic burden of clean up and repairs. Expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case Athens County census tracts. Expected losses for buildings, population (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract from earthquakes are recorded in **Table 4.3.6** below. The tables list the 15 census tracts in Athens County from the highest total EAL to the lowest. The EAL Total column combines the buildings, population, and agricultural losses for each census tract. Compared with other hazards, earthquakes are relatively unlikely to occur in Athens County, meaning there is a low risk of economic loss as a result of an earthquake.

Table 4.3.6: Structure and Population Vulnerability from Earthquake

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973400	\$16,148	\$4,401	\$0	\$20,549
39009973901	\$15,611	\$4,363	\$0	\$19,974
39009973800	\$14,105	\$3,931	\$0	\$18,036
39009972800	\$10,700	\$3,077	\$0	\$13,778
39009972900	\$9,640	\$2,433	\$0	\$12,072
39009973200	\$9,297	\$2,554	\$0	\$11,851
39009973700	\$4,366	\$1,678	\$0	\$6,044
39009973600	\$4,688	\$1,279	\$0	\$5,967
39009972600	\$4,524	\$1,383	\$0	\$5,907
39009973300	\$4,580	\$1,059	\$0	\$5,639
39009973101	\$3,914	\$1,173	\$0	\$5,086
39009972700	\$3,706	\$1,281	\$0	\$4,988
39009973500	\$2,745	\$1,190	\$0	\$3,935



Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973000	\$2,563	\$707	\$0	\$3,270
39009973902	\$2,368	\$824	\$0	\$3,192
Grand Total	\$108,956	\$31,331	\$0	\$140,288

Source: FEMA National Risk Index

Future Trends

Land Use and Development Trends

Because the incidence and likelihood of earthquakes is low in Athens County, all communities have a low risk. By planning for and managing land use to accomplish social, ecological, and economic sustainability, communities can reduce the negative impacts caused by earthquakes. This can be accomplished through comprehensive land-use plans and supportive federal and state policies. As such, enforcement of stricter building codes that ensure that all new developments are built up to code can reduce risk. Infrastructure (constructed facilities and lifelines) should be designed and constructed to resist earthquake shaking following the current state-of-the-art engineering and technology practices.

In 2023, Athens County authorized 8 new residential units at a total value of \$1,345,360. Though there are more buildings slated for construction, and Athens County's population increased by 275 (less than one percent) from 2020 to 2023, the population is projected to decrease in the future. By 2030 Athens' population is expected to decrease from 62,706 in 2023 to 61,585 (two percent loss), and 58,717 (six percent loss) by 2040. More buildings but less people may potentially mean more property loss but less population vulnerability. However, with state-of-the-art engineering there is very little potential damage. Given these estimates, there are no known changes in risks associated with earthquakes in Athens County.

Climate Change

Climate change has no known effect on the probability or extent of earthquakes.

4.4 Flood

Description

FEMA describes a flood as “a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters [and] the unusual and rapid accumulation or runoff of surface waters from any source.” Floods are typically riverine, coastal, or shallow. Flash floods are floods that occur quickly, even occurring without visible signs of precipitation.

Urban flooding is a type of flood that can occur in areas of development that have a high level of impervious surfaces such as concrete. The level of development and the level of stormwater management practices impact the severity of urban flooding.



Common flood-related terms include:

- 100-Year Flood:** A flood that has a one percent chance of occurring each year. The 100-year floodplain can be seen in **Figure 4.4.1: Flood Hazard Map**. The elevation of the water from the 100-year flood is called the Base Flood. Mitigation strategies should be based on the base flood elevation.
- Floodplain:** An area that has the potential to flood from any source.
- Floodway:** Sometimes referred to as a regulatory floodway. FEMA defines a floodway as “the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the Base Flood without cumulatively increasing the water surface elevation more than a designated height.”
- Flash flood:** Flash floods are typically caused by heavy rainfall over a short period of time. These floods are particularly dangerous because they can occur in minutes and can sometimes occur even without rainfall such as when an ice jam breaks or dissolves. Areas impacted by wildfires are particularly susceptible to flash floods. Flash floods can occur just about anywhere with enough rainfall and are not restricted to the 100-year floodplain. Development/restriction to drainage or increased impervious surfaces can contribute to flash flood frequency.

Athens County Flood Water in Spring 2025 (File Photo)

Location

Flooding can occur throughout Athens County. Flash flooding is more likely to occur in developed areas or along lakes and rivers. **Figure 4.4.1** shows the location of the 100-year floodplain. Floods can and do occur outside the FEMA defined 100-year flood zone. Sometimes very small watersheds are not included in the FEMA analyses, but floods can occur in these smaller watersheds as well.

Extent

Athens County currently has 42 flood insurance maps (see **Appendix F**). The most recent update is from September 2024.

Athens County and seven communities within the County participate in the National Flood Insurance Program (NFIP) (**Table 4.4.2**). The Village of Chauncey and the Village of Coolville are not currently participating in the NFIP. The Village of Chauncey is working on their participation and plans on joining the NFIP.

Figure 4.4.1: Flood Hazard Map of Athens County, Ohio

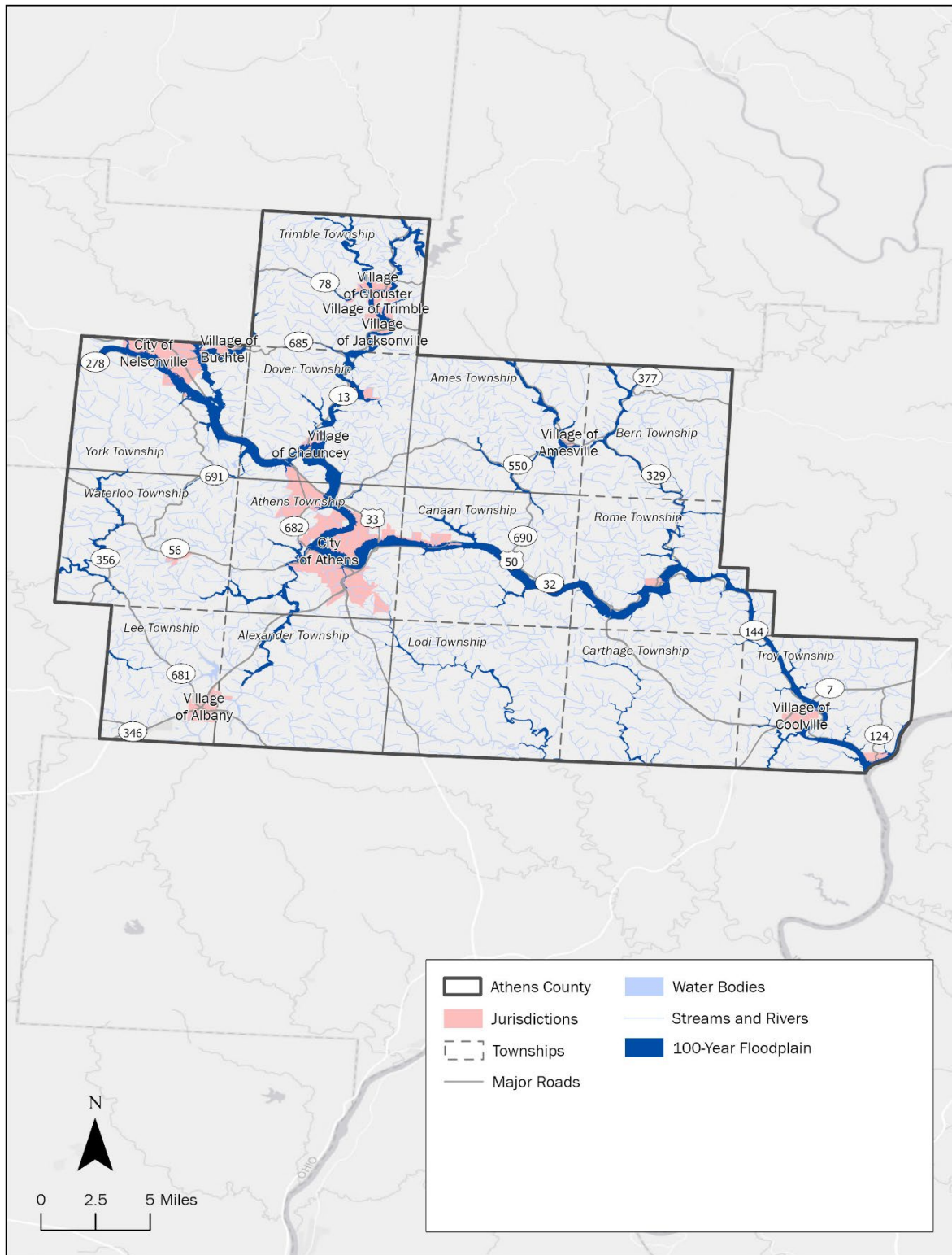



Table 4.4.2: National Flood Insurance Program Participation for Athens County, Ohio

Community Name	NFIP Coordinator	Init FHBM Identified	Init FIRM Identified	Effective Map Date	Reg-Emer Date	Participating in NFIP
Athens County*	Connor LaVelle	12/9/77	05/02/91	09/26/24	10/31/91	Yes
City of Athens	David Riggs	05/31/74	03/28/80	09/26/24	03/28/80	Yes
City of Nelsonville	Chief Devon Tolliver	05/10/74	01/17/86	09/26/24	01/17/86	Yes
Village of Amesville	Gary Goosman	07/25/75	09/29/89	12/18/09	09/29/89	Yes
Village of Buchtel	Tom Taggart	02/07/75	03/01/95	09/26/24(M)	03/01/95	Yes
Village of Chauncey	Drew Daniels	06/21/74	01/17/86	09/26/24	11/06/09(S)	No
Village of Coolville	Neil Cowen	11/3/78	12/18/09	12/18/09	11/3/79	No
Village of Glouster	Nathan Simons	05/17/74	07/19/01	12/18/09	07/19/01	Yes
Village of Jacksonville	Sam Smathers	05/17/74	06/03/86	12/18/09	06/03/86	Yes
Village of Trimble	Douglas Davis	10/1/76	11/1/95	12/18/09	11/1/95	Yes

Source: NFIP Community Status Book & Athens County

Repetitive Loss

There are 45 repetitive loss properties and six severe repetitive loss properties in Athens County, Ohio, detailed in **Table 4.4.3**. FEMA defines a repetitive loss property as an insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period since 1978. FEMA defines a severe repetitive loss property as a single family property that is covered under flood insurance by the NFIP and has incurred flood-related damage for which four or more separate claims payments have been paid under flood insurance coverage, with the amount of each claim payment exceeding \$5,000 and with cumulative amount of such claims payments exceeding \$20,000; or for which at least two separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Table 4.4.3: Repetitive Loss Properties in Athens County, Ohio

Jurisdiction Occupancy	Total RL/SRL Structures	RL Structures	SRL Structures	Total Losses	Total Paid
Athens County (Unincorporated) Other – Non-Residential	2	1	1	27	\$298,297
Athens County (Unincorporated) Single Family Residential	14	11	3	40	\$1,119,753
City of Nelsonville Single Family Residential	2	2	0	6	\$21,674
Village of Amesville Other – Non-Residential	2	2	0	4	\$66,100

Jurisdiction Occupancy	Total RL/SRL Structures	RL Structures	SRL Structures	Total Losses	Total Paid
Village of Buchtel Single Family Residential	1	1	0	2	\$8,813
Village of Chauncey Single Family Residential	9	8	1	27	\$223,148
Village of Glouster Other – Non- Residential	2	2	0	4	\$57,763
Village of Glouster Single Family Residential	5	4	1	11	\$108,662
Village of Jacksonville Single Family Residential	2	2	0	4	\$61,910
Village of Trimble Other – Non- Residential	4	4	0	9	\$196,899
Village of Trimble Single Family Residential	8	8	0	20	\$237,231
Total	51	45	6	154	\$2,400,250

Source: Ohio EMA

History

There have been 101 floods or flash floods in Athens County between January 1995 and December 2023. These events have caused \$17,696,000 in property damage and \$0 in crop damage. One death was reported due to floods since 1995 when, on May 4th, 2012, an elderly woman was swept away in rising flood waters near the Village of Amesville. There have been nine major disaster declarations related to flooding in Athens County since 1968. There have been no disaster declarations since the last hazard mitigation plan. The nine major disaster declarations, as well as floods that caused the greatest amount of damage, including the abovementioned casualty, are described below. **Figure 4.4.4** is from the Emergency declaration from the floods on March 17, 1997.

Figure 4.4.4: March 17, 1997, flooding of East State Street, Athens, Ohio



Source: (Lloyd E. Moore Photograph Collection, Documentary Photography Archive, Mahn Center for Archives & Special Collections, Ohio University Libraries)



Major Disaster Declaration for Severe Storms, Flooding, and Landslides, February 5 – 13, 2019:

From February 5 through February 13, 2019, several waves of low pressure moved along a stalled front, bringing a prolonged period of heavy rain to the region. An isolated tornado also occurred as a convective segment moved through. West Junction Road near Salt Creek flooded, and trees and mud were washed onto a section of US-23, forcing the closure of one lane. Due to high water, several roads were closed, and many remained inaccessible because of the flooding. A Major Disaster Declaration (DR-4424-OH) was issued on April 8, 2019, for 21 counties including Athens. Those same 21 counties were offered public assistance totaling \$55,978,275.77. Athens County reported \$8,000 in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Storms, Flooding, and Landslides, February 14 – 25, 2018:

From February 5th through February 17, 2018, several waves of low pressure moved along a stalled front, bringing a prolonged period of heavy rain to the region. Athens County reported 1 to 1.3 inches of rain in a 24-hour period, causing minor flooding. A Major Disaster Declaration (DR-4424-OH) was issued on April 17, 2018, for 22 counties including Athens. Those same 22 counties were offered public assistance totaling \$66,595,216.18. Athens County reported \$2,000 in property damage. No deaths or injuries were reported.

Flash Flood in Athens County, May 4, 2012:

A front moved over southeast Ohio on May 4th, 2012, bringing clusters of showers and thunderstorms. Rain amounts were reported at 1.5 to 2 inches in just two hours. Several streams started to flood roads, and several evacuations were conducted due to the flood. An elderly couple was driving along Linscott Run when a small tributary started to flood. The couple got out of their car to find higher ground, but the woman slipped while using her walker and was swept away. Firefighters found her body around dawn approximately one-half mile downstream. Several other people were rescued from high waters. Athens County reported \$250,000 in property damage.

Major Disaster Declaration for Severe Storms and Flooding, April 4 – May 15, 2011:

On April 19th a strong front moved across southern Ohio near the Ohio River. The front brought rounds of showers and thunderstorms with 2.25 inches of rain. Several streams and rivers left their banks in the area, causing flooding on many roads in Athens County. A Major Disaster Declaration (DR-4002-OH) was issued on July 13th, 2011, for 21 counties including Athens. Those same 21 counties were offered public assistance totaling \$32,964,612.36. Athens County reported \$50,000 in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Storms, Flooding, and Landslides, December 22, 2004 – February 1, 2005:

In January 2005, Athens County experienced two flooding events with several straight days of heavy rainfall each. On January 5th, 2005, after three days of continuous rainfall, the City of Nelsonville reported an additional 2.25 inches of rainfall. Several streams flooded shutting down roads. On January 11th, 2005, Athens County and surrounding counties experienced rainfall for five days, resulting in 4.5 inches of rainfall in the City of Nelsonville and 3.4 inches in the City of Athens. The Ohio River and several other streams flooded. A total of 73 homes in Athens County reported minor flood damage. Major Disaster Declaration (DR-1580-OH) was issued on February 12th, 2005, for 22 counties including Athens. Those same 22 counties were offered public assistance totaling \$66,595,216.18. Athens County reported \$4.7 million in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Storms and Flooding, August 27 – September 27, 2004:

In September 2004, the remnants of Hurricane Frances caused a 30-hour rain event in eastern Ohio. The area saw approximately four to seven inches of rain. Because the ground was dry prior to this event, most of the flood waters stayed to roads and low-lying areas. After the storm, the remnants of



Hurricane Ivan hit southern and southeast Ohio. The storm brought a rain event lasting another 30 hours, bringing up to 6.5 inches of rain. The ground was still saturated from the previous storm, causing extensive flooding in Athens County and surrounding areas. A total of 56 homes had major flood damage in Athens County. A Major Disaster Declaration (DR-1556-OH) was issued on September 19, 2004, for 21 counties including Athens. Of those counties, three were offered individual assistance only and 17 were offered individual and public assistance. Athens County received both individual and public assistance. They reported \$3.1 million in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Storms and Flooding, May 18 – June 21, 2004:

On May 20th, a frontal zone brought heavy showers and thunderstorms. Rainfall of three to four inches was reported, and Sunday Creek flooded the Villages of Glouster, Trimble, and Jacksonville. Several people had to be rescued by boats as their homes were flooded. The front brought rounds of showers and thunderstorms with 2.25 inches of rain. Several streams and rivers left their banks in the area, and many roads were flooded in Athens County. The flood caused damage to 130 homes – 85 with minor damage, 42 with major damage, and three homes were destroyed. Local businesses also reported damage – 18 with minor damage and two with major damage. A Major Disaster Declaration (DR-1519-OH) was issued on June 3rd, 2004, for 23 counties including Athens. Of those counties, 23 were offered individual assistance and 17 were offered public assistance. Athens County received both individual and public assistance. The County reported \$2.75 million in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Storms, Flooding, and Landslides, January 3 – 30, 2004:

On January 7th, 2004, a front bringing heavy rainfall affected several counties in Ohio, with Athens County reporting 2.6 inches of rain. Because the ground was saturated, the water had nowhere to go. The rivers flooded and caused about a dozen road slippages and a dozen road washouts. Major Disaster Declaration (DR-1507-OH) was issued on February 13th, 2004, for 14 counties including Athens. Two counties received individual assistance, six were offered both individual and public assistance, and six were offered only public assistance. Athens County was offered public assistance. Athens County reported \$300,000 in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Storms, Flooding, and Tornadoes, June 24 – July 5, 1998:

After two nights of thunderstorms, several Ohio counties experienced flooding, with Athens County reporting about five inches of rainfall. The ground was saturated, causing a major flood. Federal Creek was at its highest point on record. The Village of Amesville reported 13 feet of water in its fire station. About 200 homes were damaged during the flood and the Orange Christian Church was swept a half mile downstream. Major Disaster Declaration (DR-1227-OH) was issued on June 30th, 1998, for 22 counties including Athens. Two counties received individual assistance and 20 were offered both individual and public assistance. Athens County was offered both individual and public assistance. The County reported \$4.0 million in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Storms and Flooding, February 28 – March 17, 1997:

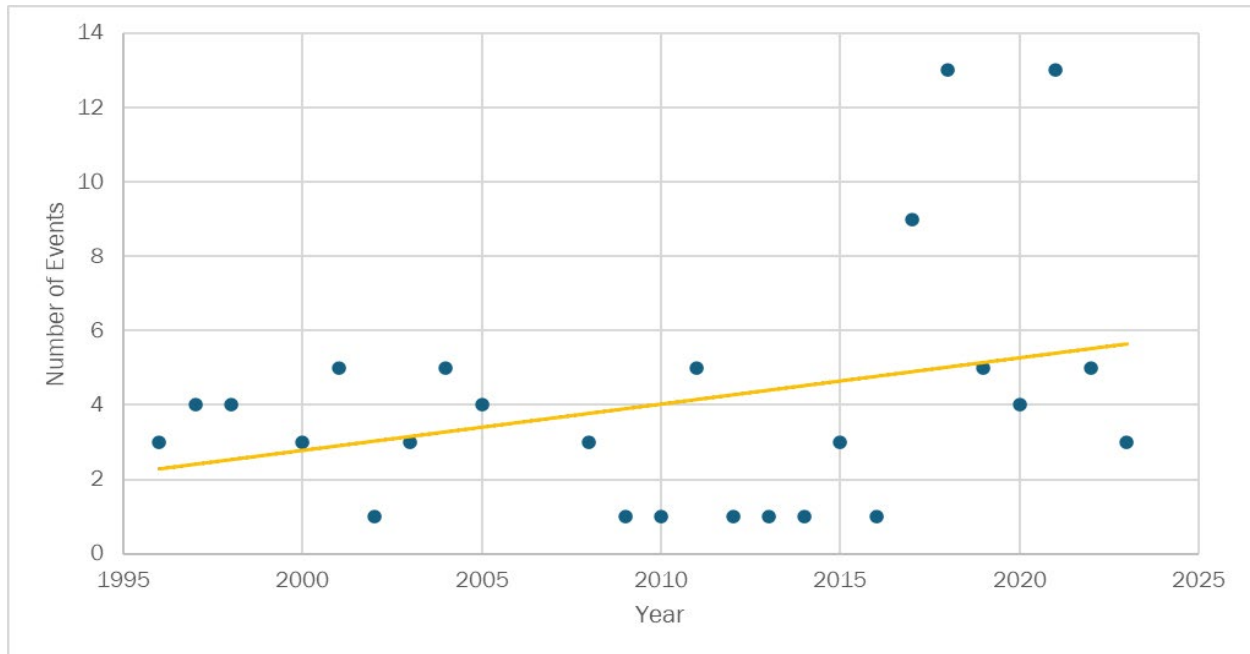
A Major Disaster Declaration (DR-1164-OH) was issued on March 4th, 1997, for 22 counties including Athens County. One county received individual assistance and 18 were offered both individual and public assistance. Athens County was offered both individual and public assistance. The County reported \$1.25 million in property damage. No deaths or injuries were reported.

Probability

Figure 4.4.5 Between 1995 and 2023, Athens County experienced 101 flooding events, including both floods and flash floods. Annually, this amounts to approximately three floods or flash floods per year. The yellow trendline of flood occurrences per year is increasing, which may suggest that Athens County can expect a similar frequency of flood events each year or more. According to the State of Ohio Hazard Mitigation Plan (SOHMP), increased precipitation and variability by climate change will increase the

likelihood and intensity of flood events. The Climate Change section in Future Trends discusses climate change further.

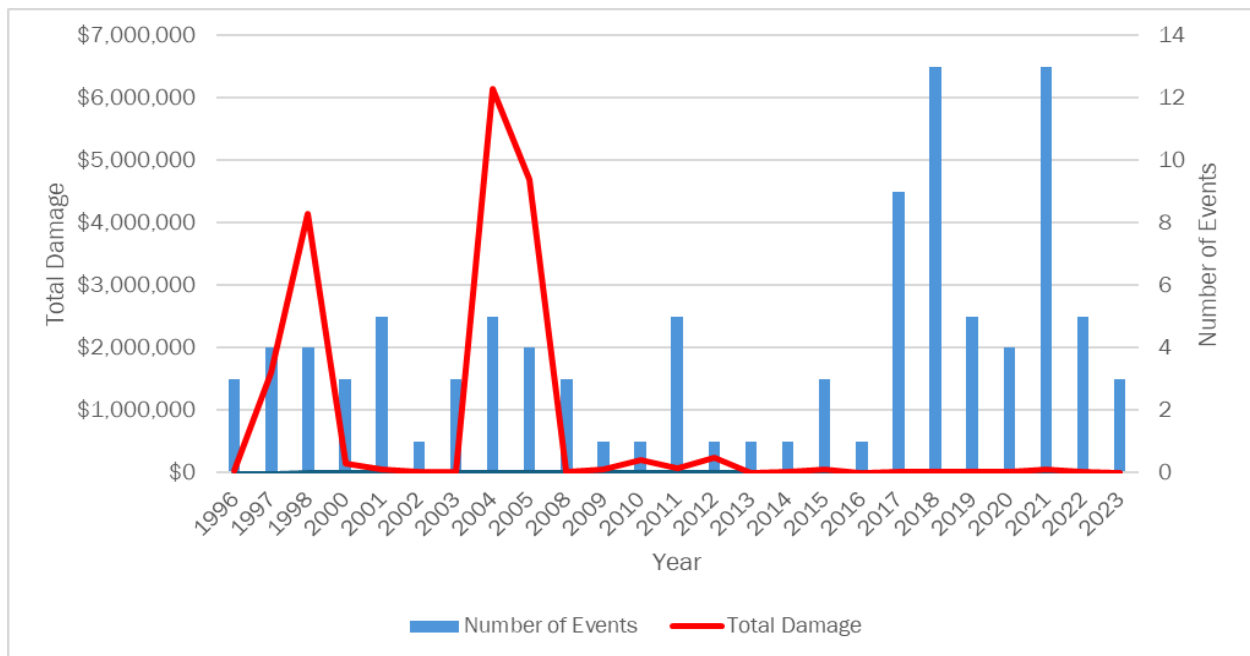
Figure 4.4.5: Probability of Flooding



Data Source: NOAA

Figure 4.4.6 shows both the trend of flood events and affiliated cost over time since January 1995. Between 1995 and 2023, floods or flash flood events have resulted in \$17,696,000 in property damage (Source: NCEI). Annually, this amounts to approximately \$632,000 in property damage.

Figure 4.4.6: Probability and Cost of Flooding



Data Source: NOAA



Vulnerability Assessment

Infrastructure Impact

Floods can impact roadways, including interstates and state routes, by blocking them due to high water, filling them with debris or washing away the road altogether.

Population Impact

Floods and flash floods have caused damage to occupied homes and businesses in the past. During flood events, shelter and temporary housing may need to be provided to those impacted by flooding.

For social vulnerability, in the National Risk Index, “riverine flooding” had a score of 84.0 (“Relatively Moderate”). People that are most vulnerable to flooding are those who live within the 100-year floodplain in structures that are not elevated about the base flood elevation. The index indicates an expected annual loss of \$2.1 million due to flooding with 2.9 events occurring per year.

Property Damage

Floods have the potential to damage infrastructure, resulting in the economic burden of clean up and repairs. Expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case Athens County census tracts. Expected losses for buildings, population (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract from riverine flooding are recorded in **Table 4.4.7** below. The tables list the 15 census tracts in Athens County from the highest total EAL to the lowest. The EAL Total column combines the buildings, population, and agricultural losses for each census tract. Based on the current natural hazard vulnerability assessment, riverine flooding exhibits the third highest relative vulnerability index score.

Table 4.4.7: Structure and Population Vulnerability from Riverine Flooding

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$871,832	\$100,841	\$7	\$972,679
39009972800	\$166,918	\$26,939	\$18,833	\$212,689
39009973400	\$163,769	\$14,201	\$14,110	\$192,080
39009973101	\$95,227	\$30,581	\$9	\$125,817
39009972600	\$98,329	\$14,792	\$1,348	\$114,469
39009972700	\$59,265	\$17,148	\$6,148	\$82,562
39009973902	\$61,042	\$21,160	\$1	\$82,203
39009972900	\$64,959	\$4,778	\$6,037	\$75,775
39009973000	\$45,812	\$13,040	\$0	\$58,852
39009973600	\$22,558	\$3,419	\$25,345	\$51,322
39009973700	\$3,316	\$1,162	\$32,801	\$37,278
39009973200	\$18,472	\$3,175	\$1,452	\$23,099
39009973500	\$4,880	\$1,844	\$15,401	\$22,125
39009973300	\$10,123	\$1,694	\$388	\$12,205
39009973800	\$3,380	\$522	\$559	\$4,461



Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
Grand Total	\$1,689,880	\$255,295	\$122,440	\$2,067,615

Source: FEMA National Risk Index

Loss of Life

There was one reported death from flood events in Athens County between January 1995 through December 2023. The death was from a person being swept away in flood waters. Loss of life is possible in future floods or flash floods.

Economic Losses

Floods can halt economic activity, block roadways, and destroy agricultural crops. Businesses may need to shut down their operations due to flood water damage or road closures. Crop losses are also possible during floods or flashfloods.

Future Trends

Land Use and Development Trends

Any development that occurs in flood zones will be at risk. Development in these areas should be limited. Flash flooding is more likely to occur in areas with a high percentage of impervious surfaces. Future land use practices should limit the percentage of impervious surfaces. **Chapter 5** contains mitigation actions that address these issues.

If construction practices, including the location of the new housing units, follow best practices for floodplain management, there are no known changes in the risks associated with riverine flooding.

Communities that are participating in the National Flood Insurance Program (NFIP) are required to adopt and enforce regulations and codes that apply to new developments in Special Flood Hazard Areas (SFHAs). These local floodplain management regulations must contain, at a minimum, NFIP requirements and standards that apply not only to new structures, but also to existing structures which are Substantially Improved (SI), or Substantially Damaged (SD) from any cause, whether natural or human-induced hazards.

According to 44 CFR 59.1, substantial improvement means any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. Likewise, substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. SI/SD requirements are also triggered when any combination of costs to repair and improvements to a structure in an SFHA equals or exceeds 50 percent of the structure's market value (excluding land value).

$$\frac{(Cost\ to\ Repair) + (Cost\ of\ Improvements)}{Market\ Value\ of\ Structure} \geq 50\ Percent$$

Enforcing the SI/SD requirements is a very important part of a community's floodplain management responsibilities. The purpose of the SI/SD requirements is to protect the property owner's investment and safety, and, over time, to reduce the total number of buildings that are exposed to flood damage, thus reducing the burden on taxpayers through the payment of disaster assistance. SD/SI requirements are enforced by the local floodplain administrator and monitored by the Ohio Department of Natural Resources (ODNR) Floodplain Management Program during Community Assistance Visits. If a local floodplain administrator is overwhelmed by the number of SD/SI



inspections after a large event, ODNR has developed a network of building code officials that are trained in conducting SD/SI field determinations. Help with SD/SI inspections can be requested through the County Emergency Management Agency director.

For more information regarding Substantial Improvement and Substantial Damage, please refer to [FEMA's Substantial Improvement/ Substantial Damage Desk Reference, P-758](#) or contact the [ODNR Floodplain Management Program](#).

Climate Change

According to the International Panel on Climate Change, climate change has impacted human and natural systems. For example, infrastructure and stormwater systems in the Midwest are threatened by increased precipitation frequency and intensity induced by climate change (NCA 2018). According to the SOHMP, increased precipitation and variability by climate change will also increase the likelihood and intensity of flood events, which will mostly occur during the summer and fall months. These events will mainly occur from late summer to early winter, increasing the likelihood of cool season flood events in the late autumn and early winter. Additionally, heavy precipitation events and precipitation are projected to increase during winter and spring, causing flooding, sewer overflow, inundated roadways, delayed growing season and crop damage, and infrastructure damage. Emergency action plans, green infrastructure, and anticipating extreme events are important steps to prepare for climate change.

4.5 Invasive Species

Description

Invasive species are non-native and have potential negative impacts on the environment and economy of Athens County. The National Oceanic and Atmospheric Administration (NOAA) defines an invasive species as “an organism that causes ecological or economic harm in a new environment and is not native.” Harmful species are species that are native to a region, but that also cause significant ecological, public health, or economic harm. Their growth is often encouraged through human activity.

Invasive species can be terrestrial (land dwelling) or aquatic (water dwelling). Terrestrial species include plants, trees, shrubs, animals, birds, and insects, as well as fungi, bacteria, molds, and viruses. Aquatic species include aquatic plants and algae, fish, mollusks, amphibians, and insects, as well as fungi, bacteria, molds, and viruses.

Location

Invasive species have the potential to impact any location within the County. The most invasive of terrestrial species degrades the State’s woodlands, wetlands, and prairies. Aquatic invasive species use rivers to spread. Ohio has over 66,000 miles of streams, 312 miles of Great Lakes shoreline, nearly 2,000 inland lakes and reservoirs, and shares major watersheds with other states and Canada. Athens County is part of the Mississippi River basin, which is an ecologically diverse river system, and is susceptible to invasions through the Ohio River and its tributaries. The Hocking River, which winds 102 miles through southern Ohio, half of that directly through Athens County, is part of the Mississippi River basin as it flows into the Ohio River and eventually the Mississippi River.

Extent

Once invasive species become widely established, controlling their spread is both technically difficult and expensive, making eradication nearly impossible. Invasive species can alter species diversity and natural wildlife habitat in regions where they become established. State and federal quarantine programs aim to prevent the further spread of various invasives. While the federal invasive species quarantine program attempts to control numerous species across all 50 states and territories, Ohio has two insects in quarantine programs, the spotted lantern fly and the box tree moth.

Athens County is one of 51 of Ohio’s 88 counties currently in federal quarantine for the spongy moth (*Lymantria dispar*) (**Figure 4.5.1**). The Spongy Moth is an invasive forest pest that moved west into Ohio from Pennsylvania. Each female can lay an egg mass that can contain 500-1,000 eggs and once the larvae hatch, they can successfully feed on over 300 different tree and shrub varieties. According to the Ohio Department of Agriculture, each larva can consume up to one square foot of foliage every 24 hours. Transportation of newly hatched caterpillars is via wind on silk threads, allowing them to travel hundreds of yards to as much as one mile to new areas. As caterpillars grow their transportation changes to crawling to new food sources.

Figure 4.5.1: Spongy Moth (*Lymantria dispar*)



Source: Ohio Department of Agriculture

The Asian long-horned tick (**Figure 4.5.2**) has been identified in Athens, along with 10 other central and southeastern Ohio counties, since it was first spotted in the state in 2020. The ticks prefer large livestock and wildlife and carry various pathogens that can cause disease in animals and humans. They also carry bovine theileriosis (*Theileria orientalis*), which causes increased heart and respiratory rates, anemia, jaundice, and increased mortality, posing a threat to Ohio's livestock. Unlike all other North American ticks, Asian long-horned females breed asexually, laying up to 2,000 eggs at a time, they are able to increase their numbers quickly leading to the potential for localized heavy infestations. Heavy tick infestation has led to the deaths of several cows from the sheer blood loss.

Figure 4.5.2: Asian Long-horned Tick (*Haemaphysalis longicornis*)



Source: Risa Pesapane

Approximately 2,300 plant species occur in the wild in Ohio. Of these, about 78 percent are native, that is, they existed in the region before European settlement. Of the remaining 22 percent, fewer than 100 have been identified to be problems in natural areas. According to the Ohio Invasive Plants Council, there are 38 invasive plant species in Ohio that have been banned and more under consideration (**Table 4.5.3**). These plants cannot be sold, distributed, or imported.

Table 4.5.3: Plant Invasive Species in Ohio as of January 7, 2018

Scientific Name	Common Name
<i>Ailanthus altissima</i>	Tree-of-heaven
<i>Alliaria petiolate</i>	Garlic mustard
<i>Berberis vulgaris</i>	Common barberry
<i>Butomus umbellatus</i>	Flowering rush
<i>Celastrus orbiculatus</i>	Oriental bittersweet
<i>Centaurea stoebe</i> ssp. <i>Micranthos</i>	Spotted knapweed
<i>Dipsacus fullonum</i>	Common teasel
<i>Dipsacus laciniatus</i>	Cutleaf teasel
<i>Egeria densa</i>	Brazilian elodea
<i>Elaeagnus angustifolia</i>	Russian olive
<i>Elaeagnus umbellate</i>	Autumn olive



Scientific Name	Common Name
<i>Epilobium hirsutum</i>	Hairy willow herb
<i>Frangula alnus</i>	Glossy buckthorn
<i>Heracleum mantegazzianum</i>	Giant hogweed
<i>Hesperis matronlis</i>	Dame's rocket
<i>Hydrilla verticillata</i>	Hydrilla
<i>Hydrocharis morsus-ranae</i>	European frog-bit
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Lonicera maackii</i>	Amur honeysuckle
<i>Lonicera morrowii</i>	Morrow's honeysuckle
<i>Lonicera tatarica</i>	Tatarian honeysuckle
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Lythrum virgatum</i> (effective January 7, 2019)	European wand loosestrife
<i>Microstegium vimineum</i>	Japanese stiltgrass
<i>Myriophyllum aquaticum</i>	Parrotfeather
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil
<i>Nymphoides peltata</i>	Yellow floating heart
<i>Phragmites australis</i>	Common reed
<i>Potamogeton crispus</i>	Curley-leaved pondweed
<i>Pueraria montana var. lobate</i>	Kudzu
<i>Pyrus calleryana</i> (effective January 7, 2023)	Callery pear
<i>Ranunculus ficaria</i>	Fig buttercup, lesser celandine
<i>Rhamnus cathartica</i>	Common buckthorn
<i>Rosa multiflora</i>	Multiflora rose
<i>Trapa natans</i>	Water chestnut
<i>Typha angustifolia</i>	Narrow-leaved cattail
<i>Typha x glauca</i>	Hybrid cattail
<i>Vincetoxicum nigrum</i>	Black swallow-wort

Studies conducted by Ohio Department of Natural Resources, Ohio Sea Grant, and the Ohio State University have identified over 70 invasive aquatic species in Ohio (**Table 4.5.4**). With the exception of white perch, it is unlawful to possess, import, or sell these species live.



Table 4.5.4: Aquatic Invasive Species in Ohio

Type	Scientific Name	Common Name
Fish	<i>Alosa pseudoharengus</i>	Alewife
Fish	<i>Carassius auratus</i>	Goldfish
Fish	<i>Carassius carassius</i>	Crucian carp
Fish	<i>Carassius gibelio</i>	Prussian carp
Fish	<i>Channa app. and Parachanna app.</i>	Snakeheads
Fish	<i>Claris batrachus</i>	Walking catfish
Fish	<i>Ctenopharyngodon idella</i>	Diploid grass carp - white amur
Fish	<i>Ctenopharyngodon Idella</i>	Grass carp
Fish	<i>Cyprinus carpio</i>	Common carp
Fish	<i>Fundulus catenatus</i>	Northern studfish
Fish	<i>Fundulus diaphanus</i>	Eastern banded killifish
Fish	<i>Gambusia holbrooki and Gambusia affinis</i>	Eastern & western mosquitofish
Fish	<i>Gasterosteus aculeatus</i>	Three-spined stickleback
Fish	<i>Gymnocephalus cernuus</i>	Ruffe
Fish	<i>Hypophthalmichthys harmandi</i>	Large-scale silver carp
Fish	<i>Hypophthalmichthys molitrix</i>	Silver carp
Fish	<i>Hypophthalmichthys nobilis</i>	Bighead carp
Fish	<i>Lates niloticus</i>	Nile perch
Fish	<i>Leuciscus idus</i>	Ide
Fish	<i>Morone americana</i>	White perch
Fish	<i>Mylopharyngodon piceus</i>	Black carp
Fish	<i>Neogobius melanostomus</i>	Round goby
Fish	<i>Osmerus mordax</i>	Rainbow smelt
Fish	<i>Perca fluviatilis</i>	European perch
Fish	<i>Perccottus glenii</i>	Amur sleeper
Fish	<i>Petromyzon marinus</i>	Sea lamprey
Fish	<i>Phoxinus phoxims</i>	Eurasian minnow
Fish	<i>Proterorhinus marmoratus</i>	Tubenose goby
Fish	<i>Pseudorasbora parva</i>	Stone moroko
Fish	<i>Rhodeus sericeus</i>	Bitterling
Fish	<i>Rutilus sericeous</i>	Roach
Fish	<i>Sander lucioperca</i>	Zander



Type	Scientific Name	Common Name
Fish	<i>Scardinius erythrophthalmus</i>	European rudd
Fish	<i>Scardinius erythrophthalmus</i>	Rudd
Fish	<i>Silurus glanis</i>	Wels catfish
Fish	<i>Tinca tinca</i>	Tench
Mollusks	<i>Bellamya (Cipangopaludina)</i>	Mystery snails
Mollusks	<i>Bithynia tentaculata</i>	Faucet snail
Mollusks	<i>Corbicula fluminea</i>	Asian clam
Mollusks	<i>Dreissena bugensis</i>	Quagga mussel
Mollusks	<i>Dreissena polymorpha</i>	Zebra mussel
Mollusks	<i>Limnoperna fortune</i>	Golden mussel
Mollusks	<i>Potamopyrgus antipodarum</i>	New Zealand mud snail
Crustaceans	<i>Bythotrephes longimanus</i>	Spiny water flea
Crustaceans	<i>Cercopagis pengoi</i>	Fishhook water flea
Crustaceans	<i>Cherax destructor</i>	Yabby
Crustaceans	<i>Cherax tenuimanus</i>	Marron
Crustaceans	<i>Dikerogammarus villosus</i>	Killer shrimp
Crustaceans	<i>Eriocheir sinensis</i>	Chinese mitten crab
Crustaceans	<i>Faxonius virilis</i>	Virile crayfish
Crustaceans	<i>Hemimysis anomala</i>	Bloody-red shrimp
Crustaceans	<i>Procambarus clarki</i>	Red Swamp crayfish
Plant	<i>Butomus umbellatus</i>	Flowering-rush
Plant	<i>Egeria densa</i>	Brazilian waterweed
Plant	<i>Hydrilla verticillata</i>	Hydrilla
Plant	<i>Hydrocharis morsus-ranae</i>	European frog-bit
Plant	<i>Iris pseudacorus</i>	Yellow iris
Plant	<i>Ludwigia peploides</i>	Creeping water primrose
Plant	<i>Lysimachia nummularia</i>	Moneywort
Plant	<i>Lythrum salicaria</i>	Purple loosestrife
Plant	<i>Marsilea quadrifolia</i>	European water clover
Plant	<i>Myriophyllum aquaticum</i>	Parrotfeather
Plant	<i>Myriophyllum spicatum</i>	Eurasian watermilfoil
Plant	<i>Najas minor</i>	Brittle naiad
Plant	<i>Nelumbo nucifera</i>	Pink lotus



Type	Scientific Name	Common Name
Plant	<i>Nitellopsis obtusa</i>	Starry stonewort
Plant	<i>Nymphoides peltata</i>	Yellow floating heart
Plant	<i>Phalaris arundinacea</i>	Reed canary grass
Plant	<i>Phragmites australis</i>	Common reed
Plant	<i>Pistia stratiotes</i>	Water lettuce
Plant	<i>Potamogeton crispus</i>	Curly-leaf pondweed
Plant	<i>Trapa natans</i>	Water chestnut
Plant	<i>Typha angustifolia</i>	Narrow-leafed cattail
Plant	<i>Typha x glauc</i>	Hybrid cattails (cross of invasive and common)

Another invasive species that has the potential to impact Athens County include:

Mute Swans are invasive species found on public lakes across Ohio, originally known as winter visitors with the first published record in the United States in 1936 and Ohio in 1987. During the breeding season, March through May, adult mute swans become highly territorial and will fight to push native birds out of their nesting area and can attack humans and pets. Mute swans can consume submerged aquatic vegetation and usually uproot the whole plant leaving nothing behind. This takes away natural habitat from fish and leaves little food source for native waterfowl. The removal of aquatic vegetation can also cause water quality issues and erosion problems.

History

Beyond species already identified as established in Athens County, it is possible that any of the other species listed above have at one point affected the County and its residents. Non-native invasive species, such as garlic mustard, Autumn olive, multiflora rose, Tree of Heaven, and lesser celandine have been found in Athens County. The Athens Conservancy, a nonprofit land trust that preserves wild and scenic places in Athens County. A key component of their mission is to manage non-native plant species. They have and continue to remove non-native plant species manually to reduce the risk of spreading the invasive species from preserves in Athens County. The stewardship team of Athens Conservancy has removed and/or eliminated several invasive species such as, privet, winged euonymus, multiflora rose, and Asian bittersweet.

Probability

Since there are many invasive species throughout Ohio, it is probable that Athens County will experience some of the invasive species listed above (**Tables 4.5.3 and 4.5.4**). Currently Athens County has several non-native plant species: garlic mustard, Callery pear, Autumn olive, multiflora rose, Tree of Heaven, and lesser celandine. In addition to invasive plant species, Athens County also has been infested with the Emerald Ash Borer (EAB) since 2014.

Vulnerability Assessment

Infrastructure Impact

There are no likely impacts to public roadway. The Callery Pear tree is considered an invasive species in Ohio and is structurally weak, posing an increased risk to utilities in extreme storm conditions. Public trees may be destroyed or impacted by various invasive species. Aquatic invasive species could destroy water quality, make poor habitat for fish, and clog water intake pipes. Some species also increase fire potential and can be problematic to levees, dams, and irrigation systems.



Population Impact

There are no likely impacts on the local population. Recreational activities such as boating and fishing may be mildly impacted.

Property Damage

Property damage, in the form of reduced values from impacts on landscaping, is possible. In addition, due to the weakness of the Callery Pear tree, there is an increased possibility of damage to roofs and utilities in extreme storm conditions.

Loss of Life

Loss of life because of invasive species is very unlikely. Some of these species consumed as food could lead to diseases and other health impacts in humans.

Economic Losses

Economic impacts can vary greatly depending on the target and the invasive species and their impacts on those targets. Agricultural and horticultural revenue losses may be experienced if crops and plants are affected by an invasive species. Also, there may be indirect economic losses with degradation of forested lands and tree canopies. Examples include reduction in viable lumber for construction, increased heating and cooling costs, and reduced property value.

Climate Change

According to the Fifth National Climate Assessment, warming temperatures caused by climate change are aiding in the spread of invasive species. Climate change can favor non-native invading species over native ones due to the tolerance of invasive species to warmer climate zones and native communities' decreased resistance to the new weather conditions.

Land Use and Development Trends

Slight impacts on development and land use due to invasive species are possible. Development and changes in land-use can often lead to the introduction of invasive species to an area due to their ability to thrive in developed areas in comparison to native species. During construction activities there is also an increased chance of introducing invasive species due to grass seed being shipped from other regions. Some invasive species can be particularly damaging to crops, agricultural land, and wetlands. Future development may involve site investigation to identify any potential invasive species on a property.

4.6 Landslide and Mine Subsidence

Description

The Ohio Department of Natural Resources (ODNR) defines a landslide as “a variety of downslope movements of earth materials. Some slides are rapid, occurring in seconds, whereas others may take hours, weeks, or even longer to develop.” Landslides are commonly triggered by human-induced vibrations, over-steepened slopes, increased weight on a slope, and removal of vegetation on areas with landslide-prone slopes. Landslides can also be caused by heavy precipitation.

Subsidence is the motion of the earth’s surface as it shifts downward relative to a benchmark (often sea level) of the surrounding terrain. In Ohio, the two primary causes are abandoned underground mines (AUMs) and karst. Karst is a topographic feature formed when carbonate rock, such as limestone, dolomite, and gypsum, is eroded by water draining or moving from these areas. Karsts are commonly represented as caves. There are three non-verified, suspect non-carbonate springs in Athens County.



Athens County Road Slip Following Heavy Storms During Spring 2025 (Photo Courtesy of Athens County EMA)

According to the Ohio Administrative Code 3901-1-48, mine subsidence is loss caused by the collapse or lateral or vertical movement of structures resulting from the caving in of underground mines including coal mines, clay mines, limestone mines, and salt mines. Mine subsidence does not include loss caused by earthquakes, landslides, volcanic eruptions, or collapse of strip mines, storm and sewer drains, or rapid transit tunnels. Several factors determine the potential for mines to collapse including depth, mining technique used, types of rock and/or soils, and the development on the ground surface. Additionally, abandoned underground coal mines in Ohio have the potential to discharge acidic water which, if discharged into creeks or streams, can alter the chemical composition of the water habitat and cause considerable harm to sensitive aquatic life.

Location

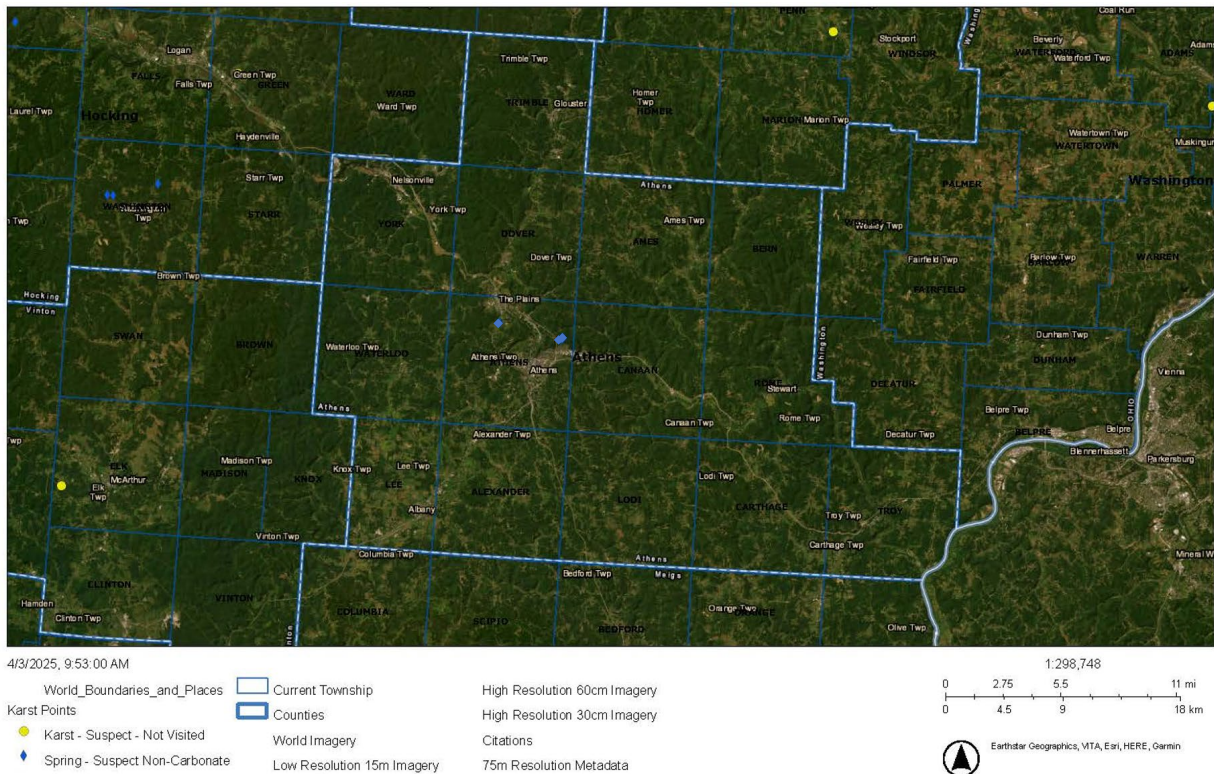
Figure 4.6.1 is a snapshot of the ODNR Karst Interactive Map for Athens County. The map shows areas of verified Karst fields, verified springs with carbonate, and suspected Karst fields (visited and not visited). All karst features are located in central Athens County. **Figure 4.6.2** shows the location of areas impacted by bedrock and glacial drift overlay.

Figure 4.6.3 shows the location of abandoned underground mines in Ohio and which counties have the option or are required to obtain mine subsidence insurance. The majority of abandoned underground mines can be found in region three or in nearby counties. All but six counties in region three require land subsidence insurance. Athens County has many abandoned mines in the northern part of the county, near Perry County, and abandoned mine insurance is required.

Figure 4.6.4 shows the location of areas at risk for landslides. Athens County is in region three and has moderate incidence and high susceptibility of landslides. The map displays both the incidence of landslides and susceptibility of the land surface to landslides. Briefly, the map was constructed by evaluating geologic units shown on the geologic map of the United States (King and Beikman, 1974) and classifying them as having high, medium, or low landslide incidence based on number of known landslides, and as having the high, medium, or low susceptibility to landslide. High incidence was

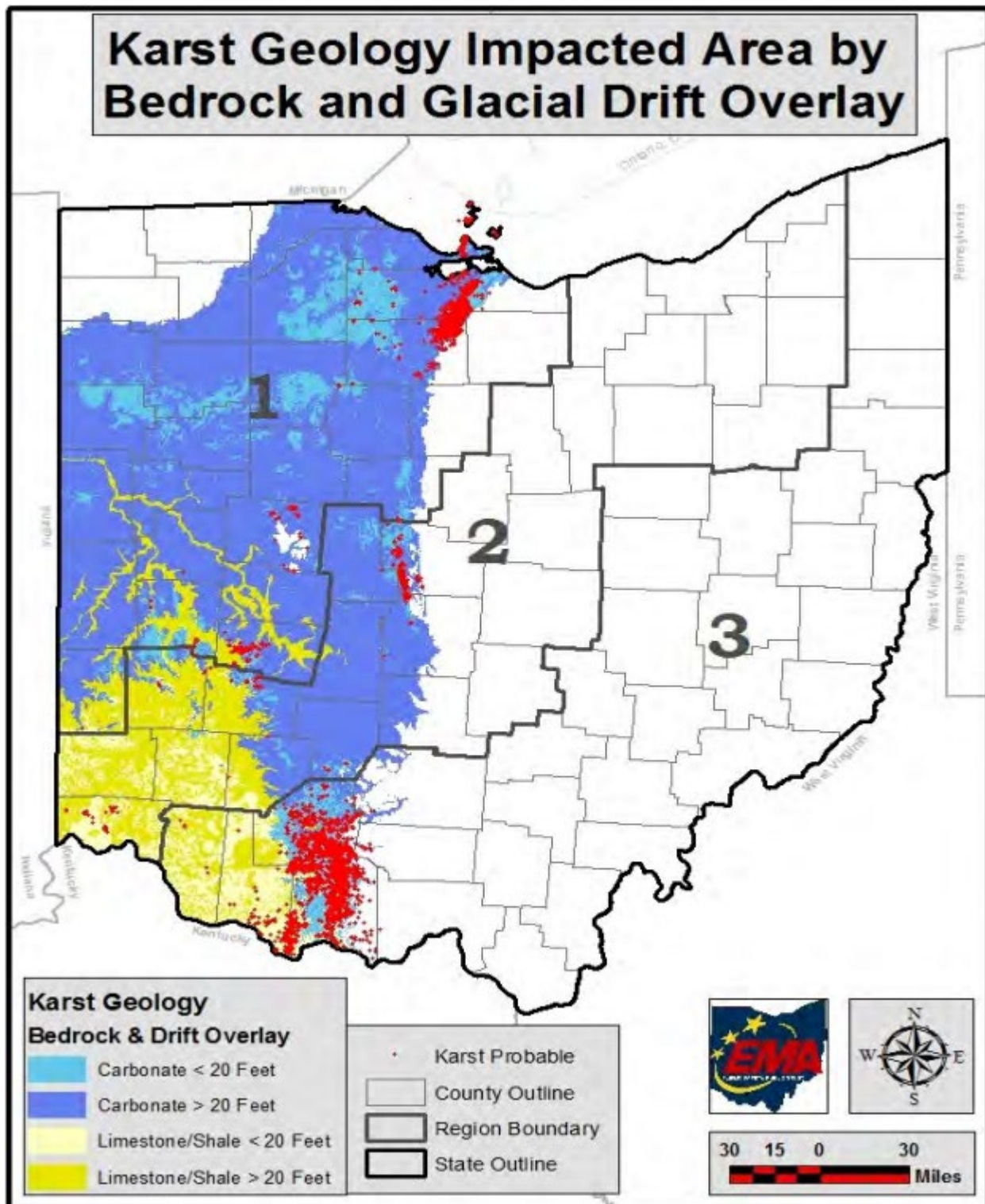
assigned to map units (indicated in red on the map) having more than 15 percent of their area involved in landslide; moderate incidence (in tan) to those having between 15 and 1.5 percent; and low incidence (in yellow) to those having less than 1.5 percent.

Figure 4.6.1: ODNR Karst Interactive Map



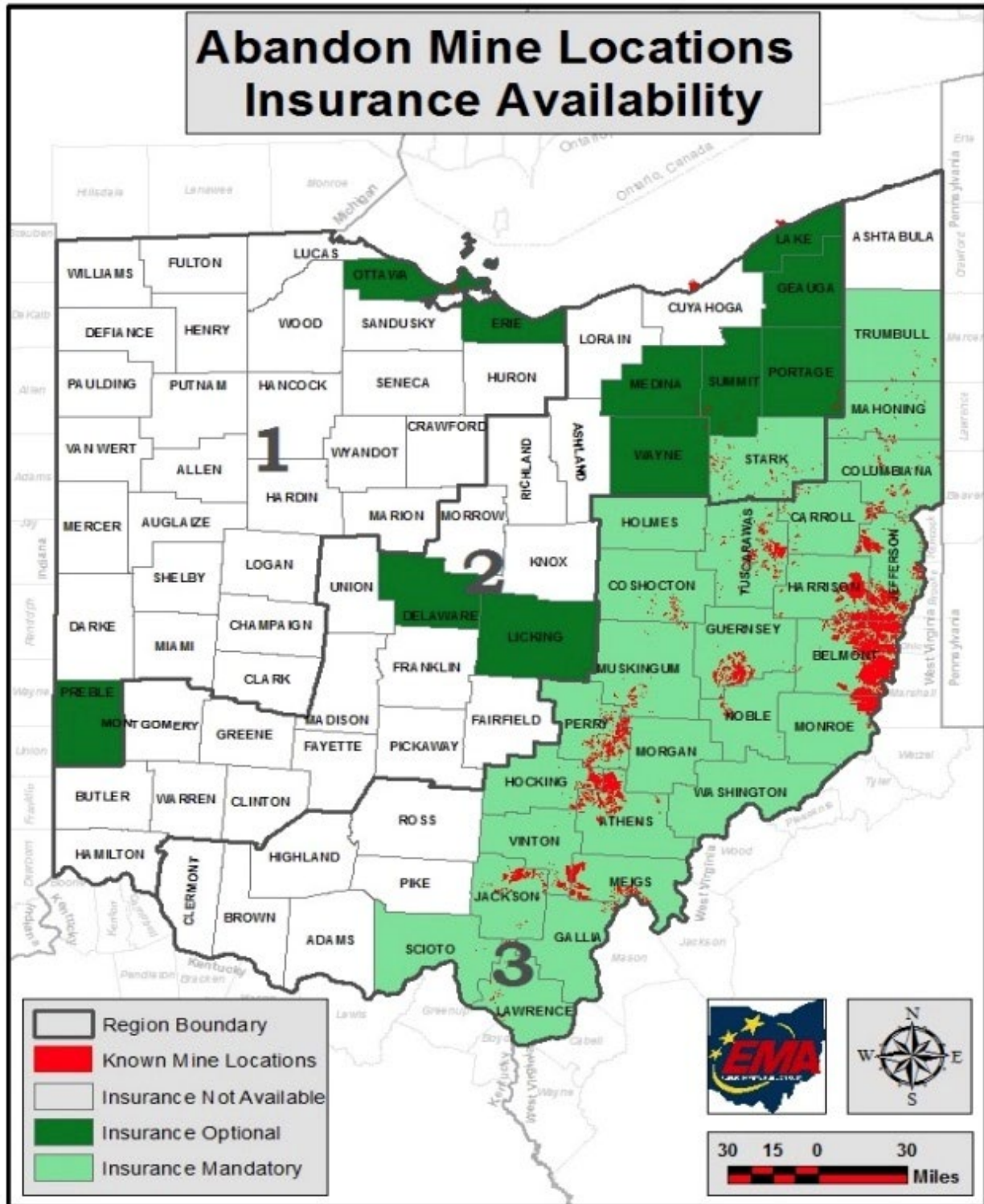
Source: Ohio Department of Ohio Natural Resources

Figure 4.6.2: Karst Geology Impacted Area by Bedrock and Glacial Drift Overlay



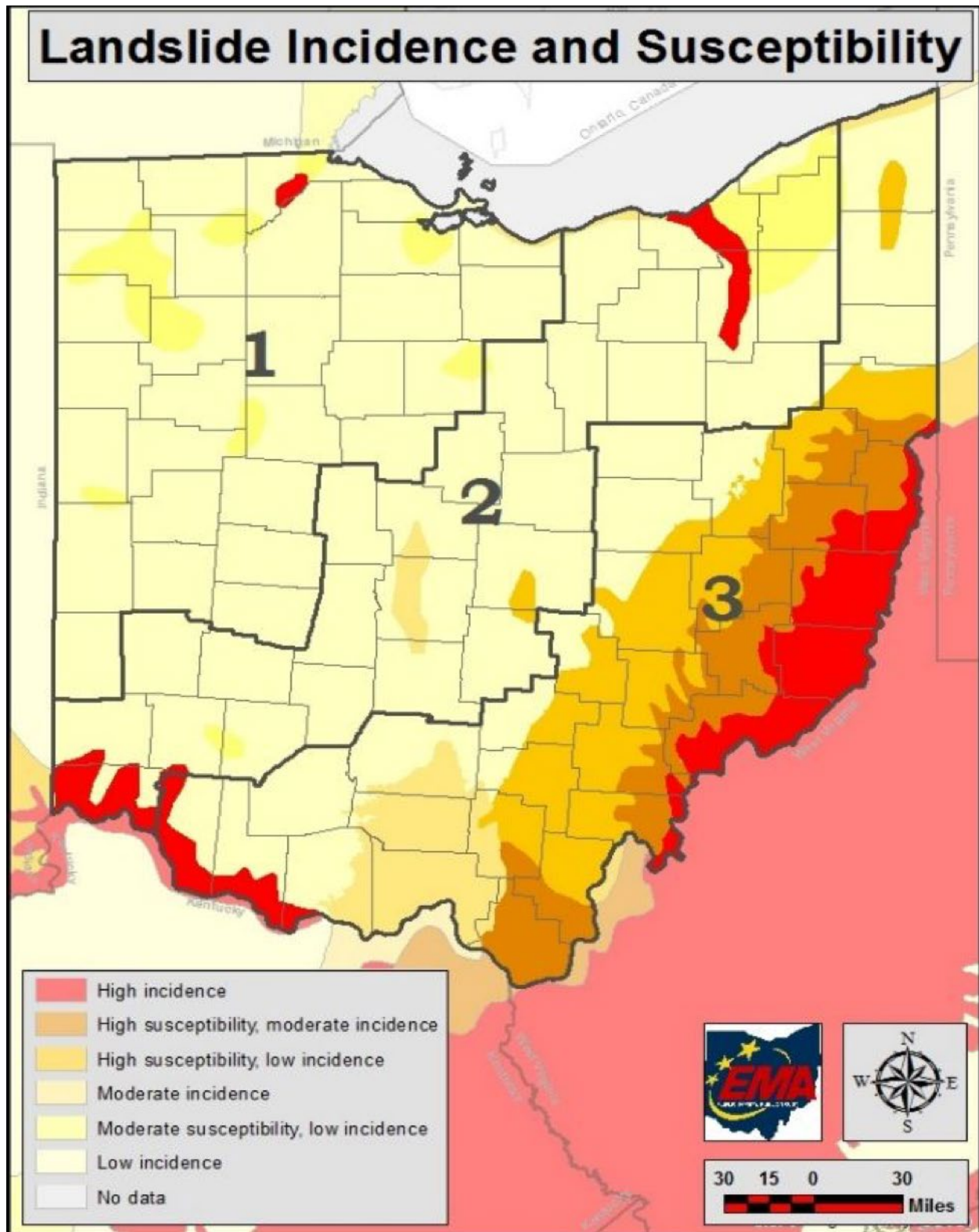
Source: State of Ohio Enhanced Hazard Mitigation Plan

Figure. 4.6.3: Abandon Mine Locations and Insurance Availability



Source: State of Ohio Enhanced Hazard Mitigation Plan

Figure 4.6.4: Landslide Incidence and Susceptibility Map



Source: State of Ohio Enhanced Hazard Mitigation Plan



Extent

According to ODNR Division of Geologic Survey, Athens County is home to five bedrock formations: the Allegheny and Pottsville Groups Undivided, the Conemaugh Group, the Monongahela Group, the Dunkard Group (Permian-Pennsylvanian), and the Dunkard Group (Permian). These formations include a mix of shale, mudstone, limestone, siltstone, sandstone, conglomerate, and subordinate amounts of limestone, clay, flint, and coal.

There are three major types of landslides:

1. Rotational slump, or a mass of weak rock or sediment moving as a block unit along a slope. These are the largest types of landslides found in Ohio.
2. Earthflow, or a mass of rock or sediment flowing downslope. These are the most common landslides in Ohio.
3. Rock fall, or a rapid downslope movement of large blocks of bedrock. Most rockfalls in Ohio involve sandstone or limestone that have been weakened by surface water.

According to the Ohio Mine Subsidence Insurance Underwriting Association, mine subsidence is caused by the collapse of underground mines causing damage or movement to a property and/or structure located above. Mine Subsidence insurance is required in 26 counties and optional for 11 counties in Ohio. Insurance for the mandatory counties has an annual premium of \$1.00 and \$5.00 for optional counties. Mine subsidence insurance is mandatory for residents of Athens County. Abandoned underground mines (AUMs) have been found in 43 Ohio counties, including Athens County. According to the Ohio Mine Subsidence Insurance Underwriting Association there are 275 abandoned underground mines in Athens County in 2023, down from 362 in 2022. The most common mines in Athens County are coal mines. There is one active underground mine in Athens County.

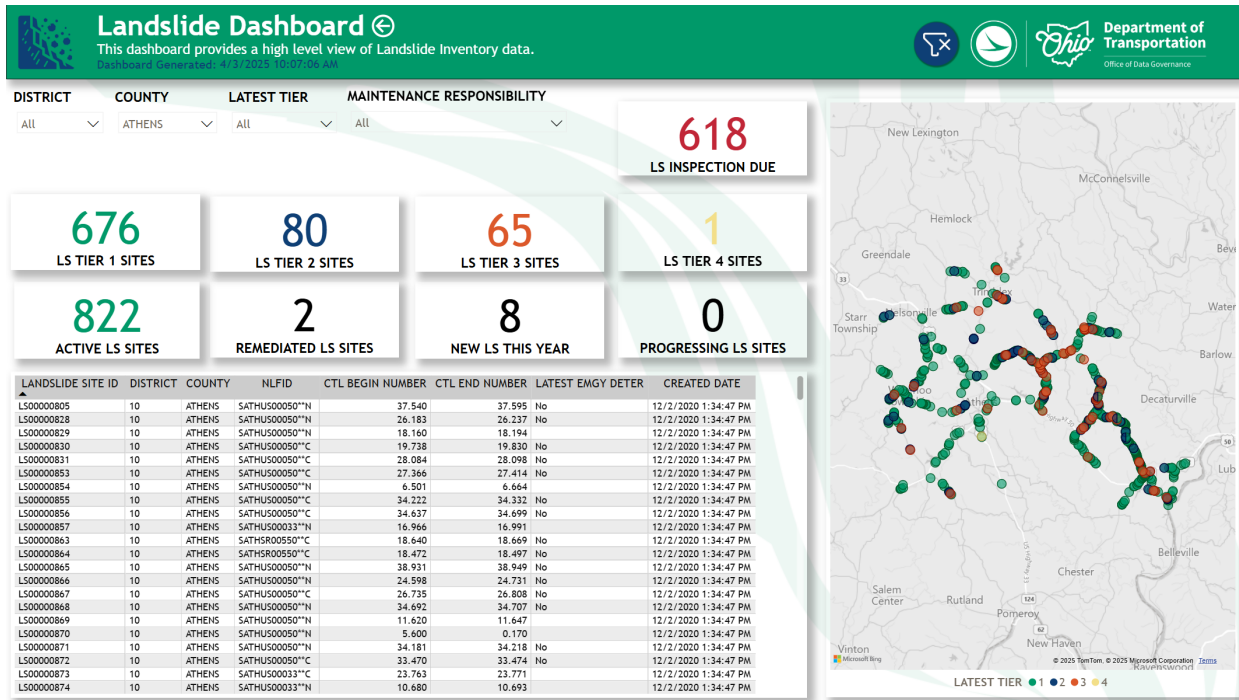
History

According to the Ohio Department of Transportation (ODOT) there have been 822 landslides in Athens County. Most of the landslides occur along major roadways, such as US-50, SR-690, SR-356, SR-56, and SR-681 (**Figure 4.6.5**). Of the 822 landslides, one is rated Tier 4, 65 are rated Tier 3, 80 are Tier 2 and 676 are Tier 1. Tier 1 ratings do not require a detailed rating and have a low probability of additional movement and a low probability of significant impact to an ODOT asset or adjacent property. Tier 2 ratings are for sites with moderate risk and do require a re-inspection every three years. Tier 3 ratings are for sites with high risk and require a re-inspection every two years. The landslide manual, developed by ODOT Office of Geotechnical Engineering (OGE), provides detailed information on the procedure for landslide data collection and landslide hazard assessment using the ODOT rating matrix.

There have been 352 rock slopes in Athens County. Most of the rock slopes occur along major roadways, such as US-50, SR-690, SR-356, SR-56, and SR-681 (**Figure 4.6.6**). Of the 352 rock slopes, one is rated Tier 4, 35 are rated Tier 3, 54 are rated Tier 2, and 262 are rated Tier 1. Similar to landslides, tier 1 rock slopes are non-rated and do not require a detailed data collection. The ODOT OGE developed a rock slope manual that details the data collection procedures for rock slopes.

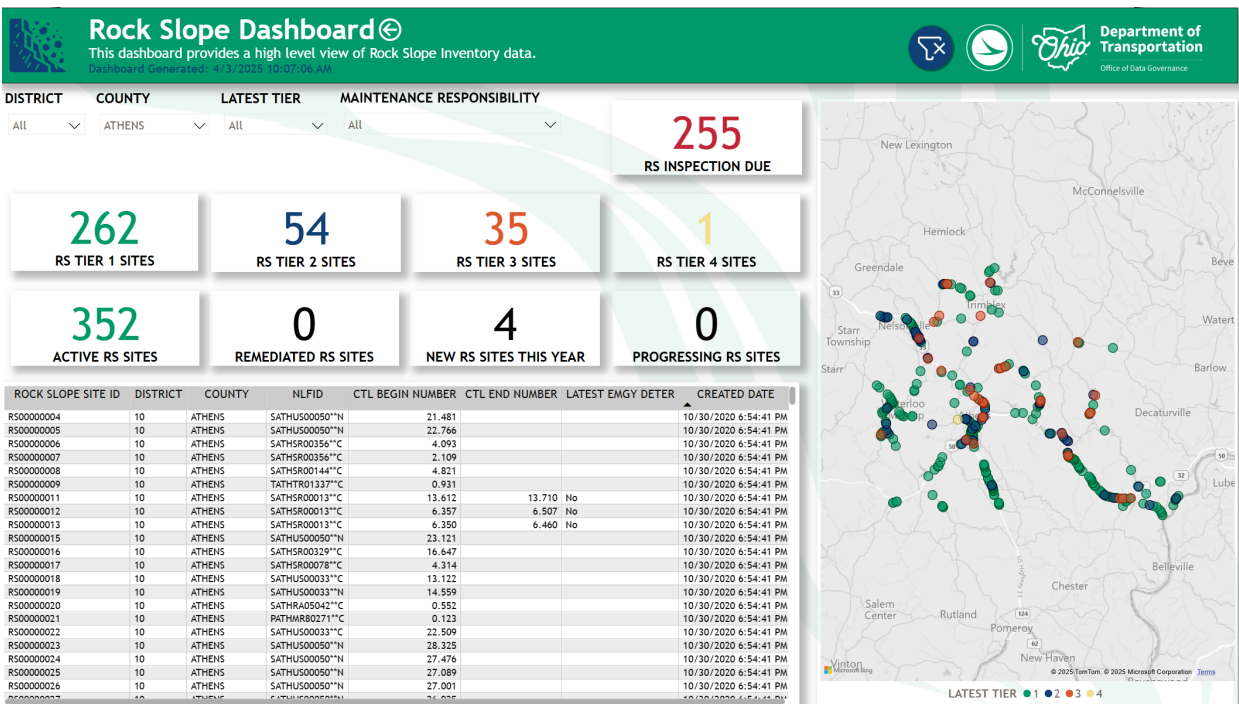
Since incidents of landslides and rockslides often go unreported, individual sites are an accurate way to discuss both past problem areas and future probability of events. The most common tier in the County is Tier 1, with 262 Tier 1 sites for rock slopes and 676 Tier 1 sites for landslides.

Figure 4.6.5: Landslide Dashboard for Athens County



Source: Ohio Department of Transportation Geohazards Dashboard

Figure 4.6.6: Rock Slope Dashboard for Athens County

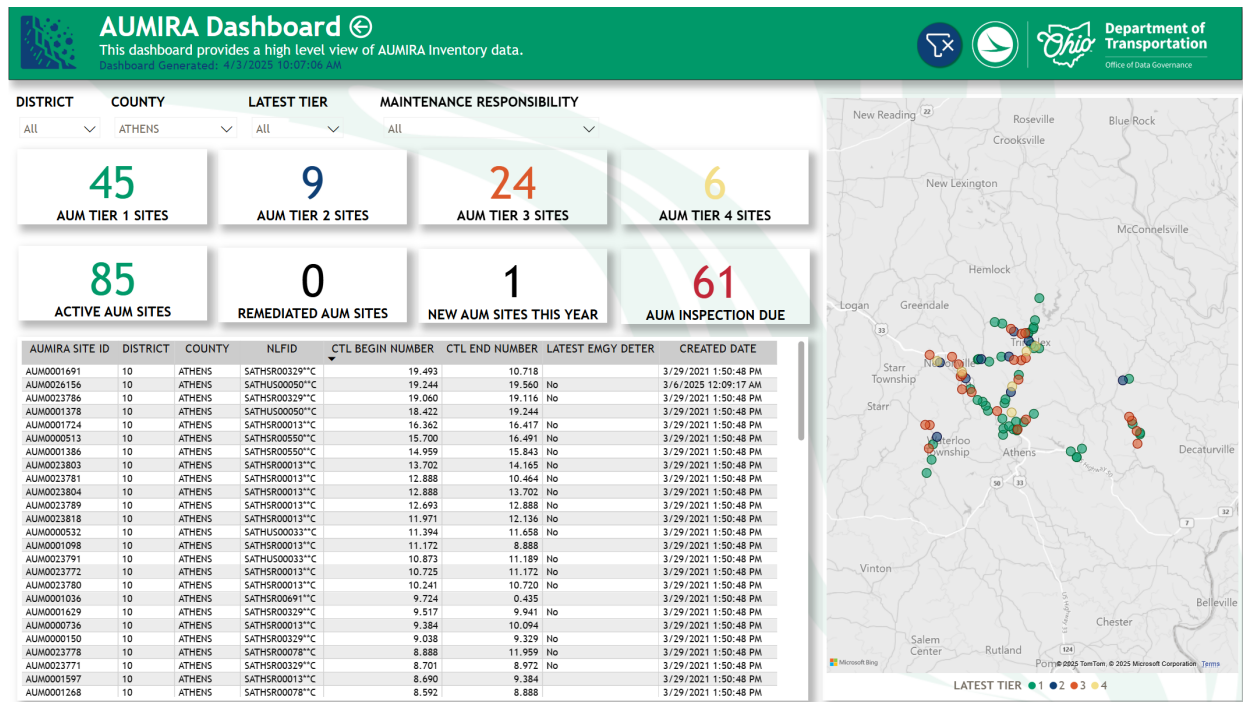


Source: Ohio Department of Transportation Geohazards Dashboard

There is a total of 275 abandoned underground mines according to the Ohio Mine Subsidence Insurance Underwriting Association, however only 85 are in the Abandoned Underground Mines in Athens County that currently have tier ratings, according to the Abandoned Underground Mine

Inventory and Risk Assessment (AUMIRA). Most of the abandoned underground mines can be found along major roadways, such as, US- SR-13, SR- 685, SR-78, and SR-356 (**Figure 4.6.7**). Of the 85 abandoned underground mines in AUMIRA, six are rated Tier 4, 24 are rated Tier 3, nine are rated Tier 2, and 45 are rated Tier 1. Abandoned underground mines are rated based on the site characteristics. Tier 4 sites have evidence of surface deformation, showing signs of settlement and subsidence. Tier 3 sites have evidence that a vertical shaft mine opening currently exists or historically existed. Tier 2 sites have evidence that a current slope or drift mine opening currently exists or historically existed. All other sites are rated Tier 1.

Figure 4.6.7: Abandoned Underground Mine Dashboard for Athens County



Source: Ohio Department of Transportation Geohazards Dashboard

Table 4.6.8 shows the insurance claims, claim payments, and policies. The number of policies fluctuates throughout the years with an average of 15,903 policies held each year.

Table 4.6.8: Insurance Claims and Payments

Year	Open Claims	Closed Claims	Claim Payments	Policies
2023	0	1	\$0	16,025
2022	0	1	\$0	16,151
2021	1	0	\$0	16,258
2020	0	2	\$0	15,792
2019	0	3	\$0	15,641
2018	0	3	\$0	15,611
2017	0	0	\$0	15,843

Source: Ohio Mine Subsidence Insurance Underwriting Association



Probability

According to the ODNR, Athens County falls within an area of moderate risk for slope failure and landslides and rock slopes should be considered a likely event. The 1870 Ohio Mine Law required a mine be registered if it had more than ten employees and mined more than 200,000 tons of coal. This leaves an undocumented number of smaller mines that closed prior to 1870. There are a known 6,000 underground mines in Ohio. On February 08, 2022, the federal government granted the State of Ohio \$46.4 million to reclaim abandoned coal mines. There have been instances of underground mine subsidence or collapse in Athens County. There are 275 abandoned underground mines and only 85 of those are rated in AUMIRA. Mine subsidence should be considered a likely event in Athens County.

Vulnerability Risk Assessment

Infrastructure Impact

Landslides can block or damage roadways, and damage existing utility infrastructure. Mine subsidence can occur under existing roadways or utility infrastructure causing anything from minor damage to complete destruction.

Population Impact

Landslides and mine subsidence can cause injury or death if a person is struck by or trapped under falling earthen material. Mine subsidence can cause sinkholes under occupied structures which could lead to injuries.

Mine subsidence is not listed in the National Risk Index, but landslide is listed with a score of 93.1 (relatively moderate). The index indicates an expected annual loss of \$185,000 due to landslides with zero events occurring per year.

Property Damage

Properties caught in the path of a landslide can be destroyed or severely damaged. Properties, including their structures, can be destroyed by mine subsidence.

Expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case Athens County census tracts. Expected losses for buildings, population (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract from landslides are recorded in **Table 4.6.9** below. The tables list the 15 census tracts in Athens County from the highest total EAL to the lowest. The EAL Total column combines the buildings, population, and agricultural losses for each census tract. Based on the current natural hazard vulnerability assessment, landslides exhibits the third highest relative vulnerability index score.

Table 4.6.9: Structure and Population Vulnerability from Landslides

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009972600	\$60,318	\$11,064	\$0	\$71,383
39009973901	\$22,440	\$2,127	\$0	\$24,567
39009972900	\$8,796	\$1,384	\$0	\$10,179
39009973400	\$8,594	\$908	\$0	\$9,502
39009972800	\$7,439	\$991	\$0	\$8,430
39009973200	\$6,831	\$1,130	\$0	\$7,960
39009973600	\$6,733	\$1,083	\$0	\$7,815



Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973000	\$6,526	\$1,273	\$0	\$7,799
39009973101	\$5,899	\$1,483	\$0	\$7,381
39009972700	\$5,003	\$1,068	\$0	\$6,071
39009973902	\$4,568	\$1,115	\$0	\$5,683
39009973700	\$3,904	\$1,026	\$0	\$4,931
39009973800	\$3,870	\$957	\$0	\$4,826
39009973500	\$3,463	\$884	\$0	\$4,347
39009973300	\$3,697	\$644	\$0	\$4,341
Grand Total	\$158,080	\$27,137	\$0	\$185,217

Source: FEMA National Risk Index

Loss of Life

Loss of life is possible during sudden mine subsidence or landslides. However, there are no known fatalities in Athens County due to mine subsidence or landslides.

Economic Losses

Landslides and mine subsidence can block or destroy sections of roadways vital to shipping. Stores, storage facilities, and other structures that are important to economic activity can also be severely damaged or destroyed. It can also be quite expensive to repair sinkholes when they occur.

Future Trends

Land Use and Development Trends

Uses that serve vulnerable populations, such as schools and hospitals, should not be placed in areas that are in high-risk zones for landslides. Development should be limited to areas with minimal slope to reduce potential losses during landslides. Development should also consider low-impact techniques to reduce the likelihood of runoff from precipitation and therefore reduce the risk of landslides. If new residential construction units are within areas with steep slopes, it would increase property and population vulnerabilities in those areas.

Using the United States Geological Survey Landslide Inventory and Susceptibility map as a resource for mapping, future land use changes can reduce the potential of property damage. The map depicts areas that have increasing susceptibility to landslides. For Athens County there are several long stretches of state highways, roads, and rivers that have increasing susceptibility to landslides, rock slopes, and mine subsidence.

Climate Change

According to the Midwest chapter of the Fifth National Climate Assessment, the likelihood of precipitation has increased five to 15 percent, and the amount of rain falling during heavy precipitation events has increased by 45 percent on average between 1958 to 2021. Extreme precipitation could increase the likelihood of landslides in areas with steep slopes. Flooding caused by heavy precipitation could also increase the rate of runoff for acid mine drainage along rivers and streams. More frequent and intense rain events can also increase erosion rates and lead to greater amounts of sediment runoff into rivers, lakes, and streams (U.S. Environmental Protection Agency 2023).



4.7 Severe Summer Weather

Description

Severe summer weather events may include severe thunderstorms and thunderstorm winds, hail, and lightning. High winds, tornadoes, and flooding may also be related to severe summer storms, and due to the potential threat of these events, they are each discussed in separate risk assessments. While tropical storms and hurricanes are also forms of severe storms, Athens County does not have any record of such events affecting the County; therefore, the County has not deemed tropical storms and hurricanes to be a threat, and these specific types of weather will not be addressed further.

According to the National Weather Service (NWS), a severe thunderstorm is a thunderstorm that produces a tornado, has winds of at least 58 MPH, and/or hail at least one inch in diameter. A Severe Thunderstorm Watch is issued by the NWS if conditions are favorable for the development of severe thunderstorms. A watch is usually in place for four to eight hours, during which time people should be prepared to move to a safe place if threatening weather approaches.

A Severe Thunderstorm Warning is issued if either the WSR-88D radar indicates a severe thunderstorm or if a spotter reports a storm producing hail or winds meeting the criteria outlined in the description above. The WSR-88D radar is an advanced Weather Surveillance Doppler Radar utilized by the NWS to generate a radar image. The NWS recommends that people in the affected area seek safe shelter immediately, as severe thunderstorms have the potential to produce tornadoes with little-to-no advance warning. Lightning frequency is not a criterion for issuing a severe thunderstorm warning. The warnings are usually issued for one hour and can be issued without a Severe Thunderstorm Watch already in effect. The National Weather Service Forecast Office in Charleston, West Virginia is responsible for issuing Severe Thunderstorm Watches and Warnings for Athens County.

Lightning is caused by a rapid discharge of electrical energy that has built up in the atmosphere between clouds, the air, or the ground. Lightning strikes can be either direct or indirect. A direct strike is when lightning strikes a building or a specific zone, which can result in fusion points melting holes of varying sizes at the point of impact of materials with high resistivity. An indirect lightning strike is when lightning causes power surges that disrupt electrical equipment.

Severe summer weather can also create strong winds – often called “straight-line” winds – to differentiate thunderstorm winds from tornadic winds. These winds, which have the potential to cause damage, are caused by an outflow generated by a thunderstorm downdraft.

Hail is a type of frozen precipitation that occurs when thunderstorm updrafts carry raindrops upward into extremely cold atmospheric zones where they freeze before falling to the ground. The resulting hailstones can fall at speeds greater than 100 MPH and range in size from smaller than 0.50 inches (the size of a pea) to 4.5 inches (the size of a softball) (Source: National Weather Service).

The NWS can issue various types of wind advisories and warnings. A **wind advisory** is issued when sustained winds of 31 to 39 MPH are reached for an hour or more and/or if there are wind gusts of 46 to 57 MPH for any duration. A **High Wind Watch** indicates that sustained, strong winds are possible, and outdoor items should be secured. People should modify plans, so they are not caught outside. Additionally, a **High Wind Warning** indicates that sustained, strong winds (40 MPH or greater) with even stronger gusts (greater than 58 MPH) are happening. People should seek shelter, and those driving should keep both hands on the wheel and slow down. An **extreme wind warning** is issued for surface winds of 115 MPH or greater associated with non-convective, downslope, derecho (not associated with a tornado), or sustained hurricane winds that are expected to occur within one hour.

Location

Severe summer weather is a countywide hazard, and all of Athens County is susceptible to severe summer weather.



Extent

Severe summer weather events have the potential to create large-scale damage in Athens County. Specifically, lightning is responsible for approximately 20 deaths annually across the United States, as well as hundreds of injuries (Source: NOAA). Winds associated with severe summer storms have the potential to cause damage by bringing down tree limbs and generating widespread power outages. Additionally, hail can result in property damage. Severe summer storms can lead to flooding, downed trees and power lines, and other dangerous conditions.

History

According to the National Centers for Environmental Information (NCEI), there have been 178 high-, strong-, or thunderstorm wind events, 81 hail events, ten heat events, eight heavy rain events, and four lightning events recorded in Athens County between January 1995 and December 2023. These events resulted in \$6,013,750 in property damage and \$0 in crop damage. Additionally, one death and 14 injuries caused by summer storm events were reported in Athens County since 1995. All severe storm events from 1995 to 2023 are summarized in **Table 4.7.1**, below:

Table 4.7.1: Thunderstorm-Related Events in Athens County since 1995

Severe Storm Event Type	Number of Events	Injuries	Deaths	Property Damage	Crop Damages
Hail	81	0	0	\$323,000	\$0
Heat	10	0	0	\$0	\$0
Heavy Rain	8	0	0	\$0	\$0
High Wind	16	8	0	\$150,000	\$0
Lightning	4	0	1	\$53,000	\$0
Strong Wind	6	0	0	\$90,000	\$0
Thunderstorm Wind	156	6	0	\$5,397,750	\$0
Grand Total	281	14	1	\$6,013,750	\$0

Source: NOAA Storm Events Database

Athens County has not had a disaster declaration for severe storms since the previous hazard mitigation plan was completed in 2020. However, since January 1995, the County has been subject to one major disaster declaration for severe storms and straight-line winds, three major disaster declarations for severe storms, flooding, and tornadoes and one emergency declaration for severe storms. Several of the most damaging events, events that resulted in deaths and/or injuries, and events with emergency or disaster declarations are described in more detail below.

Major Disaster Declaration for Severe Storms and Straight-Line Winds, and Emergency Declaration for Severe Storms, June 29, 2012 – July 2, 2012:

At the end of June, a heatwave gripped much of the Mid-Atlantic, helping to fuel severe weather. A line of powerful thunderstorms brought derecho winds with gusts estimated at 80 MPH, hail, and heavy rain causing extensive damage across the Ohio Valley and Mid-Atlantic states on the afternoon of June 29. Around four million residents lost power for almost a week in several states and were at risk of heat-related illness or death due to the developing heat wave, as the wind gusts between 60-85 MPH and a derecho wind at 65 MPH knocked down and uprooted trees, snapped power lines, and produced large hail in some areas of Ohio. Four counties in southeast Ohio reported individual damage to the state, including Athens County. Across the County reports of downed trees, including 25 trees lost on the Ohio University campus, and powerlines resulted in almost 24,000 residents without power, some



for several days. The heat wave made it difficult for electric crews to restore power as they were forced to take repeated breaks. Damage to public infrastructure was estimated at \$580,000. Private structural damage included the destruction of one home, four homes with major damage, and three with minor damage. An emergency declaration was issued on June 30, 2012, after which a Major Disaster Declaration was issued on August 20, 2012. Reported property damage totaled \$2,660,000 with \$0 crop damage. Athens County was eligible for public assistance because of the disaster and emergency declarations. There were no reports of injuries or deaths in Athens County.

Lightning Event, May 4, 2012:

The interaction of a dropping convection and east to west cold front brought dew points to the mid-60s with areas of deeply cold air spawned clusters of thunderstorms. Rainfall was estimated at up to two inches fell over two hours, flooding roads where several motorists flooding their cars attempting to traverse flood waters. One person died as a result of this storm. No other details were found regarding the death. Property damage was reported at \$5,000 with no crop damage. No other injuries or deaths were reported in Athens County.

Thunderstorm Wind and Hail Event, September 16, 2010:

Severe weather formed over the region as a result of the interaction of a cold and a warm front, generating tornadoes, rear-flank downdraft surface winds, hail, and rain. Of the five tornadoes, one entered Athens County but most of the damage was a result of wind gusts from the downdraft that caused damage over an area a quarter mile wide and 10 miles long, including the town of The Plains where downdraft winds were clocked at 100 MPH. In the city of Athens, a High School soccer game was interrupted as players, coaches, referees, and fans took shelter in the school building to escape wind gusts upwards of 80-100 MPH. The winds damaged or destroyed the light poles, press box, scoreboard and roof of the school, as well as the air conditioner units that were blown off the building onto vehicles parked in the parking lot. Several adults were injured at the High School. A total of six individuals reported injuries. Additionally, other structures suffered roof damage, several homes were destroyed, and an automobile and towing business suffered damage. Athens County reported \$2,000,000 in property damage. There were no deaths reported in Athens County, however, there was one death reported on the West Virginia side of the Ohio River due to this storm.

High Wind Event, August 9, 2000:

Eight people received minor injuries while about 400 others escaped without issue when the county fair tent collapsed under thunderstorm wind gusts of up to 40-50 MPH. Trees were also damaged in the area. Property damage was reported at \$20,000. No crop damage was reported. A total of eight injuries were reported from this storm and no deaths.

Major Disaster Declaration for Severe Storms, Flooding, and Tornadoes, June 24, 1998 – July 5, 1998:

Several thunderstorm fronts swept across southeastern Ohio over three days resulting in significant wind damage blowing over or damaging numerous trees in the area, as well as knocking trees across SR-56. The worst damage was from severe and widespread flooding. Close to 200 homes were damaged by either wind, flooding, or both, in Athens County. Property damage from trees and wind totaled \$7,000 in property damage. There were no deaths or injuries reported in Athens County, however there was one death reported in Washington County and one death reported in Meigs County due to the flooding. A Major Disaster Declaration (DR-1227-OH) was issued on June 30, 1998. Athens County was eligible for both individual and public assistance from this disaster declaration.

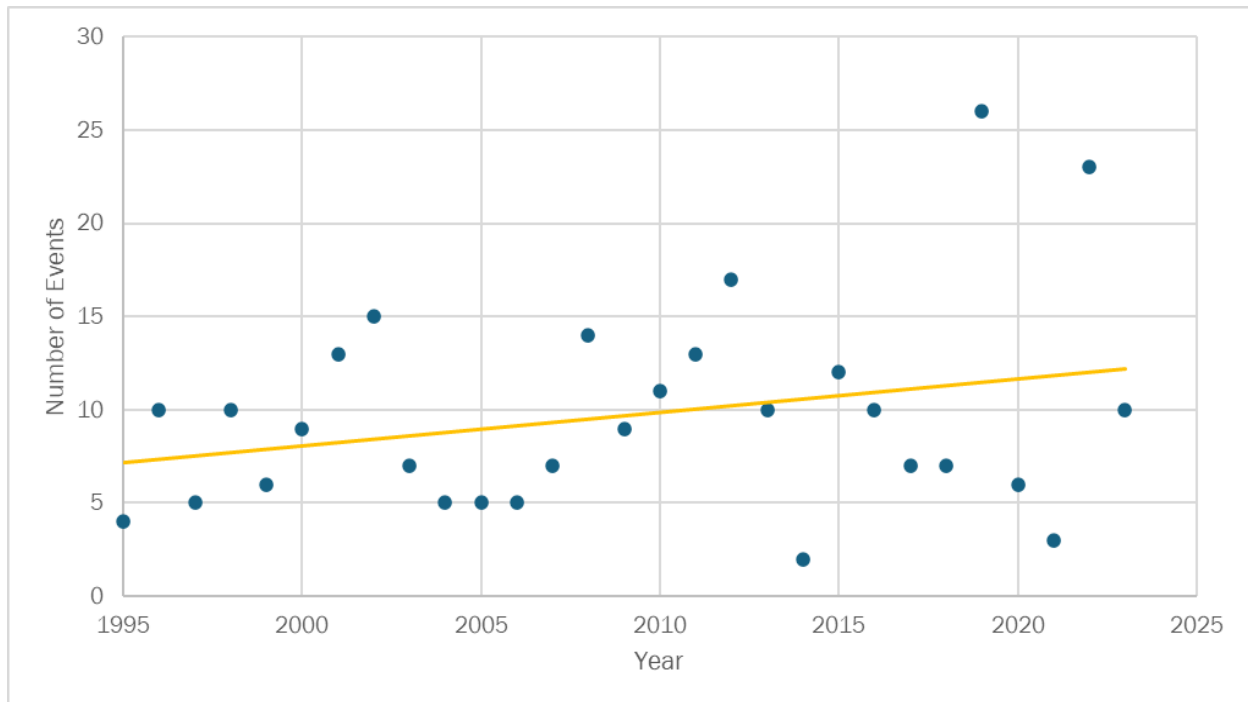
Major Disaster Declaration for Severe Storms, Tornadoes, and Flooding, May 28, 1990 – July 15, 1990:

A disaster declaration (DR-870-OH) was declared on June 6, 1990, for severe storms, tornadoes, and flooding. Athens County was one of 25 counties in Ohio to be eligible for individual assistance and one of 18 Ohio counties eligible for public assistance from this disaster declaration.

Probability

According to the NCEI, there have been 281 severe summer storm events reported in Athens County from January 1995 to December 2023 with total losses reaching \$6,013,750 in property damage. This amounts to around 9.7 severe summer storm events annually with an average annual total damage of approximately \$207,371. **Figure 4.7.2** below shows the trend in number of severe summer weather events per year since 1995. The trendline (shown in yellow) indicates an increase in the number of summer storm events. The data for Athens County corresponds with preliminary research from the National Climate Assessment that suggests the frequency and intensity of severe thunderstorms could increase as the climate changes. The Climate Change section in Future Trends discusses climate change further.

Figure 4.7.2: Severe Summer Storm Probability



Source: NOAA

Vulnerability Assessment

Infrastructure Impact

Above-ground infrastructure is at risk for storm damage by wind and falling debris. For infrastructure, high winds and hail are the most damaging part of a severe storm. Thunderstorm winds can strip bark from trees and detach limbs. If large branches fall, they can damage buildings and above-ground infrastructure. In the most severe storms with high winds, large trees can be uprooted and have the potential to fall on buildings including houses, which can cause harm or death.

Utilities are at risk of damage by severe summer storms, as well. Electrical lines are spread throughout the County connecting homes, businesses, and other facilities. Severe storms are likely to down tree



limbs and generate other debris that can affect above-ground electrical lines causing power outages. Downed power lines that are still live are extremely hazardous and can cause death by electrocution.

Population Impact

Summer storms are random in nature and affect the entire area of the County. Everyone within the County should be prepared during a storm event. Populations residing in mobile home parks are particularly vulnerable and should seek shelter.

According to FEMA's National Risk Index, Athens County was scored a 42.7 ("very low") risk from the negative impacts of natural hazards based on a relatively moderate social vulnerability, relatively moderate community resilience, and very low expected annual loss, compared to all other counties in the U.S. The risk for individual hazard events associated with severe summer weather are as follows: 47.4 ("relatively low") for hail, 69.6 ("relatively moderate") for lightning, and 48.6 ("relatively low") for strong wind. The index also calculates an expected annual loss of \$83,094 due to hail events, \$176,096 due to lightning events, and \$317,840 due to strong wind events, with 3.0, 70.0, and 1.2 events occurring per year, respectively.

Property Damage

As described above, severe summer weather events have caused an average of \$207,371 in annual property damage from 1995 to 2023. Due to the non-site-specific nature of this hazard, **Tables 4.7.3-4.7.5** list all structures within Athens County as having potential impacts from severe storms.

Loss of Life

There were 14 injuries and one death in Athens County between January 1995 to December 2023 as a result of severe summer weather. There were two other deaths reported in neighboring counties. All of Ohio has the potential for injuries and fatalities during severe summer weather.

Economic Losses

Severe summer weather has the potential to damage infrastructure, resulting in the economic burden of clean up and repairs, as well as the economic loss from deaths and injuries. Expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case Athens County census tracts. Expected losses for buildings, population (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract from hail, lightning, and strong wind events are recorded in **Tables 4.7.3 - 4.7.5** below. The tables list the 15 census tracts in Athens County from the highest total EAL from severe summer events to the lowest. The EAL Total column combines the buildings, population, and agricultural losses for each census tract.

Table 4.7.3: Structure and Population Vulnerability from Hail

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$13,958	\$238	\$0	\$14,196
39009972900	\$7,480	\$222	\$34	\$7,736
39009973400	\$7,209	\$121	\$57	\$7,387
39009972800	\$6,410	\$145	\$72	\$6,627
39009973800	\$5,672	\$192	\$361	\$6,224
39009973200	\$5,327	\$176	\$28	\$5,531
39009973600	\$4,692	\$146	\$219	\$5,057
39009973300	\$4,554	\$151	\$18	\$4,722



Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009972600	\$4,316	\$143	\$15	\$4,475
39009973000	\$4,059	\$142	\$0	\$4,202
39009973101	\$3,669	\$166	\$0	\$3,835
39009973700	\$3,233	\$152	\$259	\$3,644
39009972700	\$3,339	\$135	\$25	\$3,499
39009973500	\$2,702	\$127	\$166	\$2,994
39009973902	\$2,841	\$125	\$0	\$2,966
Grand Total	\$79,461	\$2,379	\$1,254	\$83,094

Source: FEMA National Risk Index

Table 4.7.4: Structure and Population Vulnerability from Lightning

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$1,042	\$16,434	\$0	\$17,475
39009972900	\$594	\$15,746	\$0	\$16,339
39009973800	\$485	\$14,514	\$0	\$14,999
39009973200	\$406	\$12,011	\$0	\$12,417
39009972600	\$373	\$11,020	\$0	\$11,393
39009973101	\$274	\$11,037	\$0	\$11,311
39009973700	\$262	\$11,026	\$0	\$11,287
39009972800	\$512	\$10,415	\$0	\$10,927
39009973300	\$353	\$10,515	\$0	\$10,869
39009973600	\$374	\$10,456	\$0	\$10,831
39009973000	\$320	\$9,995	\$0	\$10,315
39009972700	\$267	\$9,689	\$0	\$9,956
39009973500	\$224	\$9,475	\$0	\$9,699
39009973400	\$573	\$9,001	\$0	\$9,574
39009973902	\$217	\$8,487	\$0	\$8,703
Grand Total	\$6,275	\$169,821	\$0	\$176,096

Source: FEMA National Risk Index


Table 4.7.5: Structure and Population Vulnerability from Strong Winds

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$36,110	\$9,651	\$0	\$45,761
39009972900	\$19,541	\$9,095	\$4	\$28,640
39009972800	\$20,667	\$7,342	\$10	\$28,018
39009973800	\$16,633	\$8,909	\$46	\$25,589
39009973400	\$18,656	\$4,921	\$6	\$23,583
39009973200	\$13,949	\$7,308	\$3	\$21,260
39009972600	\$12,607	\$6,557	\$2	\$19,166
39009973600	\$12,138	\$5,914	\$24	\$18,076
39009972700	\$11,008	\$6,971	\$3	\$17,982
39009973300	\$11,781	\$6,118	\$2	\$17,901
39009973000	\$10,502	\$5,777	\$0	\$16,279
39009973101	\$9,492	\$6,726	\$0	\$16,218
39009973700	\$8,364	\$6,181	\$29	\$14,573
39009973902	\$7,351	\$5,059	\$0	\$12,409
39009973500	\$7,113	\$5,252	\$19	\$12,384
Grand Total	\$215,912	\$101,781	\$148	\$317,840

Source: FEMA National Risk Index

Future Trends

Land Use and Development Trends

Severe summer storms can occur anywhere, bringing an entire community or region to a standstill, including commuter and emergency transportation and medical services. Any development that has occurred since the adoption of the previous plan, and any future development, has the potential to be impacted by severe summer storms. All land uses are equally impacted by severe summer weather.

Building design and construction are also impacted by the intensity of summer storms. Areas prone to severe storms should have buildings designed to withstand high winds, heavy rainfall, and potential flooding to avoid structural damage. On the other hand, proper ventilation and cooling systems are essential to manage the heat and humidity that often accompany summer storms.

It is important to maintain consistency between emergency planning, financial plans and budgets, and development planning. Zoning codes should ensure that there is adequate greenspace in existing and new developments to foster drainage and provide space for water runoff. Locating emergency facilities, and partnering with emergency organizations during the planning process, will help develop improved contingency responses in cases where emergency transportation and services are cut off during an extreme weather event.

More buildings but less people can mean more property loss but less general population vulnerability. Buildings built with older roofs, or built not up to code are more susceptible to damage from hurricanes and strong winds.



Climate Change

Preliminary research suggests that the frequency and intensity of severe thunderstorms could increase as the climate changes, according to the National Climate Assessment. A warming climate may also increase the number of days with conditions conducive to a severe thunderstorm. Future modeling techniques could reveal additional information about the correlation between atmospheric changes and severe thunderstorm formation and intensity.



4.8 Severe Winter Weather

Description

Severe winter weather includes winter storms, heavy snow, and extreme cold. Winter storms including blizzards are events that have heavy snow, sleet, ice, freezing rain, or high winds as their primary type of precipitation. While the precipitation itself is typically not dangerous, frozen roads, and exposure to cold can cause death and injury.

A winter storm forms under the correct combination of three conditions:

1. Moisture is needed in the atmosphere to form clouds and precipitation. Air gathering evaporation as it blows across a body of water is a common source of moisture.
2. Lift pushes moist air up, causing it to cool and form clouds and precipitation. Warm air colliding with cold air and forced to rise over the cold is an example of lift.
3. Below freezing temperatures in the clouds and near the ground, are necessary to make snow and ice.

Winter storms are categorized by their type: blizzards, ice storms, lake effect storms, and snow squalls. Extreme cold events often accompany winter storms, bringing low temperatures and higher risks of frostbite and hypothermia.

- **Blizzards** are winter storms that are a combination of blowing snow and wind which lead to very low visibility. Heavy snowfalls and severe cold often accompany blizzards, but this is not required. Ground blizzards occur when strong winds pick up snow that has already fallen.
- **Ice Storms** occur when at least a quarter inch of ice accumulates on exposed surfaces. Roads and sidewalks can become dangerously slick, and trees and powerlines can easily break under the weight of accumulated ice.
- **Lake Effect Storms** are cold, dry air masses that move over the Great Lakes regions and drop the moisture as snow in the northeastern portion of Ohio near the Great Lakes area.
- **Snow Squalls** are brief, intense snow showers accompanied by strong winds. Impacts may be significant.
- **Extreme Cold Events** occur when temperatures drop below normal for the given area, and they generally coincide with winter storms or are the lasting effect of a winter storm.

Location

Winter storms are typically large events that impact large areas at once. Winter storms will impact the entire County and have the potential to impact multiple counties.

Extent

The State of Ohio Hazard Mitigation Plan 2024 lists winter storms as one of the three highest threat hazards in Ohio. The average annual snowfall in Athens County is 12-24 inches according to NOAA, which is less than the state average of about 27 inches. Snowfall typically occurs between November and April with January being the coldest month on average.

History

There have been at least 93 winter storm events in Athens County, including cold/wind chill, extreme cold/wind chill, frost/freeze, heavy snow, ice storm, winter storm, and winter weather since January 1995. These events caused \$287,000 in property damage and two deaths according to The National Centers for Environmental Information (NCEI). All severe winter weather and extreme cold events from January 1995 to December 2023 are summarized in **Table 4.8.1**, below:

**Table 4.8.1: Severe Winter Related Events in Athens County since 1995**

Severe Storm Event Type	Number of Events	Deaths	Injuries	Property Damage	Crop Damage
Cold/Wind Chill	21	0	0	\$2,000	\$0
Extreme Cold/Wind Chill	7	0	0	\$150,000	\$0
Frost/Freeze	4	0	0	\$0	\$0
Heavy Snow	23	0	0	\$50,000	\$0
Ice Storm	2	0	0	\$0	\$0
Winter Storm	14	0	0	\$85,000	\$0
Winter Weather	22	2	0	\$0	\$0
Grand Total	93	2	0	\$287,000	\$0

Source: NOAA Storm Events Database

Athens County had no disaster declarations or emergency declarations since the last hazard mitigation plan was completed in 2020. Before 2020, there were two major disaster declarations; one declaration was for severe winter storms, flooding, and mudslides and the other for severe winter storm and record/near record snow. Two deaths associated with winter weather and extreme cold/wind chill reported. Several of the most damaging events, events that resulted in deaths or injuries, and/or events with emergency or disaster declarations are described in more detail below.

Winter Weather Event on January 8, 2018:

A cold upper-level unstable air mass pulled moist warm air up from the Gulf of Mexico, creating a wintry mix of snow, sleet, and freezing rain that resulted in icy travel conditions and numerous traffic accidents. One such accident caused the death of a 56-year-old man from Georgia when his semi-truck slid off a bridge to the road below in Athens County. There were no reports of property damage because of this event.

Extreme Cold/Wind Chill and Winter Weather Event on January 6, 2014:

Morning temperatures in the 40s with rain plunged down to 5-10 below zero and wind chills of -25 degrees overnight when an Arctic cold front moved through southern Ohio. The area suffered power outages, frozen pipes, vehicle engine problems, and furnace issues due to the extreme cold wave as schools closed for the day. The weather caused the death of a woman in the Knollwood Trailer Park, southwest of Athens city, who had slipped on the ice several times, collapsed in a yard, and perished from exposure overnight. Additionally, \$100,000 dollars in property damage was reported for Athens County.

Major Disaster Declaration for Severe Winter Storms, Flooding, and Mudslides, December 22, 2004 - February 1, 2005:

A fast-moving low-pressure system descended from Canada moving southeast across the Ohio Valley and bringing snow and sleet to southern Ohio, which turned into freezing rain. Ice accumulated on surfaces to a quarter inch thick before the precipitation turned back to snow. Icy roads caused an Athens County dump truck to slip into a ditch while treating roads. A major disaster declaration (Dr-1580-OH) was declared on February 15, 2005. There were no reports of property damage, injuries, or deaths from this event. Athens County was eligible for both individual and public assistance due to the disaster declaration.



Major Disaster Declaration for Severe Winter Storm and Record/Near Record Snow, February 14, 2003 – March 18, 2003:

Abundant moisture from a warm front and low-pressure mixed with surface cold air resulting in 6-8 inches of snowfall across Ohio, with the highest accumulation along I-70. Several counties received record or near record snowfall, including in the southeast, where some areas received between 15-20 inches of snow over four days. In Athens County, Nelsonville received 16 inches, and the city of Athens went from no snow before the storm to 12 inches after the storm was over. A major disaster declaration (DR-1453-OH) was declared on March 14, 2003. No damage, injuries, or deaths were reported in Athens County from this event. Athens County was eligible for public assistance due to the disaster declaration.

Emergency Declaration for Blizzards Snowstorms, January 26, 1978:

The worst winter storm in Ohio's history struck before dawn on Thursday, January 26, 1978. The Blizzard of '78 raged through Thursday and into Friday, shutting down transportation, businesses, industries, and schools statewide for two days. Normal activities didn't resume for five days. The rapidly intensifying storm brought bitter cold air from the west, with winds reaching 50 to 70 miles per hour by Thursday morning. These conditions, combined with heavy snowfall and blowing snow already on the ground, created full blizzard conditions across Ohio. The blizzard first hit Cincinnati at 1:00 A.M., reached Dayton an hour later, Columbus and Toledo around 3:00 A.M., and extended northeast to Akron, Youngstown, and Cleveland by 7:00 A.M. on January 26. Prolonged blizzard conditions caused enormous snowdrifts, halting highway and rail transportation and isolating thousands of people. Air travel was suspended for two to three days due to low visibility and deep snowdrifts on runways. Ohio remained almost completely immobilized through Friday. An emergency declaration (EM-3055-OH) was declared on January 26, 1978, offering public assistance for every county in Ohio.

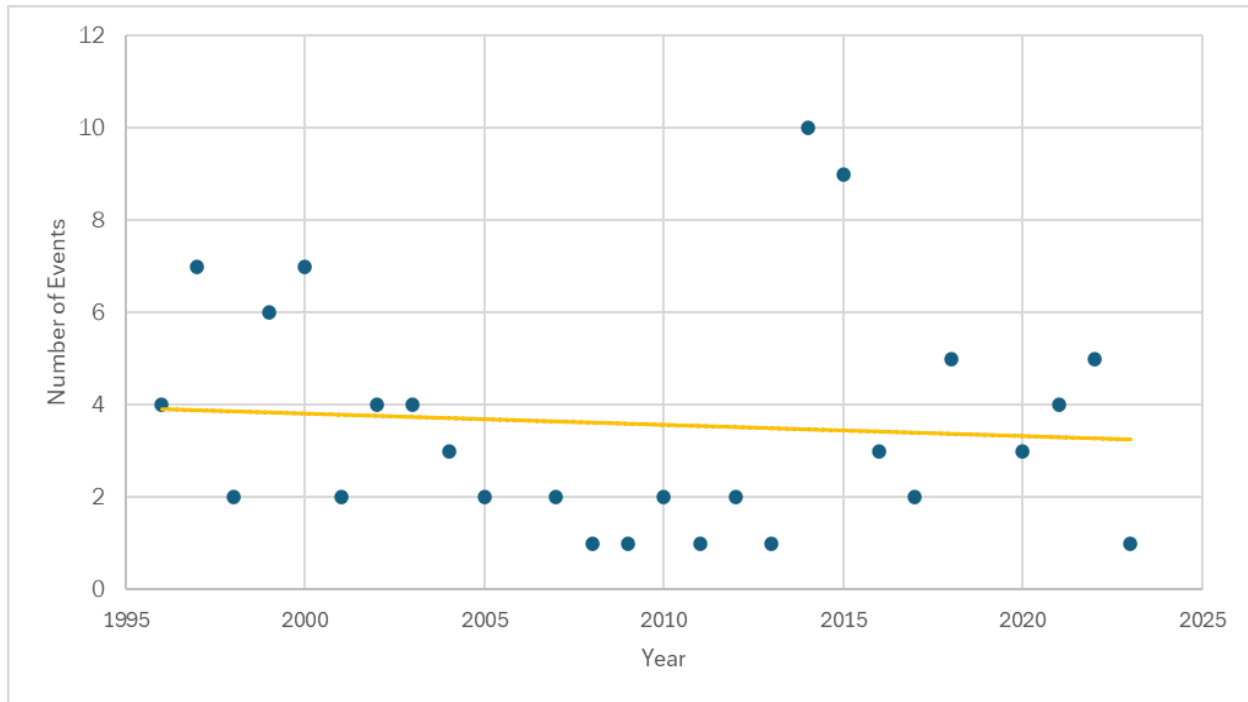
Emergency Declaration for Snowstorms, February 2, 1977:

An emergency declaration (EM-3029-OH) was declared on February 2, 1977, for snowstorms for every county withing Ohio. Athens county received public assistance.

Probability

According to the NCEI, there were 93 severe winter storm events resulting in \$287,000 in property damage reported in Athens County between January 1995 and December 2023. Spread out over that timeframe, there was an average of 3.2 events with \$9,897 in property damage annually. **Figure 4.8.2** shows the number of severe winter events since 1995 have decreased slightly in Athens County. According to the Fifth National Climate Assessment, due to the warming climate, extreme winter weather is expected to be less severe and less frequent in Ohio, and heavy snowfall will manifest as heavy rainfall in future years. The Climate Change section in Future Trends discusses climate change further.

Figure 4.8.2: Severe Winter Weather Probability



Source: NOAA NCEI

Vulnerability Assessment

Infrastructure Impact

Winter storms can cause damage to overhead utilities. Wires can collapse under the weight of accumulated snow and ice leading to disruption in communication and power supply for days. Debris can block roadways or damage property as tree limbs can also collapse under the weight of accumulated snow and ice. Water pipes can freeze under extremely low temperatures that may accompany severe winter storms. Roads and sidewalks can be blocked by the accumulation of snow, and can develop a layer of ice. Bridges and overpasses are particularly dangerous because they freeze before other surfaces and become slippery. Heavy snowfall and accumulation can cause business and private homes to have partial or full roof collapses. The State of Ohio Hazard Mitigation Plan 2024 estimates the annual probability of 2.5 severe winter storms annually for Athens County.

Population Impact

All residents of Athens County are expected to be affected by severe winter storms. Infants, older adults, people who are ill, and pets tend to be more vulnerable to injuries and health conditions related to exposure to heavy snow, ice, and lasting extreme cold temperatures. It is advisable to equip vulnerable populations with indoor easy-to-read thermometers and heating devices in locations where they are highly visible.

According to FEMA's National Risk Index, Athens County was scored a 42.7 or "very low" risk from the negative impacts of natural hazards, based on scores of relatively moderate social vulnerability, very low expected annual loss, and relatively moderate community resilience, compared to all other counties in the U.S. The risk for residents of Athens County for individual hazard events associated with severe winter weather are as follows: 30.5 ("very low") for cold wave, 87.4 ("relatively high") for ice storm, and 30.8 ("relatively low") for winter weather events. The index also calculates an expected annual loss to the County of \$2,805 due to cold wave, \$427,243 due to ice storm, and \$23,275 due to winter weather events, with 0.1, 0.7, and 2.2 events occurring per year, respectively.



Property Damage

Accumulated snow and ice, debris, and falling trees and utility poles can damage property. Extreme low temperatures can freeze the water in pipes and cause them to explode. All buildings in the County are exposed and vulnerable to winter storms. The State of Ohio Hazard Mitigation Plan 2024 estimates potential annual losses caused by winter storms in Athens County to be \$132,882.

Property owners should weatherproof their homes and buildings and conduct regular inspections to eliminate impacts from extreme weather conditions. The Federal Emergency Management Agency (FEMA) suggests that individuals with damaged property should contact their insurance company and take photos of any damage. If individuals are uninsured or underinsured, they should seek assistance by visiting www.DisasterAssistance.gov.

Loss of Life

There were no reported deaths in Athens County from severe winter events between January 1995 and December 2023. Most common causes of death from winter events are vehicular accidents from iced-over and dangerous roads, frostbite, or hypothermia from prolonged exposure to cold, heart attacks from heavy snow shoveling, and carbon monoxide poisoning due to toxic fumes from heating sources.

A few ways to prepare and protect from extreme winter weather conditions include, but are not limited to, staying indoors during dangerous cold events, dressing warmly when outside, staying off icy and dangerous roads, equipping vehicles with an emergency supply kit, preparing for power outages and using heating devices intended for indoor use only, staying updated about emergency information and alerts, seeking medical assistance on signs of hypothermia or frostbite, and checking on neighbors.

Economic Losses

Economic losses can occur from businesses shutting down for potentially long periods of time, structural damage, and death and injury. Economic activity can halt during winter storms including the transportation of goods and people. Electricity outages may lead to spoiled goods. Since winter storms occur during the winter season, damage to crops is unlikely but possible. Damaged buildings and pipes, fallen trees and power lines, and costs to repair damages and remove snow further impact the economy of cities and towns. Additionally, deaths and injuries can lead to economic losses for a community. **Tables 4.8.3-4.8.5** shows the total value of economic impacts expected in Athens County from winter weather events.

Expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case the census tracts for Athens County. Expected losses are assessed for buildings, population equivalence (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract. The tables below show the 15 census tracts in Athens County by order of the highest total EAL to the lowest for cold wave, ice storm, and winter weather events. The EAL Total column combines the buildings, population, and agricultural losses for each census tract.

Table 4.8.3: Structure and Population Vulnerability from Cold Wave

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973800	\$34	\$107	\$276	\$416
39009973700	\$19	\$86	\$201	\$306
39009973600	\$28	\$82	\$170	\$280
39009973500	\$16	\$73	\$131	\$220
39009973901	\$84	\$134	\$0	\$218



Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009972900	\$45	\$125	\$26	\$196
39009972800	\$39	\$82	\$56	\$176
39009973400	\$43	\$68	\$44	\$156
39009973200	\$32	\$99	\$21	\$153
39009972600	\$28	\$88	\$13	\$129
39009973300	\$27	\$85	\$14	\$126
39009972700	\$21	\$79	\$20	\$119
39009973101	\$22	\$94	\$0	\$116
39009973000	\$24	\$80	\$0	\$105
39009973902	\$17	\$70	\$0	\$87
Grand Total	\$480	\$1,353	\$972	\$2,805

Source: FEMA National Risk Index

Table 4.8.4: Structure and Population Vulnerability from Ice Storm

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$2,060	\$67,906	\$0	\$0
39009972800	\$1,678	\$42,019	\$0	\$0
39009972900	\$1,949	\$37,732	\$0	\$0
39009973400	\$1,051	\$35,076	\$0	\$0
39009973800	\$2,005	\$33,878	\$0	\$0
39009972600	\$1,689	\$29,425	\$0	\$0
39009973200	\$1,574	\$27,143	\$0	\$0
39009973600	\$1,262	\$23,396	\$0	\$0
39009972700	\$1,593	\$23,127	\$0	\$0
39009973300	\$1,306	\$22,788	\$0	\$0
39009973000	\$1,233	\$20,382	\$0	\$0
39009973101	\$1,436	\$18,744	\$0	\$0
39009973700	\$1,319	\$16,571	\$0	\$0
39009973500	\$1,165	\$14,572	\$0	\$0
39009973902	\$1,080	\$14,484	\$0	\$0
Grand Total	\$22,398	\$427,243	\$0	\$0

Source: FEMA National Risk Index


Table 4.8.5: Structure and Population Vulnerability from Winter Weather

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$2,103	\$1,116	\$0	\$3,218
39009972900	\$1,126	\$1,041	\$0	\$2,166
39009973800	\$844	\$887	\$0	\$1,731
39009973400	\$1,086	\$568	\$0	\$1,654
39009972800	\$966	\$682	\$0	\$1,648
39009973200	\$801	\$825	\$0	\$1,627
39009972600	\$705	\$728	\$0	\$1,433
39009973300	\$686	\$707	\$0	\$1,393
39009973600	\$707	\$684	\$0	\$1,391
39009973101	\$553	\$778	\$0	\$1,330
39009973000	\$611	\$668	\$0	\$1,279
39009973700	\$487	\$715	\$0	\$1,202
39009972700	\$519	\$655	\$0	\$1,174
39009973500	\$412	\$603	\$0	\$1,015
39009973902	\$428	\$585	\$0	\$1,013
Grand Total	\$12,033	\$11,242	\$1	\$23,275

Source: FEMA National Risk Index

Future Trend

Land Use and Development Trends

Winter storms can occur anywhere bringing an entire community or region to a standstill, including commuter and emergency transportation and medical services. Any development that has occurred since the adoption of the previous plan, and any future development, has the potential to be impacted by winter storms. All land uses are equally impacted by severe winter weather.

Building design and construction is also impacted by the amount of snowfall. Areas that receive high snowfall should have buildings designed to withstand the weight of the snow to avoid sagging, cracking, and collapsing roofs. On the other hand, snow is a natural insulator, and snow accumulated on rooftops helps hold heat in buildings and, consequently, reduces heating costs.

It is important to maintain consistency between emergency planning, financial plans and budgets, and development planning. Zoning codes should ensure that there is adequate greenspace in existing and new developments to foster drainage and offers space to pile cleared snow. Locating emergency facilities, and partnering with emergency organizations during the planning process, will help develop improved contingency responses in cases where emergency transportation and services are cut off during an extreme weather event.



Climate Change

According to the Midwest chapter of the Fourth National Climate Assessment, the average Midwest air temperature increased by more than 1.5 degrees Fahrenheit between 1900 and 2010. In recent years, however, warming has increased three times as quickly between 1980 and 2010. By the end of 2030, Ohio's climate may trend towards the climate of Southern Illinois. By 2100, Ohio might feel like Arkansas or Texas. As a result, the warming climate suggests that extreme winter weather will be less severe and less frequent in Ohio, and heavy snowfall will manifest as heavy rainfall in future years.



4.9 Tornadoes

Description

FEMA defines a tornado as “a violently rotating column of air extending from a thunderstorm to the ground.” Tornadoes can generate wind speeds greater than 250 miles per hour. Tornado paths can be as large as one mile wide and 50 miles long. Nationally, there is an average of 800 tornadoes reported annually across all 50 states.

In general, the midsection of the United States experiences a higher rate of tornadoes than other parts of the country because of the recurrent collision of moist, warm air moving north from the Gulf of Mexico with colder fronts moving east from the Rocky Mountains. Supercells, which form from rotating thunderstorms, are the most destructive type of tornado.

Tornado Warnings are issued by the Charleston, West Virginia, Forecast Office when a tornado is indicated by the WSR-88D radar or sighted in person by spotters. The WSR-88D radar is an advanced Weather Surveillance Doppler Radar utilized by the NWS to generate a radar image. Once a warning has been issued, people in the warning area should seek shelter immediately. Warnings will include the location of the tornado, as well as the communities in its path. A tornado warning can be issued without a tornado watch, and they are typically issued for 30 minutes at a time. If the supercell thunderstorm responsible for the formation of the tornado is also producing large volumes of rain, the tornado warning may be combined with a Flash Flood Warning. The NWS Office will follow up any Tornado Warnings with Severe Weather Statements to provide up-to-date information on the tornado and inform the public when the warning is no longer in effect (Source: NWS).

Location

Tornadoes can occur anywhere in Athens County. All areas and jurisdictions should be considered at risk for a tornado.

Extent

Tornadoes are measured by the amount of damage caused by a certain wind speed, assuming greater wind speeds will result in greater damage. The original Fujita Tornado Damage Scale (F-scale) was developed in 1971 without much consideration to a building or structure’s integrity or condition as it relates to the wind speed required to damage it. The Enhanced Fujita-scale (EF-Scale) took effect on February 1, 2007. This scale retains with the original F-scale’s F0 through F5 wind ratings and classifies tornado damage across 28 different types of damage indicators. These indicators mostly involve building/structure type and are assessed at eight damage levels from 1 through 8. Therefore, construction types and their relative strengths and weaknesses are incorporated into the EF classification given to a particular tornado. The most intense damage along with the type of construction affected within the tornado path will generally determine the EF scale rating given to the tornado. **Table 4.9.1** lists the classifications under the EF- and F-scale. It should be noted that the wind speeds listed in this table are estimates based on damage rather than actual measurements.

Neither NOAA or NWS have re-evaluated the historical tornado data using the enhanced scale; therefore, this assessment and subsequent plans will reference both scales until a complete switchover has occurred.

Figure 4.9.2 simulates an extremely destructive, worst-case scenario EF5 tornado and its impacts on Athens County assets and infrastructure. The worst-case scenario is simulated by running the EF5 tornado on a straight path through the most populated areas of the County to determine maximum potential damage and identify the County’s potential vulnerability to tornadoes (**Table 4.9.3**).

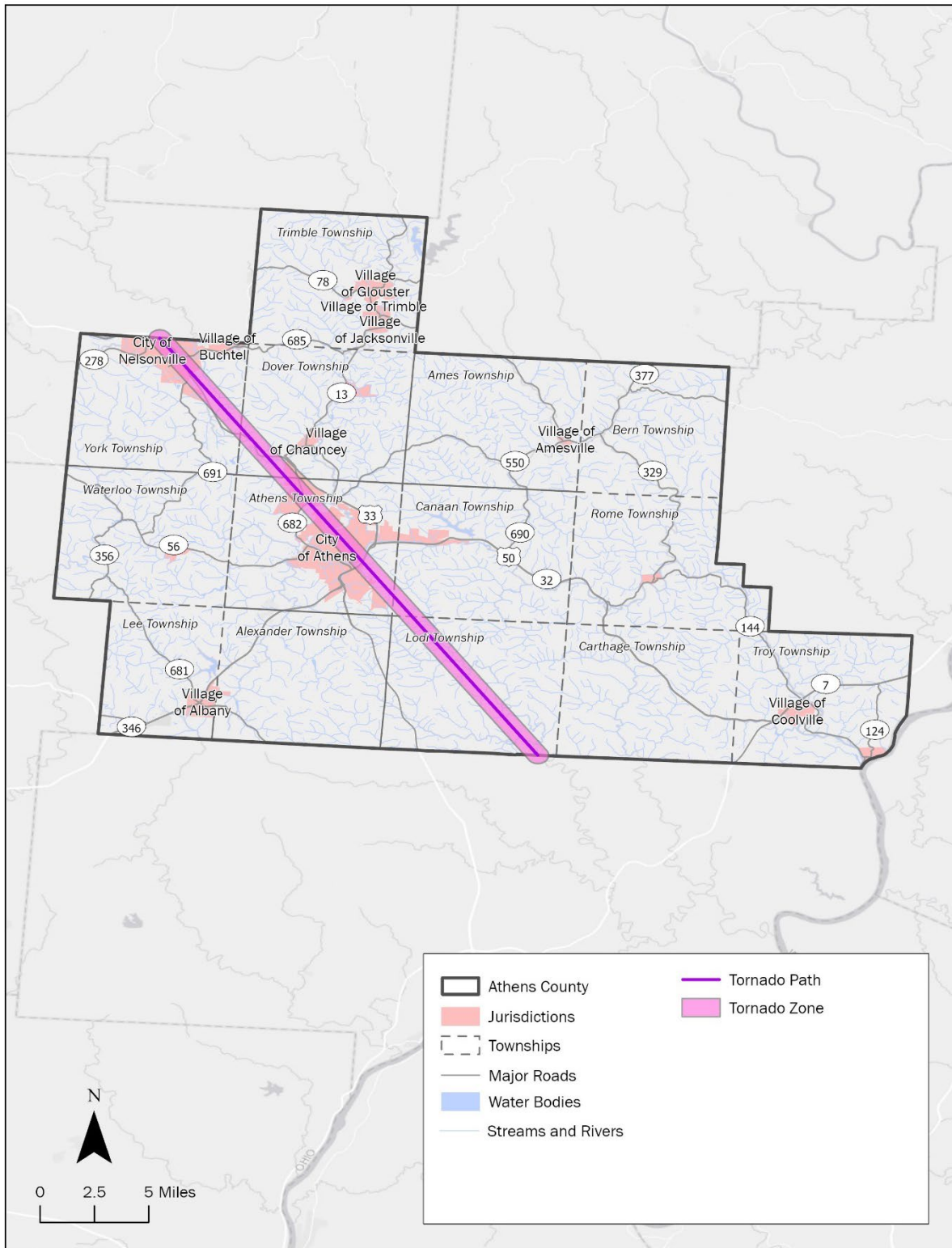


Table 4.9.1: Fujita and Enhanced Fujita Scale Classifications

Fujita Scale 3-Second Wind Gust (MPH)		Damage Levels	Enhanced Fujita Scale 3-Second Wind Gust (MPH)	
F0	45-78	Light Damage: Tree branches down.	EF-0	65-85
F1	79-117	Moderate damage: Roof damage.	EF-1	86-110
F2	118-161	Considerable damage: Houses damaged.	EF-2	111-135
F3	162-209	Severe damage: Buildings damaged.	EF-3	136-165
F4	210-261	Devastating damage: Structures leveled.	EF-4	166-200
F5	262-317	Incredible damage: Whole towns destroyed.	EF-5	Over 200

Source: SOHMP

Figure 4.9.2: Worst Case Tornado Scenario





History

There have been four tornado events in Athens County between January 1995 and December 2023 and no major disaster or emergency declarations for those events. The tornadoes caused an estimated \$770,000 in property damage and seven injuries were reported from one storm. Average annual damages from 1995 to 2023 are estimated at \$26,552 in property damage. Several of the most damaging events, events that resulted in deaths and/or injuries, and events with emergency or disaster declarations are described in more detail below.

F1 Tornado in Athens County, August 12, 2023:

The combination of a cold front and hot and muggy conditions led to severe storms. One storm produced a tornado with maximum winds at 100 MPH created a damage path of just over two miles through the County before lifting back into the clouds. Damage was limited to trees and powerlines that had been uprooted and snapped. No deaths or injuries were reported as a result of this event. Property damage totaled \$10,000.

F0 Tornado in Athens County, October 28, 2018:

A low pressure system coming across the pushed a cold front through the middle of the Ohio River Valley creating thunderstorms and supercell thunderstorms, resulting in hail, strong wind gusts and one weak tornado with maximum wind speed of 55 MPH. The tornado touched down along Cullison Road in Nelsonville, throwing a trampoline into the powerlines. Along Kimberly Road trees were uprooted or snapped, with one falling onto the roof of a house. A metal carport was tossed into the woods. No deaths or injuries were reported as a result of this event. Property damage totaled \$10,000.

F2 Tornado in Athens County, September 16, 2010:

A severe weather outbreak, associated with a warm front, resulted in showers and thunderstorms across southeast Ohio into extreme western West Virginia. Several severe supercell thunderstorms exhibited strong rotation and spawned five tornadoes, four of which in Ohio and one in western Athens County. Wind gusts were estimated at 120 to 130 MPH. Damage along the tornado path was concentrated along Matheny Road and SR-691 outside of Nelsonville. Several poorly anchored mobile homes were completely destroyed, along with 13 homes. Many other homes sustained damage. Trees were uprooted or their trunks snapped in half. At a farm several cows and an 1800 LBS hay bale were lifted into the air. Seven people were injured. No deaths were reported. Overall, the tornado caused \$750,000 in property damage.

Probability

There were four tornado events in Athens County between January 1995 and December 2023 resulting in a total of \$770,000 in property damage. Spread out over the 29 years, there were 0.14 tornadoes on average per year, with \$26,552 average annual property damage.

Although it is difficult to predict future tornado activity, a study completed in 2018 on spatial trends of tornadoes saw an eastward shift in tornado frequency. Two other studies (2015 and 2016) showed an increase in tornado frequency in the eastern United States and a decrease in tornado activity in central United States. The study published in 2016 on spatial redistribution of tornado activity stated that there is a documented increase in hazardous conductive weather (HCW) in the lower Ohio valley regions. The studies do note that the number of tornadoes produced from a single storm are increasing. For instance, in 2020 there were 20 documented tornadoes in Ohio, seven from one storm and five from another.



Vulnerability Assessment

Infrastructure Impact

Above-ground infrastructure can be damaged by tornadoes. Debris lofted airborne by tornadoes as well as fallen trees can cause damage to buildings and infrastructure and lead to road closures. Above ground utility infrastructure can be damaged or destroyed, which can cause service outages.

Population Impact

Tornadoes are random in nature and have the potential to occur anywhere in the County. Everyone within the County should be prepared for a tornado. Residents in mobile home parks are particularly vulnerable and should have a plan in place.

According to FEMA's National Risk Index, Athens County was scored a 42.7 ("very low") risk from the negative impacts of all natural hazards based on an overall relatively moderate social vulnerability, relatively moderate community resilience, and very low expected annual loss, compared to all other counties in the U.S. For tornadoes specifically, Athens County scored a 37.0 ("relatively low") risk rating compared with the rest of the U.S., with an expected annual population loss (EAL) value of \$174,714 (for deaths and injuries) based on historical losses.

Property Damage

Tornadoes that have occurred in Athens County were typically weaker, rated EF-2 or lower; however, even weaker tornadoes can cause significant damage to property. In the last 29 years the property damage in Athens County has included homes, mobile homes, roofs, windows, siding, powerlines, and tree damage. One of the four tornadoes that occurred in Athens County from January 1995 to December 2023 resulted in over \$750,000 in property damage, and two others caused \$10,000 each.

Loss of Life

There have been no reported deaths as a result of tornadoes in Athens County since 1995, however there have several reports of injuries. Loss of life and injuries are always possible during tornadoes. Falling debris is the main the cause of death in a tornado, along with becoming airborne.

Economic Losses

Tornadoes can cause major damage to structures and roads. Higher severity tornadoes have the potential to destroy structures. Debris also has the potential to cause damage to structures by breaking windows, damaging walls, or falling directly onto buildings and above-ground infrastructure. Potential economic losses and damage associated with Athens County for tornadoes are recorded in **Table 4.9.3** below.

This table summarizes the expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case the census tracts for Athens County. Expected losses are assessed for buildings, population equivalence (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract. The tables below show the 15 census tracts in Athens County by order of the highest total EAL to the lowest for tornadoes. The EAL Total column combines the buildings, population, and agricultural losses for each census tract.

Table 4.9.3: Structure and Population Vulnerability from Tornadoes

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973901	\$68,529	\$15,332	\$0	\$83,860
39009972800	\$51,528	\$15,309	\$4	\$66,841



Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973800	\$37,234	\$16,764	\$22	\$54,020
39009972900	\$37,642	\$14,645	\$2	\$52,289
39009972700	\$28,335	\$15,074	\$1	\$43,411
39009973400	\$35,430	\$7,828	\$2	\$43,261
39009972600	\$28,335	\$12,334	\$1	\$40,670
39009973200	\$26,974	\$11,969	\$2	\$38,945
39009973600	\$23,041	\$9,397	\$11	\$32,449
39009973300	\$22,366	\$9,722	\$1	\$32,089
39009973000	\$19,930	\$9,177	\$0	\$29,107
39009973101	\$18,013	\$10,685	\$0	\$28,698
39009973700	\$15,889	\$9,826	\$13	\$25,728
39009973500	\$13,878	\$8,614	\$12	\$22,505
39009973902	\$13,950	\$8,036	\$0	\$21,986
Total	\$441,075	\$174,714	\$72	\$615,860

Source: FEMA National Risk Index

Future Trends

Land Use and Development Trends

Tornadoes can occur anywhere. Any development that has occurred since the previous plan and any future development has the potential to be impacted by tornadoes. While the location of development will not be impacted by tornadoes, shelters should be installed in high occupancy buildings, parks, fairs and festivals, mobile home parks, and similar developments.

The vulnerability of structures and populations to tornado damage is related to the number and age of buildings and population density, such that older buildings with more people increases the vulnerability, and fewer buildings and people reduces vulnerability. Much of Athens County is nonresidential including forest, cropland and pasture, with only 8.96 percent either residential or industrial / commercial, reducing the risk of much of the County to tornado damage.

Climate Change

While rainfall, heat, and drought have clear links to climate change, the link between climate change and tornadoes is not yet fully understood. Tornado records in the United States typically only go back as far as the 1950s, making it difficult to compare trends over long periods of time. Additionally, tornado reporting was not fully standardized until 2007, when the Enhanced Fujita Scale was released.

However, some short trends have been identified, although not yet linked directly to climate change. The number of days with tornadoes in the United States has fallen, but tornado outbreaks, or the number of tornadoes in one day, have increased. The intensity and strength of tornadoes has also increased as tornado distribution has shifted eastwards, increasing tornado risk for Ohio (Center for Climate and Energy Solutions).



According to the Fifth National Climate Assessment, severe storms are brief and cover small areas, thus the effects of climate change on severe storms are difficult to measure. Research suggests tornado activity has become more variable, with a decrease in the number of days per year with tornadoes but an increase in the number of tornadoes that occur on these days. In general, there is some indication that the frequency and intensity of thunderstorms will increase in a warming climate.



4.10 Wildfire

Description

A wildfire is an uncontrolled fire that burns in a natural area of combustible vegetation such as a forest, grassland, or prairie, and typically occurs in rural areas. Non-wilderness fires are uncontrolled burning in residential or commercial development that are out of the scope of this plan. However, it is important to note that non-wilderness fires often accidentally cause wildfires. They can happen at any time or place, and more than half of the wildfires recorded have been started due to human activity. While wildfires can be caused by human activity or a natural phenomenon such as lightning, it is often the weather conditions that determine how much a wildfire grows.

Location

According to the State of Ohio Hazard Mitigation Plan (SOHMP), Athens County is in Region 3, and within the Ohio Department of Natural Resources (ODNR) Division of Forestry's Forest Fire Protection Area. Counties in this region tend to have abundant forest lands and grasslands. Region 3 is not as flat as western Ohio, having more ridges and hollows, which contributes to the more complex wildfire behavior. Wildfire spreads faster up slope because the fire dries out the vegetation uphill from the fire, allowing it to ignite more quickly, and increasing both the spread and speed of a fire. Similarly, areas exposed to wind and sun will dry out more quickly, like open areas and south facing slopes, increasing their susceptibility to wildfire. North facing slopes and heavily shaded areas are typically lower risk for wildfire, but during drought these areas will also burn. Athens County's rugged slopes and valleys represent the type of landscapes that support rapid and intense fires.

The ODNR requires wildfire data from fire departments by all counties within the region. The Ohio Wildfire Protection Areas are shown in **Figure 4.10.1**.

Extent

Several factors can contribute to the escalation of risk for wildfires, including the prevalence of forests and agricultural lands and their proximity to homes, residences, and structures, as well as the distance between fire and emergency management services. In these cases, the presence of fire near structures causes fire departments to shift focus away from fire suppression and toward structure protection.

According to the SOHMP, 99.9 percent of wildfires in Ohio are caused by human action or accident. As such, many wildfires in Ohio burn in proximity to homes and structures. From 2018 to 2022, the main causes of wildfires in Ohio included debris burning, incendiary (arson), equipment, smoking, campfires, children (playing with matches), lightning, and railroad.

History

The SOHMP identifies 98 total fire events from 2018 to 2022, with an average of 4.57 acres burned per incident. These events burned a total of 448 acres. There were 22 structures damaged during the wildfire events and five injuries were reported.

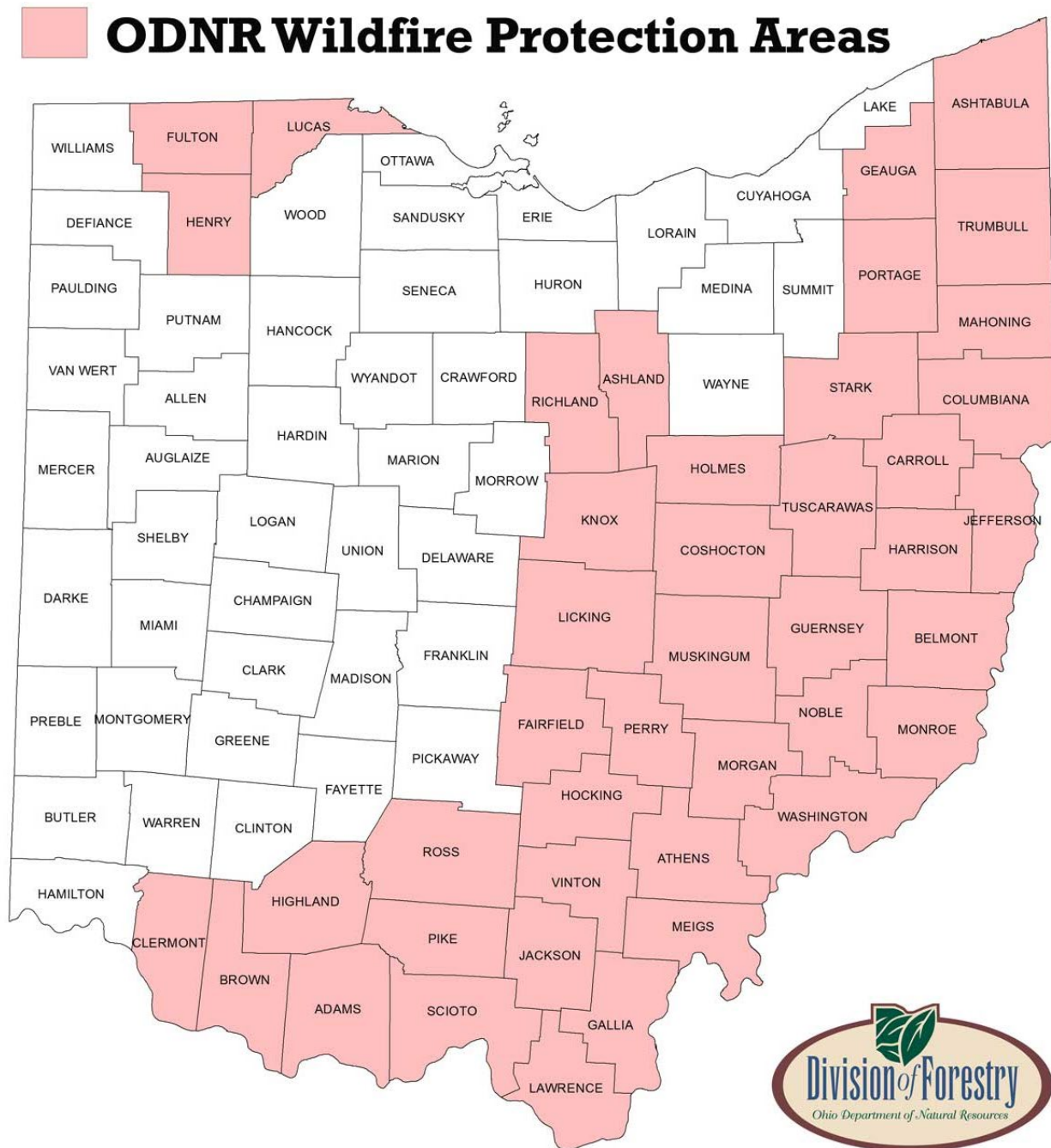
Estimating the monetary losses associated with wildfires is difficult because most of these events occur on open land or fields with monetary losses often not being recorded. This lack of data may result in inconsistencies if an analysis was done based on reported monetary loss. As such, acres burned per fire event is a more consistent method of analysis for this hazard.

Probability

According to the State of Ohio Hazard Mitigation Plan, there is a 100 percent probability that a wildfire will occur within any county in any given year. Based on the reported 69 fire events in Ross County from 2018 to 2022, an average of approximately 13.8 fire events is estimated to occur annually in the County. In addition, according to the U.S. EPA, the average total area burned by wildfires has increased

since the 1980s, and the record-breaking fires tend to occur during record-breaking warm years. The Climate Change section in Future Trends discusses climate change further.

Figure 4.10.1: Ohio Wildfire Protection Areas



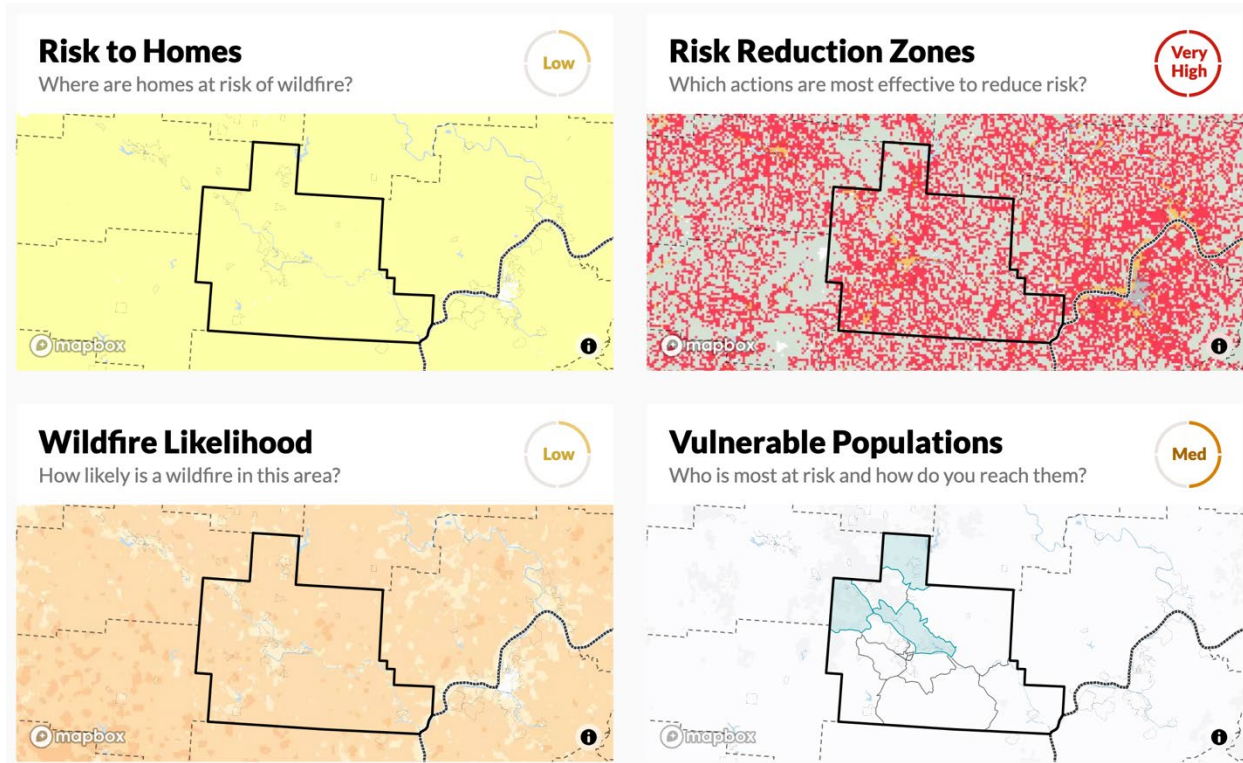
Source: ODNR Ohio Division of Forestry

Vulnerability Assessment

Infrastructure Impact

According to the USDA Forest Service Wildfire Risk to Communities, a free website with interactive maps and charts, Athens County has a low risk of wildfire damage to homes (Figure 4.10.2).

Figure 4.10.2: Wildfire Risk for Athens County



Source: USDA Forest Wildfire Risk to Communities

Population Impact

If a wildfire occurs within the County, the entire population could be impacted by the loss of homes, infrastructure, and crops. Large portions of Athens County are used for agriculture, increasing the risk of economic loss to farms in spring, fall, and during drought. A growth in the number of houses in forested areas is expanding the Wildland Urban Interface (WUI), putting more structures within areas of continuous vegetation and increasing the potential for loss. Furthermore, some residents may be more vulnerable because they tend to experience more difficulty preparing for, responding to, and recovering from wildfire. The Vulnerable Populations map in Figure 4.10.2 identifies areas that have a greater risk (medium) to wildfire because of the number of residents who live in mobile homes, are in poverty, and have no car is above the local median.

According to the National Risk Index, calculated by FEMA, Athens County's risk score for wildfires is 30.5 ("very low") compared to all other U.S. counties, based on its relatively moderate social vulnerability and community resilience, and very low expected annual loss. The index indicates an expected annual loss of \$11,157 due to wildfires with a less than 0.001 percent chance of a wildfire event occurring per year.

Property Damage

There were 69 recorded wildfire events between 2018 and 2022 in Athens County, and 22 structures reported at risk, but none were damaged due to the wildfires. It is assumed that the County has



experienced some crop damage because of wildfires, however that data was not available. Occasionally, in the event of a wildfire, fire engines belonging to local fire departments can be damaged while suppressing wildfires, although there are no reports of this in Athens County. Potential economic losses and damage associated with Athens County for wildfires are recorded in **Table 4.10.3** below.

This table summarizes the expected annual loss (EAL) rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case the census tracts for Athens County. Expected losses are assessed for buildings, population equivalence (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract. The tables below show the 15 census tracts in Athens County by order of the highest total EAL to the lowest for wildfire. The EAL Total column combines the buildings, population, and agricultural losses for each census tract.

Table 4.10.3: Structure and Population Vulnerability from Wildfire

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39009973600	\$1,701	\$168	\$0	\$1,869
39009973400	\$1,507	\$61	\$0	\$1,568
39009972800	\$1,090	\$84	\$0	\$1,174
39009973300	\$950	\$86	\$0	\$1,036
39009972900	\$943	\$72	\$0	\$1,016
39009972600	\$784	\$97	\$0	\$880
39009973500	\$594	\$104	\$0	\$698
39009973700	\$568	\$88	\$0	\$656
39009973800	\$569	\$85	\$0	\$653
39009972700	\$552	\$73	\$0	\$625
39009973200	\$394	\$38	\$0	\$432
39009973000	\$257	\$26	\$0	\$283
39009973101	\$147	\$5	\$0	\$152
39009973902	\$78	\$13	\$0	\$91
39009973901	\$20	\$4	\$0	\$23
Grand Total	\$10,152	\$1,004	\$0	\$11,157

Source: FEMA National Risk Index

Loss of Life

Athens County has no recorded wildfire-related loss of life or injuries. Injuries caused by wildfires are not widely publicized, so information is limited. With any wildfire event, there is potential for loss of life. Advanced evacuation warnings can reduce the likelihood of death because of wildfires.

Economic Losses

According to the SOHMP, there are 11 state-owned or state-leased community lifelines (critical facilities) with a very low hazard risk, and 24 with a relatively low risk. These facilities have a total



replacement cost of \$53,251,614. No state-owned or state-leased critical facilities were considered to have a relatively moderate, relatively high, or very high-risk rating to wildfires.

Future Trends

Land Use and Development Trends

Communities should monitor areas that are especially susceptible to wildfires and avoid development in such areas. Slight increase in forested and pasture/hay areas can mean slightly more vulnerability to wildfire. Newer structures are being built in rural and wooded lots, expanding the WUI in the County, resulting in increased vulnerability to the structures and inhabitants. New developments in these areas should implement fire protective measures; however, the County hasn't implemented building codes that specifically address wildfire for either incorporated or unincorporated buildings or homes. Additionally, a rise in oil and gas infrastructure in the County further adds to the number of high value infrastructure at risk from wildfire.

Figures 1.2.1 and 1.2.2 in Chapter 1 show areas susceptible to drought and heatwaves. New construction should reference the figures and resources outlined in this plan in order to minimize risk of drought and heatwaves, which can increase wildfire spread.

Climate Change

According to the U.S. EPA and National Climate Assessment, the national average total area burned by wildfires has increased since the 1980's, and the record-breaking fires tend to occur during record-breaking warm years. Combustion from wildfires also releases carbon dioxide into the atmosphere, contributing to climate change and negatively impacting human health. If climate change increases the frequency and intensity of drought in the region, then the risk of wildfire can also increase.

5 | Hazard Mitigation Analysis



5.1 Hazard Mitigation Strategy

Hazard Priorities

Potential hazards, including natural, geological, and human-caused hazards, were rated by members of the Core Planning Committee, which included representatives from each jurisdiction in Williams County. Each potential hazard was rated on a scale of zero to five, with zero indicating the hazard should not be studied and five indicating the most significant threat to the representative's jurisdiction. A priority score was developed for each hazard by averaging the representatives' ratings. The hazards were then ranked by their priority score, where the highest priority score was given a hazard rank of one for each jurisdiction within the county and the county. The resulting hazard rank and associated priority score for each hazard are shown in **Table 5.1.1 – Table 5.1.9**.

Table 5.1.1: Athens County Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Flooding	4.40	2
Severe Summer Weather	3.90	3
Severe Winter Weather	3.80	4
Drought	3.50	5
Tornadoes	3.50	6
Wildfire	3.30	7
Landslides and Land Subsidence	2.80	8
Dam/Levee Failure	2.20	9
Invasive Species	2.20	10
Earthquakes	1.50	11

Table 5.1.2: City of Athens Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Flooding	5.00	2
Severe Winter Weather	4.33	3
Severe Summer Weather	4.00	4
Tornadoes	4.00	5
Dam/Levee Failure	3.33	6
Landslides and Land Subsidence	3.33	7
Wildfire	3.00	8
Drought	2.33	9
Invasive Species	2.33	10
Earthquakes	2.00	11


Table 5.1.3: Village of Albany Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Drought	4.00	2
Severe Winter Weather	4.00	2
Landslides and Land Subsidence	3.00	3
Severe Summer Weather	3.00	4
Tornadoes	3.00	5
Wildfire	3.00	6
Earthquakes	2.00	7
Flooding	2.00	8
Invasive Species	2.00	9
Dam/Levee Failure	1.00	10

Table 5.1.4: Village of Amesville Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Invasive Species	4.00	2
Flooding	3.50	3
Drought	2.50	4
Landslides and Land Subsidence	2.50	5
Tornadoes	2.50	6
Severe Winter Weather	2.00	7
Wildfire	2.00	8
Severe Summer Weather	1.50	9
Dam/Levee Failure	0.50	10
Earthquakes	0.50	11

Table 5.1.5: Village of Chauncey Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Flooding	5.00	2
Severe Summer Weather	3.00	3
Severe Winter Weather	3.00	4
Drought	2.00	5



Hazard	Priority Score	Hazard Rank
Tornadoes	2.00	6
Wildfire	2.00	7
Earthquakes	1.00	8
Invasive Species	1.00	9
Landslides and Land Subsidence	1.00	10
Dam/Levee Failure	Do Not Include	

Table 5.1.6: Village of Coolville Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Drought	4.00	2
Flooding	3.00	3
Landslides and Land Subsidence	3.00	4
Severe Summer Weather	3.00	5
Severe Winter Weather	3.00	6
Tornadoes	3.00	7
Earthquakes	1.00	8
Invasive Species	1.00	9
Wildfire	1.00	10
Dam/Levee Failure	Do Not Include	

Table 5.1.7: Village of Glouster Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Dam/Levee Failure	5.00	2
Flooding	5.00	3
Severe Summer Weather	4.00	4
Severe Winter Weather	4.00	5
Drought	3.00	6
Landslides and Land Subsidence	3.00	7
Wildfire	3.00	8
Tornadoes	2.00	9
Earthquakes	1.00	10
Invasive Species	1.00	11



Table 5.1.8: Village of Jacksonville Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Flooding	5.00	2
Tornadoes	5.00	3
Wildfire	5.00	4
Severe Summer Weather	4.00	5
Severe Winter Weather	4.00	6
Landslides and Land Subsidence	3.00	7
Dam/Levee Failure	2.00	8
Drought	2.00	9
Invasive Species	2.00	10
Earthquakes	Do Not Include	

Table 5.1.9: Village of Trimble Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards	5.00	1
Drought	5.00	2
Flooding	5.00	3
Severe Summer Weather	5.00	4
Landslides and Land Subsidence	4.00	5
Severe Winter Weather	4.00	6
Wildfire	4.00	7
Tornadoes	3.00	8
Dam/Levee Failure	2.00	9
Earthquakes	1.00	10
Invasive Species	1.00	11

Hazards Not Assessed

Below is a discussion covering hazards that were not included in this Plan update, as compared to the hazards included in the SOHMP and in Athens County's previous 2020 HMP.

Coastal Erosion

Coastal erosion is a hazard that is not applicable to Athens County due to the County's inland location, so it was not assessed.

Dam/Levee Failure

The Village of Coolville is not affected by dam/levee failures and has opted to not include any mitigation actions for the hazard.



Earthquakes

The Village of Jacksonville is not affected by earthquakes and has opted to not include any mitigation actions for the hazard.

Hurricanes/Tropical Storms

Hurricanes/tropical storms are hazards that are not directly applicable to Athens County due to the County's inland location, so they were not assessed. However, if remnants of hurricanes or tropical storms were experienced as thunderstorms, thunderstorm winds, or high/severe winds, those events were included in the severe summer storms and/or tornado assessments.

Seiche/Coastal Flooding

Seiche/coastal flooding is a hazard that is not applicable to Athens County due to the County's inland location, so it was not assessed.

5.2 Hazard Mitigation Goals

Developing achievable goals forms the foundation for all mitigation actions and activities that will aid Athens County in attaining the overall mission of the Core Planning Committee. As such, the Core Planning Committee and participating jurisdictions assessed the goals of the 2020 Hazard Mitigation Plan and updated them for this Plan update. Goals were established and reviewed based upon their relationship to the hazard priorities and potential adverse impact of those hazards upon the community. The goals, as well as the hazards assessed for this Plan, informed the development of actions that the County and participating jurisdictions can take to mitigate the impacts of the hazards. The goals of the Athens County Hazard Mitigation Plan are as follows:

- Goal 1: Facilitate and coordinate solutions to multi-jurisdictional issues that involve government, citizens, stakeholders, and policymakers at all levels.
- Goal 2: Minimize human, economic, and environmental disruption from natural hazards.
- Goal 3: Educate and encourage property owners to take action to decrease their vulnerability to the impacts of natural hazards.
- Goal 4: Improve the disaster resistance of existing buildings, structures, critical facilities, as well as infrastructure whether new construction, expansion, or renovation.
- Goal 5: Encourage hazard mitigation planning and incorporate that planning into other related plans.
- Goal 6: Hazard Mitigation Actions & Priorities.

Members of the Core Planning Committee completed a Previous Mitigation Action Status survey, which indicated the status of mitigation actions included in the 2020 Hazard Mitigation Plan. This survey asked representatives to indicate whether the mitigation actions from the previous plan were completed, deleted, deferred, unchanged, or ongoing. It also asked the representative if the mitigation action should be included in this Plan update. The results are included in **Appendix B**. In addition, new mitigation actions were developed and considered for inclusion in this Plan update that address gaps in the previous plan or new issues that have arisen since the 2020 Plan.

All new and previous mitigation actions were reviewed and rated by members of the Core Planning Committee and local jurisdictions based on five criteria: cost-effectiveness, technical feasibility, environmentally soundness, immediate need, and total risk reduction. For each action, each of the five criteria were rated on a scale of one to five (low to high). All the surveys were collected and the individual criteria for each mitigation action were averaged and then added together to develop a single raw score for each individual mitigation action per jurisdiction. The raw score for each action



was used in combination with the rankings of the associated hazard, as determined by the Hazard Priority Survey (**Tables 5.1.1 – 5.1.9**), to develop a score for each mitigation action. The action scores were then ranked to indicate the priority of each specific action. The action with the highest action score was given an action priority of one, indicating that action was the highest priority. Hazard Mitigation Action priorities are organized by hazard in **Table 5.2.1 – Table 5.2.9**. Each table is specific to the jurisdiction or county. The information used to develop the priorities from the jurisdictions surveys and comments can be found in **Appendix G**, along with all completed surveys that were used to prioritize the hazards and develop the goals.

Mitigation projects will only be implemented if the benefits outweigh the associated cost of the proposed project. The Core Planning Committee, in coordination with the Williams County EMA, performed a general assessment of each action that would require FEMA funding as part of the planning process. A detailed cost-benefit analysis of each mitigation action will be required during the project planning phase in order to determine the economic feasibility of each action. Projects will also be evaluated for social and environmental impact-related feasibility, as well as technical feasibility and any other criteria that evaluate project effectiveness. This evaluation of each project will be performed during the pre-application phase of a grant request. Project implementation will be subject to the availability of FEMA grants and other funding sources, as well as local resources.

Projects that are determined to be infeasible during this review process will be re-evaluated by members of the Core Planning Committee for re-scheduling or deletion.



Table 5.2.1: Mitigation Actions Priority Table by Hazard for Athens County

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	Athens County, Waterloo Township	9	57	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
2	Obtain EAP's and dam failure inundation data for each class 1 dam. Review plans and provide action recommendations to NHMP Committee.	Athens County, Waterloo Township	9	60	County EMA	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
3	Obtain or create inundation maps for all dams.	Athens County, Waterloo Township	9	56	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
4	Rehabilitate high hazard potential dams. Seek grant funding to finance this work.	Athens County, Waterloo Township	9	59	County EMA, Consultants, and COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
5	Review notification procedures concerning water releases from the Tom Jenkins Dam.	Athens County, Waterloo Township	9	58	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
<i>Drought & Extreme Heat</i>								
6	Create a drought response plan: Develop a county-wide plan that includes early warning systems, alternative water sourcing, and temporary relief programs for farmers.	Athens County	6	55	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
<i>Earthquakes</i>								
8	Promote equipment fastening in County and municipal facilities.	Williams County, Bridgewater Township	11	38	County Engineer, Township Trustees	General Operating Budget	08/2025 - 08/2030	Previous
<i>Flooding</i>								
7	Analyze replacement costs for high priority, critical facilities in the floodplain.	Athens County, Waterloo Township	4	51	NHMP Committee, Township Trustees, County GIS	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
8	Conduct an annual meeting and or trainings for floodplain managers to discuss issues and ways to manage, preserve, or restore the floodplain.	Athens County, Waterloo Township	4	46	COUNTY RPC, NHMP Committee, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
9	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	Athens County, Waterloo Township	4	44	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
10	Create a High Road Map for the County that shows evacuation routes and roads affected by the 1%-chance flood as well as flash floods. Print map on road signs and install maps on frequently used flood routes.	Athens County, Waterloo Township	4	47	County GIS, County EMA, COUNTY RPC, County Engineer	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
11	Ensure all eligible jurisdictions are participating in the NFIP.	Athens County, Waterloo Township	4	43	County EMA, County Floodplain Manager	Staff Time	08/2025 - 08/2030	New
12	Expand the Athens County Flood Damage Reduction Regulations to include natural stream buffers for all identified waterways within the unincorporated areas of Athens County.	Athens County, Waterloo Township	4	45	County EMA, County Floodplain Manager, County Engineer	General Operating Budget	08/2025 - 08/2030	New
13	Explore creative solutions for stormwater detention.	Athens County, Waterloo Township	4	48	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
14	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Athens County	4	49	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
15	Mitigate repetitive loss and other loss properties in the floodplain.	Athens County, Waterloo Township	4	53	Consultant, NHMP Committee and COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
16	Perform a HAZUS flood scenario for Athens County	Athens County, Waterloo Township	4	52	County GIS, County EMA, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
17	Prepare a flash flood emergency plan.	Athens County, Waterloo Township	4	42	Intern with EMA, County GIS	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
18	Research eligible projects. Additional mitigation efforts are still needed in several jurisdictions where residents and property are at risk from the flood hazard. Elevation and/or buy-out programs will be researched and proposed for those considered competitive.	Athens County, Waterloo Township	4	54	Consultant, NHMP Committee, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
19	Utilize GIS to map flash flood watersheds and identify residents whose homes and property lie within areas that may have flash flooding.	Athens County, Waterloo Township	4	50	Intern with EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
20	Work with FEMA to improve floodplain mapping to enhance the county's flood preparedness.	Athens County	4	41	County EMA, County Floodplain Manager, County Engineer	General Operating Budget	08/2025 - 08/2030	New
<i>Invasive Species (Included with Multiple Hazards)</i>								
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
21	An article will be written annually for the Chambergram.	Athens County, Waterloo Township	1	36	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
22	Analyze existing siren warning systems and see where additional coverage would be beneficial. Apply for grant funding as needed.	Athens County, Waterloo Township	1	28	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
23	Analyze status and effectiveness of wide area rapid notification systems.	Athens County	1	14	County EMA, 911	General Operating Budget	08/2025 - 08/2030	Previous
24	Analyze whether existing warning sign program on local roads is adequate or whether additional signage and maintenance is required.	Athens County, Waterloo Township	1	20	County EMA, County Engineer	General Operating Budget	08/2025 - 08/2030	Previous
25	Apply for Pre-Disaster Mitigation funding to update this Plan.	Athens County, Waterloo Township	1	1	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
26	Assess what services would be impacted including education by long-term recovery efforts.	Athens County, Waterloo Township	1	10	NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
27	Conduct 10 presentations about hazard planning to interested groups in the County.	Athens County	1	29	County EMA	Staff Time	08/2025 - 08/2030	Previous
28	Conduct PSA's via radio for various natural hazards.	Athens County, Waterloo Township	1	30	County EMA, NHMP Committee	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	Previous
29	Coordinate a seasonal hazard awareness campaign. Develop brochures and social media spots. Brochures will be designed with checklists.	Athens County	1	31	County EMA, COUNTY RPC, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
30	Coordinate emergency equipment needs and availability.	Athens County, Waterloo Township	1	4	County EMA	Staff Time	08/2025 - 08/2030	Previous
31	Create program with phone number for farmers to call to request relocation of farm animals during disasters.	Athens County	1	19	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
32	Devise a mitigation plan to protect the resources.	Athens County, Waterloo Township	1	25	COUNTY RPC Intern and SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
33	Discuss and potentially formulate policy or guidance for dissemination to inform local government and area stakeholders about the benefits of preservation and/or restoration of high hazard area natural buffers.	Athens County, Waterloo Township	1	21	County EMA, NHMP Committee, Township Trustees	General Operating Budget	08/2025 - 08/2030	Previous
34	Encourage solid waste enforcement staff to focus on and disseminate information about areas where illegal waste dumping poses the most threat.	Athens County, Waterloo Township	1	22	County EMA, Health Department	General Operating Budget	08/2025 - 08/2030	Previous
35	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	Athens County, Waterloo Township	1	33	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
36	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	Athens County, Waterloo Township	1	12	County EMA, NHMP Committee, Township Trustees	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
37	Establish a sandbag reserve at the Athens County EMA/911 Center for distribution to local jurisdictions during extreme weather events to protect residents and critical infrastructure.	Athens County	1	39	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
38	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	Athens County	1	3	NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
39	Establishment of an early notification process for high-risk residents (elderly, disabled, floodplain properties, etc.).	Athens County	1	2	County EMA	Staff Time	08/2025 - 08/2030	New
40	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	Athens County, Waterloo Township	1	5	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
41	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	Athens County, Waterloo Township	1	26	Mayors, NHMP Committee, and Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
42	Finalize the application for the County to become a Storm Ready community.	Athens County, Waterloo Township	1	23	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
43	Identify emergency areas to relocate farm animals during disasters and outline animal relocation process for quick implementation.	Athens County	1	18	County EMA	General Operating Budget	08/2025 - 08/2030	New
44	Improve communications with the business community by ensuring that a Chamber member is invited to sit on the NHMP Committee.	Athens County, Waterloo Township	1	27	COUNTY RPC, Natural Hazard NHMP Committee, EMA	Staff Time	08/2025 - 08/2030	Previous
45	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	Athens County	1	32	County EMA, COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
46	Invite utilities once per year to one of the quarterly NHMP Committee meetings.	Athens County, Waterloo Township	1	34	County EMA, Township Trustees, 911	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous
47	Keep the natural hazard NHMP Committee to implement the Plan.	Athens County, Waterloo Township	1	13	COUNTY RPC, County EMA, Township Trustees	Staff Time	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
48	Promote weather radio usage in Athens County. The NHMP should seek grant funding and establish priorities for weather radio placement.	Athens County, Waterloo Township	1	38	County EMA, NHMP Committee, Township Trustees	General Operating Budget	08/2025 - 08/2030	Previous
49	Provide hazard risk maps on the County GIS page.	Athens County, Waterloo Township	1	16	County GIS, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
50	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	Athens County, Waterloo Township	1	15	County EMA, NHMP Committee	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
51	Review subdivision regulations to ensure compliance with natural hazard mitigation principles. Provide information to villages about subdivision regulations.	Athens County, Waterloo Township	1	37	COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
52	Review the Emergency Operations Plan to ensure compliance with natural hazard mitigation principles.	Athens County, Waterloo Township	1	7	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
53	Share information on EMA website about what other communities in Athens County do to reduce hazard risk.	Athens County	1	9	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
54	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	Athens County, Waterloo Township	1	17	COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
55	The NHMP will support the Red Cross and 911 with efforts to keep data about vulnerable populations current. NHMP will work to provide information about how neighbors can help protect vulnerable populations during a disaster.	Athens County, Waterloo Township	1	6	County EMA, 911	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
56	Update the Homebuyers/Builder's Guide produced by the Athens SWCD.	Athens County	1	35	SWCD	General Operating Budget	08/2025 - 08/2030	Previous
57	Use GIS to map the resources.	Athens County, Waterloo Township	1	24	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
58	Utilize vulnerable population maps to formulation Emergency Action Plans for hazard events. Potentially create more detailed maps for municipalities.	Athens County, Waterloo Township	1	11	County EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
59	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Athens County, Waterloo Township	1	8	County EMA	Staff Time	08/2025 - 08/2030	New
<i>Severe Summer Weather (Included with Multiple Hazards)</i>								
<i>Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)</i>								
<i>Tornadoes</i>								
60	Provide information on EMA website concerning tornado and weather alert sirens and what the warnings mean.	Athens County, Waterloo Township	3	40	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
<i>Wildfire</i>								
61	Prepare a county-scale GIS wildfire risk map. OU intern based on any existing maps from ODNR or WNF.	Athens County	10	61	County GIS, County EMA, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous



Table 5.2.2: Mitigation Actions Priority Table by Hazard for City of Athens

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	City of Athens	9	58	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
2	Obtain EAP's and dam failure inundation data for each class 1 dam. Review plans and provide action recommendations to NHMP Committee.	City of Athens	9	59	County EMA	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
3	Rehabilitate high hazard potential dams. Seek grant funding to finance this work.	City of Athens	9	60	County EMA, Consultants, COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
4	Review notification procedures concerning water releases from the Tom Jenkins Dam.	City of Athens	9	57	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
5	Analyze replacement costs for high priority, critical facilities in the floodplain.	City of Athens	4	50	NHMP Committee, Mayor or Administrator of City of Athens, and County GIS	General Operating Budget	08/2025 - 08/2030	Previous
6	Conduct an annual meeting and or trainings for floodplain managers to discuss issues and ways to manage, preserve, or restore the floodplain.	City of Athens	4	45	COUNTY RPC, NHMP Committee, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
7	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	City of Athens	4	49	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
8	Create a High Road Map for the County that shows evacuation routes and roads affected by the 1%-chance flood as well as flash floods. Print map on road signs and install maps on frequently used flood routes.	City of Athens	4	46	County GIS, County EMA, COUNTY RPC, County Engineer	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
9	Ensure all eligible jurisdictions are participating in the NFIP.	City of Athens	4	42	County EMA, County Floodplain Manager	Staff Time	08/2025 - 08/2030	New
10	Explore creative solutions for stormwater detention.	City of Athens	4	53	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
11	Find funding for stormwater solutions identified in the action "explore creative solutions for storm water detention".	City of Athens	4	54	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
12	Mitigate repetitive loss and other loss properties in the floodplain.	City of Athens	4	51	Consultant, NHMP Committee, COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
13	Perform a HAZUS flood scenario for Athens County	City of Athens	4	52	County GIS, County EMA, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
14	Prepare a flash flood emergency plan.	City of Athens	4	44	Intern with County EMA, County GIS	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
15	Research eligible projects. Additional mitigation efforts are still needed in several jurisdictions where residents and property are at risk from the flood hazard. Elevation and/or buy-out programs will be researched and proposed for those considered competitive.	City of Athens	4	47	Consultant, NHMP Committee, COUNTY RPC	Staff Time	08/2025 - 08/2030	Previous
16	Update the City of Athens' Major Flood Event Operational Plan.	City of Athens	4	43	Mayor or Administrator of City of Athens	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
17	Utilize GIS to map flash flood watersheds and identify residents whose homes and property lie within areas that may have flash flooding.	City of Athens	4	48	Intern with County EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
<i>Invasive Species</i>								
18	Adopt an action plan to identify and propose appropriate mitigation and removal strategies for invasive species on City-owned land.	City of Athens	7	55	Mayor or Administrator of City of Athens	General Operating Budget	08/2025 - 08/2030	New
19	Partner with organizations to identify funding and volunteer sources available to assist in the removal of invasive species from private property.	City of Athens	7	56	Mayor or Administrator of City of Athens	General Operating Budget	08/2025 - 08/2030	New
<i>Landslides and Mine Subsidence</i>								
20	Utilize GIS to map slip-prone soils, steep slopes, and locations of previous landslides and land subsidence.	City of Athens	11	62	Mayor or Administrator of City of Athens	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
<i>Multiple Hazards</i>								
21	Adopt action plans for extreme weather events to provide shelter and basic necessities to the community, especially disadvantaged populations and persons without shelter.	City of Athens	1	11	Mayor or Administrator of City of Athens	Staff Time	08/2025 - 08/2030	New
22	Adopt an action plan to address emergency 911 responses, alternative transportation routes, etc. in case of destructive natural event.	City of Athens	1	3	Mayor or Administrator of City of Athens	Staff Time	08/2025 - 08/2030	New
23	An article will be written annually for the Chambergram.	City of Athens	1	36	EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
24	Analyze existing siren warning systems and see where additional coverage would be beneficial. Apply for grant funding as needed.	City of Athens	1	2	EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
25	Analyze status and effectiveness of wide area rapid notification systems.	City of Athens	1	4	County EMA, 911	General Operating Budget	08/2025 - 08/2030	Previous
26	Analyze whether existing warning sign program on local roads is adequate or whether additional signage and maintenance is required.	City of Athens	1	32	EMA, County Engineer	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
27	Apply for Pre-Disaster Mitigation funding to update this Plan.	City of Athens	1	14	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous
28	Assess what services would be impacted including education by long-term recovery efforts.	City of Athens	1	19	NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
29	Conduct 10 presentations about hazard planning to interested groups in the County.	City of Athens	1	37	County EMA	Staff Time	08/2025 - 08/2030	Previous
30	Conduct PSA's via radio for various natural hazards.	City of Athens	1	33	County EMA, NHMP Committee	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	Previous
31	Coordinate a seasonal hazard awareness campaign. Develop brochures and social media spots. Brochures will be designed with checklists.	City of Athens	1	30	County EMA, COUNTY RPC, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
32	Coordinate emergency equipment needs and availability.	City of Athens	1	7	County EMA	Staff Time	08/2025 - 08/2030	Previous
33	Create program with phone number for farmers to call to request relocation of farm animals during disasters.	City of Athens	1	35	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
34	Devise a mitigation plan to protect the resources.	City of Athens	1	20	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
35	Discuss and potentially formulate policy or guidance for dissemination to inform local government and area stakeholders about the benefits of preservation and/or restoration of high hazard area natural buffers.	City of Athens	1	12	EMA, NHMP Committee, Mayor or Administrator of City of Athens	General Operating Budget	08/2025 - 08/2030	Previous
36	Encourage solid waste enforcement staff to focus on and disseminate information about areas where illegal waste dumping poses the most threat.	City of Athens	1	18	EMA, Health Department	General Operating Budget	08/2025 - 08/2030	Previous
37	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	City of Athens	1	34	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
38	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	City of Athens	1	15	County EMA, NHMP Committee, Mayor or Administrator of City of Athens	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
39	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	City of Athens	1	21	NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
40	Establishment of an early notification process for high-risk residents (elderly, disabled, floodplain properties, etc.).	City of Athens	1	10	County EMA	Staff Time	08/2025 - 08/2030	New
41	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	City of Athens	1	22	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
42	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	City of Athens	1	5	Mayor or Administrator of City of Athens, NHMP Committee, and Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
43	Finalize the application for the County to become a Storm Ready community.	City of Athens	1	39	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
44	Identify emergency areas to relocate farm animals during disasters and outline animal relocation process for quick implementation.	City of Athens	1	24	County EMA	General Operating Budget	08/2025 - 08/2030	New
45	Improve communications with the business community by ensuring that a Chamber member is invited to sit on the NHMP Committee.	City of Athens	1	38	COUNTY RPC, NHMP Committee, County EMA	Staff Time	08/2025 - 08/2030	Previous
46	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	City of Athens	1	16	County EMA, COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
47	Invite utilities once per year to one of the quarterly NHMP Committee meetings.	City of Athens	1	8	Mayor or Administrator of City of Athens, County EMA, 911	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous
48	Keep the natural hazard NHMP Committee to implement the Plan.	City of Athens	1	31	COUNTY RPC, County EMA, Mayor or Administrator of City of Athens	Staff Time	08/2025 - 08/2030	Previous
49	Promote weather radio usage in Athens County. The NHMP should seek grant funding and establish priorities for weather radio placement.	City of Athens	1	27	EMA, NHMP Committee, Mayor or Administrator of City of Athens	General Operating Budget	08/2025 - 08/2030	Previous
50	Provide hazard risk maps on the County GIS page.	City of Athens	1	6	County GIS, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
51	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	City of Athens	1	23	EMA, NHMP Committee	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
52	Review subdivision regulations to ensure compliance with natural hazard mitigation principles. Provide information to villages about subdivision regulations.	City of Athens	1	25	COUNTY RPC	United States Army Corps of Engineers (USACE) Ohio Environmental Infrastructure Program	08/2025 - 08/2030	Previous
53	Review the Emergency Operations Plan to ensure compliance with natural hazard mitigation principles.	City of Athens	1	28	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
54	Share information on EMA website about what other communities in Athens County do to reduce hazard risk.	City of Athens	1	26	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
55	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	City of Athens	1	29	COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
56	The NHMP will support the Red Cross and 911 with efforts to keep data about vulnerable populations current. NHMP will work to provide information about how neighbors can help protect vulnerable populations during a disaster.	City of Athens	1	13	County EMA, 911	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
57	Update the Homebuyers/Builder's Guide produced by the Athens SWCD.	City of Athens	1	40	SWCD	General Operating Budget	08/2025 - 08/2030	Previous
58	Use GIS to map the resources.	City of Athens	1	17	COUNTY RPC Intern and SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
59	Utilize vulnerable population maps to formulate Emergency Action Plans for hazard events. Potentially create more detailed maps for municipalities.	City of Athens	1	9	County EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
60	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	City of Athens	1	1	County EMA	Staff Time	08/2025 - 08/2030	New
<i>Severe Summer Weather (Included with Multiple Hazards)</i>								
<i>Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)</i>								
<i>Tornadoes</i>								
61	Provide information on EMA website concerning tornado and weather alert sirens and what the warnings mean.	City of Athens	3	41	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
<i>Wildfire</i>								
62	Prepare a county-scale GIS wildfire risk map. OU intern based on any existing maps from ODNR or WNF.	City of Athens	10	61	County GIS, County EMA, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous



Table 5.2.3: Mitigation Actions Priority Table by Hazard for Village of Albany

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	Village of Albany	11	27	County EMA, County Engineer, Floodplain Manager	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
2	Obtain or create inundation maps for all dams.	Village of Albany	11	28	County EMA, County Engineer, Floodplain Manager	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
3	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	Village of Albany	9	24	County EMA, County Engineer, Floodplain Manager	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
4	Ensure all eligible jurisdictions are participating in the NFIP.	Village of Albany	9	23	County EMA, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	New
5	Expand the Athens County Flood Damage Reduction Regulations to include natural stream buffers for all identified waterways within the unincorporated areas of Athens County.	Village of Albany	9	25	County EMA, County Engineer, Floodplain Manager	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
6	Explore creative solutions for stormwater detention.	Village of Albany	9	26	County EMA, SWCD	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
7	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Village of Albany	9	22	County EMA, SWCD	United States Army Corps of Engineers (USACE) Ohio Environmental Infrastructure Program	08/2025 - 08/2030	Previous
<i>Invasive Species (Included with Multiple Hazards)</i>								
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
8	Assess what services would be impacted including education by long-term recovery efforts.	Village of Albany	1	1	NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
9	Conduct PSA's via radio for various natural hazards.	Village of Albany	1	2	County EMA, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
10	Coordinate emergency equipment needs and availability.	Village of Albany	1	3	County EMA	Staff Time	08/2025 - 08/2030	Previous
11	Create program with phone number for farmers to call to request relocation of farm animals during disasters.	Village of Albany	1	21	County EMA, Mayor or Administrator of Village of Albany	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
12	Define what historic resources will be included.	Village of Albany	1	4	COUNTY RPC, NHMP Committee, SE Ohio History Center	Staff Time	08/2025 - 08/2030	Previous
13	Devise a mitigation plan to protect the resources.	Village of Albany	1	5	COUNTY RPC Intern, SE Ohio History Center	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	Previous
14	Discuss and potentially formulate policy or guidance for dissemination to inform local government and area stakeholders about the benefits of preservation and/or restoration of high hazard area natural buffers.	Village of Albany	1	6	County EMA, NHMP Committee, Mayor or Administrator of Village of Albany	Staff Time	08/2025 - 08/2030	Previous
15	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	Village of Albany	1	7	County EMA	Staff Time	08/2025 - 08/2030	Previous
16	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	Village of Albany	1	8	County EMA, NHMP Committee, Mayor or Administrator of Village of Albany	Staff Time	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
17	Establish a sandbag reserve at the Athens County EMA/911 Center for distribution to local jurisdictions during extreme weather events to protect residents and critical infrastructure.	Village of Albany	1	18	County EMA, Mayor or Administrator of Village of Albany	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
18	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	Village of Albany	1	9	NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
19	Establishment of an early notification process for high-risk residents (elderly, disabled, floodplain properties, etc.).	Village of Albany	1	19	County EMA, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	New
20	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	Village of Albany	1	10	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
21	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	Village of Albany	1	11	Mayors, NHMP Committee, and Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
22	Identify emergency areas to relocate farm animals during disasters and outline animal relocation process for quick implementation.	Village of Albany	1	20	County EMA, Mayor or Administrator of Village of Albany	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
23	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	Village of Albany	1	12	County EMA, COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
24	Provide hazard risk maps on the County GIS page.	Village of Albany	1	13	County GIS, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
25	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	Village of Albany	1	14	County EMA, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
26	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	Village of Albany	1	15	COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
27	Use GIS to map the resources.	Village of Albany	1	16	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
28	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Albany	1	17	County EMA, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	New
Severe Summer Weather (Included with Multiple Hazards)								
Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)								
Tornadoes (Included with Multiple Hazards)								
Wildfire (Included with Multiple Hazards)								



Table 5.2.4: Mitigation Actions Priority Table by Hazard for Village of Amesville

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	Village of Amesville	10	45	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
2	Obtain or create inundation maps for all dams.	Village of Amesville	10	46	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
3	Conduct an annual meeting and or trainings for floodplain managers to discuss issues and ways to manage, preserve, or restore the floodplain.	Village of Amesville	3	37	County RPC, NHMP Committee, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
4	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	Village of Amesville	3	35	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
5	Create a High Road Map for the County that shows evacuation routes and roads affected by the 1%-chance flood as well as flash floods. Print map on road signs and install maps on frequently used flood routes.	Village of Amesville	3	32	County GIS, County EMA, County RPC, County Engineer	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
6	Ensure all eligible jurisdictions are participating in the NFIP.	Village of Amesville	3	41	County EMA, County Floodplain Manager	Staff Time	08/2025 - 08/2030	New
7	Expand the Athens County Flood Damage Reduction Regulations to include natural stream buffers for all identified waterways within the unincorporated areas of Athens County.	Village of Amesville	3	42	County EMA, County Floodplain Manager, County Engineer	General Operating Budget	08/2025 - 08/2030	New
8	Explore creative solutions for stormwater detention.	Village of Amesville	3	39	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
9	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Village of Amesville	3	38	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
10	Mitigate repetitive loss and other loss properties in the floodplain.	Village of Amesville	3	36	Consultant, NHMP, Committee, County RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
11	Prepare a flash flood emergency plan.	Village of Amesville	3	34	Intern with County EMA, County GIS	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
12	Research eligible projects. Additional mitigation efforts are still needed in several jurisdictions where residents and property are at risk from the flood hazard. Elevation and/or buy-out programs will be researched and proposed for those considered competitive.	Village of Amesville	3	33	Consultant, NHMP, Committee, County RPC	General Operating Budget	08/2025 - 08/2030	Previous
13	Utilize GIS to map flash flood watersheds and identify residents whose homes and property lie within areas that may have flash flooding.	Village of Amesville	3	40	Intern with County EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
<i>Invasive Species</i>								
14	Invasive Species Mitigation-Coordinate with local organizations, and private land managers to manage non-native invasive species in idle space within the city, as well as non-native species used in landscaping within the city. (Bradford Pear, Winged Burning Bush, Chinese Privet, Paulownia, Tree of Heaven, Oriental Bittersweet, Hybrid non-native Crabapples, etc) All of these species pose immediate environmental and economic risk to private and public land in the county.	Village of Amesville	2	30	Ohio Wild Land Services	General Operating Budget	08/2025 - 08/2030	New



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
15	Lobby for non-native invasive species that are listed as invasive by the State of Ohio to be removed from city limits and not allowed for use in landscaping.	Village of Amesville	2	31	Ohio Wild Land Services	General Operating Budget	08/2025 - 08/2030	New
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
16	An article will be written annually for the Chambergram.	Village of Amesville	1	17	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
17	Analyze status and effectiveness of wide area rapid notification systems.	Village of Amesville	1	12	County EMA, 911	General Operating Budget	08/2025 - 08/2030	Previous
18	Apply for Pre-Disaster Mitigation funding to update this Plan.	Village of Amesville	1	28	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous
19	Assess what services would be impacted including education by long-term recovery efforts.	Village of Amesville	1	4	NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
20	Conduct 10 presentations about hazard planning to interested groups in the County.	Village of Amesville	1	7	County EMA	Staff Time	08/2025 - 08/2030	Previous
21	Create program with phone number for farmers to call to request relocation of farm animals during disasters.	Village of Amesville	1	26	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
22	Develop a new management plan for the Hocking River riparian area between White's Mill and Highway 50 bridge.	Village of Amesville	1	3	Ohio Wild Land Services	General Operating Budget	08/2025 - 08/2030	New
23	Devise a mitigation plan to protect the resources.	Village of Amesville	1	18	RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
24	Discuss and potentially formulate policy or guidance for dissemination to inform local government and area stakeholders about the benefits of preservation and/or restoration of high hazard area natural buffers.	Village of Amesville	1	10	County EMA, NHMP Committee, Mayor or Administrator of Village of Amesville	General Operating Budget	08/2025 - 08/2030	Previous
25	Encourage solid waste enforcement staff to focus on and disseminate information about areas where illegal waste dumping poses the most threat.	Village of Amesville	1	2	County EMA, Health Department	General Operating Budget	08/2025 - 08/2030	Previous
26	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	Village of Amesville	1	13	County EMA	General Operating Budget	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
27	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	Village of Amesville	1	20	County EMA, NHMP Committee, Mayor or Administrator of Village of Amesville	General Operating Budget	08/2025 - 08/2030	Previous
28	Establish a sandbag reserve at the Athens County EMA/911 Center for distribution to local jurisdictions during extreme weather events to protect residents and critical infrastructure.	Village of Amesville	1	27	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
29	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	Village of Amesville	1	14	NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
30	Establishment of an early notification process for high-risk residents (elderly, disabled, floodplain properties, etc.).	Village of Amesville	1	24	County EMA	Staff Time	08/2025 - 08/2030	New
31	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	Village of Amesville	1	8	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
32	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	Village of Amesville	1	21	Village of Administrator of Village of Amesville, NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
33	Finalize the application for the County to become a Storm Ready community.	Village of Amesville	1	29	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
34	Identify emergency areas to relocate farm animals during disasters and outline animal relocation process for quick implementation.	Village of Amesville	1	25	County EMA	General Operating Budget	08/2025 - 08/2030	New
35	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	Village of Amesville	1	19	County EMA, County RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
36	Keep the natural hazard mitigation committee to implement the Plan.	Village of Amesville	1	11	County EMA, County RPC, Mayor or Administrator of Village of Amesville	Staff Time	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
37	Promote weather radio usage in Athens County. The NHMP should seek grant funding and establish priorities for weather radio placement.	Village of Amesville	1	5	County EMA, NHMP Committee, Mayor or Administrator of Village of Amesville	General Operating Budget	08/2025 - 08/2030	Previous
38	Provide hazard risk maps on the County GIS page.	Village of Amesville	1	15	County GIS, County RPC	General Operating Budget	08/2025 - 08/2030	Previous
39	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	Village of Amesville	1	22	County EMA, NHMP Committee	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
40	Review the Emergency Operations Plan to ensure compliance with natural hazard mitigation principles.	Village of Amesville	1	23	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
41	Share information on EMA website about what other communities in Athens County do to reduce hazard risk.	Village of Amesville	1	9	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
42	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	Village of Amesville	1	16	County RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
43	The NHMP will support the Red Cross and 911 with efforts to keep data about vulnerable populations current. NHMP will work to provide information about how neighbors can help protect vulnerable populations during a disaster.	Village of Amesville	1	6	County EMA, 911	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
44	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Amesville	1	1	County EMA	Staff Time	08/2025 - 08/2030	New
40	Review the Emergency Operations Plan to ensure compliance with natural hazard mitigation principles.	Village of Amesville	1	23	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
41	Share information on EMA website about what other communities in Athens County do to reduce hazard risk.	Village of Amesville	1	9	County EMA	General Operating Budget	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
42	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	Village of Amesville	1	16	County RPC, NHMP committee	General Operating Budget	08/2025 - 08/2030	Previous
43	The NHMP will support the Red Cross and 911 with efforts to keep data about vulnerable populations current. NHMP will work to provide information about how neighbors can help protect vulnerable populations during a disaster.	Village of Amesville	1	6	County EMA, 911	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
44	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Amesville	1	1	County EMA	Staff Time	08/2025 - 08/2030	New
<i>Severe Summer Weather (Included with Multiple Hazards)</i>								
<i>Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)</i>								
<i>Tornadoes (Included with Multiple Hazards)</i>								
45	Provide information on EMA website concerning tornado and weather alert sirens and what the warnings mean.	Village of Amesville	6	43	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
<i>Wildfire (Included with Multiple Hazards)</i>								
46	Prepare a county-scale GIS wildfire risk map. OU intern based on any existing maps from ODNR or WNF.	Village of Amesville	8	44	County GIS, County EMA, County RPC	General Operating Budget	08/2025 - 08/2030	Previous



Table 5.2.5: Mitigation Actions Priority Table by Hazard for Village of Chauncey

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Obtain EAP's and dam failure inundation data for each class 1 dam. Review plans and provide action recommendations to NHMP Committee.	Village of Chauncey	11	49	County EMA	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
2	Rehabilitate high hazard potential dams. Seek grant funding to finance this work.	Village of Chauncey	11	50	County EMA, Consultants, COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
3	Review notification procedures concerning water releases from the Tom Jenkins Dam.	Village of Chauncey	11	48	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
4	Analyze replacement costs for high priority, critical facilities in the floodplain.	Village of Chauncey	2	42	NHMP Committee, County GIS, Mayor or Administrator of Village of Chauncey	General Operating Budget	08/2025 - 08/2030	Previous
5	Conduct an annual meeting and or trainings for floodplain managers to discuss issues and ways to manage, preserve, or restore the floodplain.	Village of Chauncey	2	45	COUNTY RPC, NHMP Committee, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
6	Create a High Road Map for the County that shows evacuation routes and roads affected by the 1%-chance flood as well as flash floods. Print map on road signs and install maps on frequently used flood routes.	Village of Chauncey	2	37	County GIS, County EMA, COUNTY RPC, County Engineer	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
7	Explore creative solutions for stormwater detention.	Village of Chauncey	2	44	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
8	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Village of Chauncey	2	43	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
9	Mitigate repetitive loss and other loss properties in the floodplain.	Village of Chauncey	2	36	Consultant, NHMP Committee, COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
10	Perform a HAZUS flood scenario for Athens County	Village of Chauncey	2	38	County GIS, County EMA, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
11	Prepare a flash flood emergency plan.	Village of Chauncey	2	39	Intern with EMA, County GIS	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
12	Produce structure and value lists and map floodplain and "at-risk" properties in the villages of Chauncey, Glouster, Jacksonville, and Trimble.	Village of Chauncey	2	41	County GIS, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
13	Research eligible projects. Additional mitigation efforts are still needed in several jurisdictions where residents and property are at risk from the flood hazard. Elevation and/or buy-out programs will be researched and proposed for those considered competitive.	Village of Chauncey	2	40	Mayor of Administrator of Village of Chauncey	General Operating Budget	08/2025 - 08/2030	Previous
14	Utilize GIS to map flash flood watersheds and identify residents whose homes and property lie within areas that may have flash flooding.	Village of Chauncey	2	35	Intern with EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
<i>Invasive Species (Included with Multiple Hazards)</i>								
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
15	Analyze existing siren warning systems and see where additional coverage would be beneficial. Apply for grant funding as needed.	Village of Chauncey	1	16	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
16	Analyze status and effectiveness of wide area rapid notification systems.	Village of Chauncey	1	8	County EMA, 911	General Operating Budget	08/2025 - 08/2030	Previous
17	Analyze whether existing warning sign program on local roads is adequate or whether additional signage and maintenance is required.	Village of Chauncey	1	21	County EMA, County Engineer	General Operating Budget	08/2025 - 08/2030	Previous
18	Apply for Pre-Disaster Mitigation funding to update this Plan.	Village of Chauncey	1	9	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous
19	Assess what services would be impacted including education by long-term recovery efforts.	Village of Chauncey	1	22	NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
20	Conduct 10 presentations about hazard planning to interested groups in the County.	Village of Chauncey	1	29	County EMA	Staff Time	08/2025 - 08/2030	Previous
21	Conduct PSA's via radio for various natural hazards.	Village of Chauncey	1	24	County EMA, NHMP Committee	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	Previous
22	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	Village of Chauncey	1	13	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
23	Coordinate a seasonal hazard awareness campaign. Develop brochures and social media spots. Brochures will be designed with checklists.	Village of Chauncey	1	25	County EMA, COUNTY RPC, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
24	Coordinate emergency equipment needs and availability.	Village of Chauncey	1	26	County EMA	Staff Time	08/2025 - 08/2030	Previous
25	Create heating and cooling centers for residents in need, a notification system to check in our at-risk residents, more funding to home repairs for heating and cooling at risk residents.	Village of Chauncey	1	5	Mayor or Administrator of Village of Chauncey	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
26	Create heating and cooling centers for residents in need, a notification system to check in our at-risk residents, more funding to home repairs for heating and cooling at risk residents.	Village of Chauncey	1	6	Mayor or Administrator of Village of Chauncey	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
27	Create maps of flood routes for first responders and residents and to send to media and communities to distribute during flood events	Village of Chauncey	1	4	County Floodplain Manager, County Engineer	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
28	Create program with phone number for farmers to call to request relocation of farm animals during disasters.	Village of Chauncey	1	12	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
29	Devise a mitigation plan to protect the resources.	Village of Chauncey	1	30	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
30	Discuss and potentially formulate policy or guidance for dissemination to inform local government and area stakeholders about the benefits of preservation and/or restoration of high hazard area natural buffers.	Village of Chauncey	1	27	County EMA, NHMP Committee, Mayor or Administrator of Village of Chauncey	General Operating Budget	08/2025 - 08/2030	Previous
31	Encourage solid waste enforcement staff to focus on and disseminate information about areas where illegal waste dumping poses the most threat.	Village of Chauncey	1	10	County EMA, Health Department	General Operating Budget	08/2025 - 08/2030	Previous
32	Ensure all eligible jurisdictions are participating in the NFIP.	Village of Chauncey	1	18	County EMA, County Floodplain Manager	Staff Time	08/2025 - 08/2030	New
33	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	Village of Chauncey	1	15	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
34	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	Village of Chauncey	1	31	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
35	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	Village of Chauncey	1	23	County EMA, NHMP Committee, Mayor or Administrator of Village of Chauncey	General Operating Budget	08/2025 - 08/2030	Previous
36	Establish a sandbag reserve at the Athens County EMA/911 Center for distribution to local jurisdictions during extreme weather events to protect residents and critical infrastructure.	Village of Chauncey	1	20	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
37	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	Village of Chauncey	1	32	NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
38	Establishment of an early notification process for high-risk residents (elderly, disabled, floodplain properties, etc.).	Village of Chauncey	1	2	County EMA	Staff Time	08/2025 - 08/2030	New



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
39	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	Village of Chauncey	1	33	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
40	Expand the Athens County Flood Damage Reduction Regulations to include natural stream buffers for all identified waterways within the unincorporated areas of Athens County.	Village of Chauncey	1	3	County EMA, County Floodplain Manager, County Engineer	General Operating Budget	08/2025 - 08/2030	New
41	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	Village of Chauncey	1	28	Mayor or Administrator of Village of Chauncey, NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
42	Identify emergency areas to relocate farm animals during disasters and outline animal relocation process for quick implementation.	Village of Chauncey	1	11	County EMA	General Operating Budget	08/2025 - 08/2030	New
43	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	Village of Chauncey	1	14	County EMA, COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
44	Obtain or create inundation maps for all dams.	Village of Chauncey	1	19	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
45	Provide hazard risk maps on the County GIS page.	Village of Chauncey	1	34	County GIS, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
46	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	Village of Chauncey	1	17	County EMA, NHMP Committee	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
47	Review subdivision regulations to ensure compliance with natural hazard mitigation principles. Provide information to villages about subdivision regulations.	Village of Chauncey	1	7	COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
48	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Chauncey	1	1	County EMA	Staff Time	08/2025 - 08/2030	New
Severe Summer Weather (Included with Multiple Hazards)								



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)</i>								
<i>Tornadoes</i>								
49	Create heating and cooling centers for residents in need, a notification system to check in our at risk residents, more funding to home repairs for heating and cooling at risk residents.	Village of Chauncey	6	46	Mayor or Administrator of Village of Chauncey	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
<i>Wildfire</i>								
50	Technical and monetary assistance to be reinstated or remain in the NFIP	Village of Chauncey	7	47	Mayor or Administrator of Village of Chauncey	General Operating Budget	08/2025 - 08/2030	New


Table 5.2.6: Mitigation Actions Priority Table by Hazard for Village of Coolville

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure (Not Included)</i>								
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
1	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	Village of Coolville	3	27	County EMA, Mayor or Administrator of Village of Albany	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
2	Explore creative solutions for stormwater detention.	Village of Coolville	3	26	County EMA, SWCD	General Operating Budget	08/2025 - 08/2030	Previous
3	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Village of Coolville	3	28	County EMA, SWCD	United States Army Corps of Engineers (USACE) Ohio Environmental Infrastructure Program	08/2025 - 08/2030	Previous
4	Promote weather radio usage in Athens County. The NHMP should seek grant funding and establish priorities for weather radio placement.	Village of Coolville	3	24	County EMA, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	New
5	The NHMP will support the Red Cross and 911 with efforts to keep data about vulnerable populations current. NHMP will work to provide information about how neighbors can help protect vulnerable populations during a disaster.	Village of Coolville	3	25	County EMA, County Engineer, Floodplain Manager	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
<i>Invasive Species (Included with Multiple Hazards)</i>								
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
6	Analyze existing siren warning systems and see where additional coverage would be beneficial. Apply for grant funding as needed.	Village of Coolville	1	23	County EMA, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
7	Analyze status and effectiveness of wide area rapid notification systems.	Village of Coolville	1	12	County EMA, 911	General Operating Budget	08/2025 - 08/2030	Previous
8	Assess what services would be impacted including education by long-term recovery efforts.	Village of Coolville	1	1	NHMP Committee, Red Cross	Staff Time	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
9	Conduct 10 presentations about hazard planning to interested groups in the County.	Village of Coolville	1	2	County EMA	Staff Time	08/2025 - 08/2030	Previous
10	Conduct PSA's via radio for various natural hazards.	Village of Coolville	1	3	County EMA, NHMP Committee	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	Previous
11	Coordinate a seasonal hazard awareness campaign. Develop brochures and social media spots. Brochures will be designed with checklists.	Village of Coolville	1	19	County EMA, COUNTY RPC, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
12	Coordinate emergency equipment needs and availability.	Village of Coolville	1	14	County EMA	Staff Time	08/2025 - 08/2030	Previous
13	Create program with phone number for farmers to call to request relocation of farm animals during disasters.	Village of Coolville	1	22	County EMA, Mayor or Administrator of Village of Albany	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
14	Define what historic resources will be included.	Village of Coolville	1	15	COUNTY RPC, NHMP Committee, SE Ohio History Center	Staff Time	08/2025 - 08/2030	Previous
15	Devise a mitigation plan to protect the resources.	Village of Coolville	1	8	COUNTY RPC Intern and SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
16	Discuss and potentially formulate policy or guidance for dissemination to inform local government and area stakeholders about the benefits of preservation and/or restoration of high hazard area natural buffers.	Village of Coolville	1	4	County EMA, NHMP Committee, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	Previous
17	Encourage solid waste enforcement staff to focus on and disseminate information about areas where illegal waste dumping poses the most threat.	Village of Coolville	1	9	County EMA, Health Department	General Operating Budget	08/2025 - 08/2030	Previous
18	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	Village of Coolville	1	13	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
19	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	Village of Coolville	1	6	County EMA, NHMP Committee, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
20	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	Village of Coolville	1	7	NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
21	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	Village of Coolville	1	10	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
22	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	Village of Coolville	1	5	Mayor or Administrator of Village of Albany, NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
23	Identify emergency areas to relocate farm animals during disasters and outline animal relocation process for quick implementation.	Village of Coolville	1	21	County EMA, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	New
24	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	Village of Coolville	1	16	County EMA, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	New
25	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	Village of Coolville	1	11	County EMA, County Engineer, Floodplain Manager	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
26	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	Village of Albany	1	17	COUNTY RPC and NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
27	Use GIS to map the resources.	Village of Albany	1	18	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
28	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Albany	1	20	County EMA, Mayor or Administrator of Village of Albany	General Operating Budget	08/2025 - 08/2030	New
Severe Summer Weather (Included with Multiple Hazards)								
Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)								
Tornadoes (Included with Multiple Hazards)								
Wildfire (Included with Multiple Hazards)								





Table 5.2.7: Mitigation Actions Priority Table by Hazard for Village of Glouster

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	Village of Glouster	2	36	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
2	Obtain EAP's and dam failure inundation data for each class dam. Review plans and provide action recommendations to NHMP Committee.	Village of Glouster	2	34	County EMA	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
3	Obtain or create inundation maps for all dams.	Village of Glouster	2	37	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
4	Rehabilitate high hazard potential dams. Seek grant funding to finance this work.	Village of Glouster	2	38	County EMA, Consultants, COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
5	Review notification procedures concerning water releases from the Tom Jenkins Dam.	Village of Glouster	2	35	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
6	Analyze replacement costs for high priority, critical facilities in the floodplain.	Village of Glouster	3	47	NHMP Committee, Mayor or Administrator of Village of Glouster, and County GIS	General Operating Budget	08/2025 - 08/2030	Previous
7	Conduct an annual meeting and or trainings for floodplain managers to discuss issues and ways to manage, preserve, or restore the floodplain.	Village of Glouster	3	40	COUNTY RPC, NHMP Committee, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
8	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	Village of Glouster	3	45	County EMA, Mayor or Administrator of Village of Glouster	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
9	Create a High Road Map for the County that shows evacuation routes and roads affected by the 1%-chance flood as well as flash floods. Print map on road signs and install maps on frequently used flood routes.	Village of Gloucester	3	44	County GIS, County EMA, COUNTY RPC, County Engineer	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
10	Ensure all eligible jurisdictions are participating in the NFIP.	Village of Gloucester	3	39	County EMA, County Floodplain Manager	Staff Time	08/2025 - 08/2030	New
11	Expand the Athens County Flood Damage Reduction Regulations to include natural stream buffers for all identified waterways within the unincorporated areas of Athens County.	Village of Gloucester	3	46	County EMA, County Floodplain Manager, County Engineer	General Operating Budget	08/2025 - 08/2030	New
12	Explore creative solutions for stormwater detention.	Village of Gloucester	3	50	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
13	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Village of Gloucester	3	41	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
14	Mitigate repetitive loss and other loss properties in the floodplain.	Village of Gloucester	3	48	Consultant, NHMP Committee, COUNTY RPC	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
15	Perform a HAZUS flood scenario for Athens County	Village of Gloucester	3	51	County GIS, County EMA, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
16	Prepare a flash flood emergency plan.	Village of Gloucester	3	42	Intern with County EMA, County GIS	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
17	Produce structure and value lists and map floodplain and "at-risk" properties in the villages of Chauncey, Glouster, Jacksonville, and Trimble.	Village of Glouster	3	49	County GIS, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
18	Utilize GIS to map flash flood watersheds and identify residents whose homes and property lie within areas that may have flash flooding.	Village of Glouster	3	43	Intern with County EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
<i>Invasive Species (Included with Multiple Hazards)</i>								
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
19	Analyze existing siren warning systems and see where additional coverage would be beneficial. Apply for grant funding as needed.	Village of Glouster	1	11	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
20	Analyze status and effectiveness of wide area rapid notification systems.	Village of Glouster	1	25	County EMA, 911	General Operating Budget	08/2025 - 08/2030	Previous
21	Analyze whether existing warning sign program on local roads is adequate or whether additional signage and maintenance is required.	Village of Glouster	1	3	County EMA, County Engineer	General Operating Budget	08/2025 - 08/2030	Previous
22	Apply for Pre-Disaster Mitigation funding to update this Plan.	Village of Glouster	1	12	County EMA	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous
23	Assess what services would be impacted including education by long-term recovery efforts.	Village of Glouster	1	9	NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
24	Conduct 10 presentations about hazard planning to interested groups in the County.	Village of Glouster	1	13	County EMA	Staff Time	08/2025 - 08/2030	Previous
25	Coordinate a seasonal hazard awareness campaign. Develop brochures and social media spots. Brochures will be designed with checklists.	Village of Glouster	1	29	County EMA, COUNTY RPC, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
26	Coordinate emergency equipment needs and availability.	Village of Glouster	1	31	County EMA	Staff Time	08/2025 - 08/2030	Previous
27	Devise a mitigation plan to protect the resources.	Village of Glouster	1	1	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
28	Discuss and potentially formulate policy or guidance for dissemination to inform local government and area stakeholders about the benefits of preservation and/or restoration of high hazard area natural buffers.	Village of Gloucester	1	4	EMA, NHMP Committee, Mayor or Administrator of Village of Gloucester	General Operating Budget	08/2025 - 08/2030	Previous
29	Encourage solid waste enforcement staff to focus on and disseminate information about areas where illegal waste dumping poses the most threat.	Village of Gloucester	1	2	County EMA, Health Department	General Operating Budget	08/2025 - 08/2030	Previous
30	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	Village of Gloucester	1	33	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
31	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	Village of Gloucester	1	26	County EMA, NHMP Committee, Mayor or Administrator of Village of Gloucester	General Operating Budget	08/2025 - 08/2030	Previous
32	Establish a sandbag reserve at the Athens County EMA/911 Center for distribution to local jurisdictions during extreme weather events to protect residents and critical infrastructure.	Village of Gloucester	1	28	County EMA, Mayor or Administrator of Village of Gloucester	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
33	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	Village of Gloucester	1	6	NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
34	Establishment of an early notification process for high-risk residents (elderly, disabled, floodplain properties, etc.).	Village of Gloucester	1	24	County EMA, Mayor or Administrator of Village of Gloucester	Staff Time	08/2025 - 08/2030	New
35	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	Village of Gloucester	1	14	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
36	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	Village of Gloucester	1	27	Mayor or Administrator of Village of Gloucester, NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous
37	Finalize the application for the County to become a Storm Ready community.	Village of Gloucester	1	15	County EMA	General Operating Budget	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
38	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	Village of Gloucester	1	16	County EMA, COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
39	Invite utilities once per year to one of the quarterly NHMP Committee meetings.	Village of Gloucester	1	17	Mayor or Administrator of Village of Gloucester, County EMA, 911	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	Previous
40	Keep the natural hazard NHMP Committee to implement the Plan.	Village of Gloucester	1	18	COUNTY RPC, County EMA, Mayor or Administrator of Village of Gloucester	Staff Time	08/2025 - 08/2030	Previous
41	Provide hazard risk maps on the County GIS page.	Village of Gloucester	1	5	County GIS, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
42	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	Village of Gloucester	1	19	County EMA, NHMP Committee	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
43	Review subdivision regulations to ensure compliance with natural hazard mitigation principles. Provide information to villages about subdivision regulations.	Village of Gloucester	1	8	COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
44	Review the Emergency Operations Plan to ensure compliance with natural hazard mitigation principles.	Village of Gloucester	1	10	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
45	Share information on EMA website about what other communities in Athens County do to reduce hazard risk.	Village of Gloucester	1	7	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
46	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	Village of Gloucester	1	20	COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	Previous
47	The NHMP will support the Red Cross and 911 with efforts to keep data about vulnerable populations current. NHMP will work to provide information about how neighbors can help protect vulnerable populations during a disaster.	Village of Gloucester	1	32	County EMA, 911	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
48	Update the Homebuyers/Builder's Guide produced by the Athens SWCD.	Village of Glouster	1	30	SWCD	General Operating Budget	08/2025 - 08/2030	Previous
49	Use GIS to map the resources.	Village of Glouster	1	21	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
50	Utilize vulnerable population maps to formulate Emergency Action Plans for hazard events. Potentially create more detailed maps for municipalities.	Village of Glouster	1	22	County EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
51	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Glouster	1	23	County EMA, Mayor or Administrator of Village of Glouster	Staff Time	08/2025 - 08/2030	New
<i>Severe Summer Weather (Included with Multiple Hazards)</i>								
<i>Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)</i>								
<i>Tornadoes</i>								
52	Provide information on EMA website concerning tornado and weather alert sirens and what the warnings mean.	Village of Glouster	9	53	County EMA, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
<i>Wildfire</i>								
53	Prepare a county-scale GIS wildfire risk map. OU intern based on any existing maps from ODNR or WNF.	Village of Glouster	8	52	County GIS, County EMA, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous



Table 5.2.8: Mitigation Actions Priority Table by Hazard for Village of Jacksonville

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	Village of Jacksonville	8	13	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
2	Obtain or create inundation maps for all dams.	Village of Jacksonville	8	14	County EMA, County Floodplain Manager, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
3	Analyze replacement costs for high priority, critical facilities in the floodplain.	Village of Jacksonville	2	6	NHMP Committee, Mayor or Administrator of Village of Jacksonville, County GIS	General Operating Budget	08/2025 - 08/2030	Previous
4	Conduct an annual meeting and or trainings for floodplain managers to discuss issues and ways to manage, preserve, or restore the floodplain.	Village of Jacksonville	2	8	COUNTY RPC, NHMP Committee, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
5	Control runoff to prevent increased flood hazards with stormwater controls added to the County's floodplain regulations.	Marion County, Salt Rock Township	2	10	County EMA, Mayor or Administrator of Village of Jacksonville	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
6	Ensure all eligible jurisdictions are participating in the NFIP.	Village of Jacksonville	2	11	County EMA, County Floodplain Manager, Mayor or Administrator of Village of Jacksonville	Staff Time	08/2025 - 08/2030	New
7	Explore creative solutions for stormwater detention.	Village of Jacksonville	2	9	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
8	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Village of Jacksonville	2	5	County EMA, SWCD	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	Previous
9	Produce structure and value lists and map floodplain and "at-risk" properties in the villages of Chauncey, Glouster, Jacksonville, and Trimble.	Village of Jacksonville	2	7	County GIS, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
<i>Invasive Species (Included with Multiple Hazards)</i>								
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
10	Devise a mitigation plan to protect the resources.	Village of Jacksonville	1	2	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
11	Provide hazard risk maps on the County GIS page.	Village of Jacksonville	1	1	County GIS, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	Previous
12	Review subdivision regulations to ensure compliance with natural hazard mitigation principles. Provide information to villages about subdivision regulations.	Village of Jacksonville	1	4	COUNTY RPC	United States Army Corps of Engineers (USACE) Ohio Environmental Infrastructure Program	08/2025 - 08/2030	Previous
13	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Jacksonville	1	3	County EMA, Mayor or Administrator of Village of Jacksonville	Staff Time	08/2025 - 08/2030	New
<i>Severe Summer Weather (Included with Multiple Hazards)</i>								
<i>Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)</i>								
<i>Tornadoes (Included with Multiple Hazards)</i>								
<i>Wildfire (Included with Multiple Hazards)</i>								



Table 5.2.9: Mitigation Actions Priority Table by Hazard for Village of Trimble

#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam/Levee Failure</i>								
1	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	Village of Trimble	9	40	County EMA, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
2	Obtain or create inundation maps for all dams.	Village of Trimble	9	41	County EMA, County Engineer	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	New
3	Review notification procedures concerning water releases from the Tom Jenkins Dam.	Village of Trimble	9	39	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
<i>Drought & Extreme Heat (Included with Multiple Hazards)</i>								
<i>Earthquakes (Included with Multiple Hazards)</i>								
<i>Flooding</i>								
4	Analyze replacement costs for high priority, critical facilities in the floodplain.	Village of Trimble	3	35	NHMP Committee, Mayor or Administrator of Village of Trimble, County GIS	General Operating Budget	08/2025 - 08/2030	Previous
5	Conduct an annual meeting and or trainings for floodplain managers to discuss issues and ways to manage, preserve, or restore the floodplain.	Village of Trimble	3	28	COUNTY RPC, NHMP Committee, County EMA	General Operating Budget	08/2025 - 08/2030	Previous
6	Create a High Road Map for the County that shows evacuation routes and roads affected by the 1%-chance flood as well as flash floods. Print map on road signs and install maps on frequently used flood routes.	Village of Trimble	3	29	County GIS, County EMA, COUNTY RPC, County Engineer	Staff Time	08/2025 - 08/2030	Previous
7	Ensure all eligible jurisdictions are participating in the NFIP.	Village of Trimble	3	34	County EMA, Mayor or Administrator of Village of Trimble	Staff Time	08/2025 - 08/2030	New
8	Establish public-private partnerships with governments, businesses, community service agencies, and residents.	Village of Trimble	3	31	NHMP Committee	General Operating Budget	08/2025 - 08/2030	New
9	Explore creative solutions for stormwater detention.	Village of Trimble	3	38	County EMA, SWCD	General Operating Budget	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
10	Explore the viability of creating temporary emergency services outside the hazard event area. Insure VFD's receive special training where needed.	Village of Trimble	3	32	Mayor or Administrator of Village of Trimble, NHMP Committee, and Red Cross	General Operating Budget	08/2025 - 08/2030	New
11	Find funding for stormwater solutions identified the action "explore creative solutions for storm water detention".	Village of Trimble	3	37	County EMA, SWCD	United States Army Corps of Engineers (USACE) Ohio Environmental Infrastructure Program	08/2025 - 08/2030	Previous
12	Produce structure and value lists and map floodplain and "at-risk" properties in the villages of Chauncey, Glouster, Jacksonville, and Trimble.	Village of Trimble	3	36	County GIS, County EMA	United States Army Corps of Engineers (USACE) Ohio Environmental Infrastructure Program	08/2025 - 08/2030	Previous
13	The NHMP will support the Red Cross and 911 with efforts to keep data about vulnerable populations current. NHMP will work to provide information about how neighbors can help protect vulnerable populations during a disaster.	Village of Trimble	3	33	County EMA, 911	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
14	Utilize GIS to map flash flood watersheds and identify residents whose homes and property lie within areas that may have flash flooding.	Village of Trimble	3	30	Intern with County EMA, County GIS	Staff Time	08/2025 - 08/2030	Previous
<i>Invasive Species (Included with Multiple Hazards)</i>								
<i>Landslides and Mine Subsidence (Included with Multiple Hazards)</i>								
<i>Multiple Hazards</i>								
15	Analyze status and effectiveness of wide area rapid notification systems.	Village of Trimble	1	1	County EMA, 911	General Operating Budget	08/2025 - 08/2030	Previous
16	Analyze whether existing warning sign program on local roads is adequate or whether additional signage and maintenance is required.	Village of Trimble	1	21	County EMA, County Engineer	General Operating Budget	08/2025 - 08/2030	Previous
17	Assess what services would be impacted including education by long-term recovery efforts.	Village of Trimble	1	23	NHMP Committee, Red Cross	General Operating Budget	08/2025 - 08/2030	Previous



#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
18	Conduct PSA's via radio for various natural hazards.	Village of Trimble	1	2	County EMA, NHMP Committee	Hazard Mitigation Grant Program (HMGP)	08/2025 - 08/2030	Previous
19	Coordinate a seasonal hazard awareness campaign. Develop brochures and social media spots. Brochures will be designed with checklists.	Village of Trimble	1	3	County EMA, COUNTY RPC, NHMP Committee	Staff Time	08/2025 - 08/2030	Previous
20	Coordinate emergency equipment needs and availability.	Village of Trimble	1	24	County EMA	Staff Time	08/2025 - 08/2030	Previous
21	Create program with phone number for farmers to call to request relocation of farm animals during disasters.	Village of Trimble	1	18	County EMA, Mayor or Administrator of Village of Trimble	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
22	Define what historic resources will be included.	Village of Trimble	1	4	COUNTY RPC, NHMP Committee, SE Ohio History Center	Staff Time	08/2025 - 08/2030	Previous
23	Devise a mitigation plan to protect the resources.	Village of Trimble	1	5	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	Previous
24	Ensure that an after-action report is presented to all interested parties whenever the EOC is activated.	Village of Trimble	1	6	County EMA	General Operating Budget	08/2025 - 08/2030	Previous
25	Ensure there are enough emergency shelters throughout the county. Provide upgrades to existing facilities that could be converted to emergency shelters during or following a hazard event.	Village of Trimble	1	19	County EMA, NHMP Committee, Mayor or Administrator of Village of Trimble	General Operating Budget	08/2025 - 08/2030	New
26	Establishment of an early notification process for high-risk residents (elderly, disabled, floodplain properties, etc.).	Village of Trimble	1	20	County EMA, Mayor or Administrator of Village of Trimble	Staff Time	08/2025 - 08/2030	New
27	Exchange information with utility companies at a special meeting of the NHMP Committee designed for such interaction.	Village of Trimble	1	7	County EMA	General Operating Budget	08/2025 - 08/2030	New
28	Identify emergency areas to relocate farm animals during disasters and outline animal relocation process for quick implementation.	Village of Trimble	1	22	County EMA, Mayor or Administrator of Village of Trimble	General Operating Budget	08/2025 - 08/2030	New



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
29	Invite design professionals to two meetings where experts will discuss designing and building for resilience against hazards. Include landscaping and natural systems in discussion.	Village of Trimble	1	25	County EMA, COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	New
30	Invite utilities once per year to one of the quarterly NHMP Committee meetings.	Village of Trimble	1	8	Mayor or Administrator of Village of Trimble, County EMA, 911	Hazard Mitigation Assistance (HMA)	08/2025 - 08/2030	New
31	Keep the natural hazard NHMP Committee to implement the Plan.	Village of Trimble	1	9	COUNTY RPC, EMA, Mayor or Administrator of Village of Trimble	Staff Time	08/2025 - 08/2030	New
32	Promote weather radio usage in Athens County. The NHMP should seek grant funding and establish priorities for weather radio placement.	Village of Trimble	1	26	County EMA, NHMP Committee, Mayor or Administrator of Village of Trimble	General Operating Budget	08/2025 - 08/2030	New
33	Provide hazard risk maps on the County GIS page.	Village of Trimble	1	10	County GIS, COUNTY RPC	General Operating Budget	08/2025 - 08/2030	New
34	Research eligible projects. Additional mitigation efforts are still needed in several jurisdictions where residents and property are at risk from the flood hazard. Elevation and/or buy-out programs will be researched and proposed for those considered competitive.	Village of Trimble	1	27	Consultant, NHMP Committee, COUNTY RPC	Staff Time	08/2025 - 08/2030	Previous
35	Review emergency preparedness systems for large assemblies of people trapped by a natural disaster.	Village of Trimble	1	11	County EMA, NHMP Committee	United States Army Corps of Engineers (USACE) Flood Control Program	08/2025 - 08/2030	New
36	Review the Emergency Operations Plan to ensure compliance with natural hazard mitigation principles.	Village of Trimble	1	12	County EMA	General Operating Budget	08/2025 - 08/2030	New
37	Share information on EMA website about what other communities in Athens County do to reduce hazard risk.	Village of Trimble	1	13	County EMA	General Operating Budget	08/2025 - 08/2030	New
38	The NHMP shall provide a comprehensive packet of information to each mayor and village council member. These will be presented at a Village Council meeting	Village of Trimble	1	14	COUNTY RPC, NHMP Committee	General Operating Budget	08/2025 - 08/2030	New



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#	Mitigation Action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
39	Use GIS to map the resources.	Village of Trimble	1	15	COUNTY RPC Intern, SE Ohio History Center	General Operating Budget	08/2025 - 08/2030	New
40	Utilize vulnerable population maps to formulation Emergency Action Plans for hazard events. Potentially create more detailed maps for municipalities.	Village of Trimble	1	16	County EMA, County GIS	Staff Time	08/2025 - 08/2030	New
41	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	Village of Trimble	1	17	County EMA, Mayor or Administrator of Village of Trimble	Staff Time	08/2025 - 08/2030	New
Severe Summer Weather (Included with Multiple Hazards)								
Severe Winter Weather and Extreme Cold (Included with Multiple Hazards)								
Tornadoes (Included with Multiple Hazards)								
Wildfire (Included with Multiple Hazards)								

6 | Schedule & Maintenance



6.1 Participation Overview

The Athens County Hazard Mitigation Plan will be adopted by all jurisdictions expect for the City of Nelsonville and the Village of Buchtel in Athens County. Every jurisdiction was given notice of the meeting during the kickoff and prior to each meeting. In addition, the County Planner reached out to all jurisdictions on multiple occasions to solicit participation. After the jurisdictions have adopted the plan, their signed resolutions or ordinances will be added to the plan in **Appendix G**.

6.2 Continued Public Involvement

Because local government plays a key role in the execution and implementation of mitigation strategies, each community will be responsible for understanding which items they are accountable for implementing. Annually, jurisdictions and responsible agencies should provide a status update for each mitigation action that is under their purview. This meeting will be where the jurisdictions and responsible parties assess the implementation and effectiveness of the hazard mitigation plan. This meeting should coincide with the budget process so that future funding sources can be determined and set aside for actions slated for that particular year. This meeting will also be available to the public. Additionally, each jurisdiction and the County will review the Hazard Mitigation Plan during other planning processes, such as development of comprehensive plans or capital improvement plans and incorporate appropriate goals and mitigation actions into such documents.

The public will continue to provide feedback on the Plan, as the Plan will be available through the Athens County Emergency Management Agency and Ohio Emergency Management Agency websites. Athens County will provide access to the Plan to all county, municipal, and township offices, and will make the Plan available in hardcopy and electronic format to the public as appropriate. The Athens County EMA Director will post notices of any meetings for updating and evaluating the Plan, using the usual methods for posting meeting announcements in the County to invite the public to participate. All meetings will be open to the public. Athens County will publicly announce the mitigation action items that are slated for development in the current year, as well as any updates to the Plan as part of the annual review process.

6.3 Previous Integration Efforts

Local governments and public entities, such as hospitals, play a major role in enforcing and implementing mitigation strategies because their daily operations guide the development of the communities in Athens County. The City of Athens has integrated the 2020 Athens Hazard Mitigation Plan in their Emergency Operations Plan (EOP) and Comprehensive Plan. The Village of Coolville has integrated the previous Hazard Mitigation Plan into their EOP by partnering with the Volunteer Fire Department and County EMA/911, into the Capital Improvement Plan completing sewer, water, and storm sewer maintenance and improvements, into the building codes by requiring safe construction of new developments, and into Stormwater Management Plans by requiring storm sewer draining and maintenance. The Village of Trimble has integrated the 2020 Hazard Mitigation Plan into the building codes by enforcing floodplain development and requires certified electric and plumbing before starting service.

6.4 Future Integration Efforts

Athens County and its participating jurisdictions will make a concerted effort to integrate the Hazard Mitigation Plan and its mitigation actions into existing plans and regulations, such as comprehensive plans, capital improvement plans, zoning codes and subdivision regulations, parks and open space plans, active shooter plans, and emergency operations plans. Every village in Athens County has a planning commission or a zoning board that deals with development and growth issues in their jurisdiction, referencing regulations, development plans, and mitigation strategies as they make



decisions. These jurisdictions are small and have limited full-time staff, so the County as an organization provides strong leadership and oversight of economic development, community development, and land use planning. Many local officials wear numerous hats as they guide, direct, and facilitate local growth and development through regulation. Mitigation efforts are considered simultaneously with building code enforcement, zoning regulations, and land use rules at the County level. There is significant overlap between County officials when it comes to growth and development, including plan approval, issuance of permits, and occupancy approval responsibilities.

For the Athens County Emergency Operations Plan, the EOP should facilitate integration of mitigation into response and recovery activities where appropriate, so key staff responsible for administering and updating the EOP should coordinate with the Core Planning Committee to identify integration areas and perform them. For the jurisdictions with floodplain regulations (Athens County and all jurisdictions), this Plan includes an action to “develop a floodplain management plan and update it regularly” so as floodplain regulations are reviewed and updated, the local floodplain coordinator(s) should continue to participate in the National Flood Insurance Program and should keep their maps updated. The Core Planning Committee should also engage the local floodplain coordinators and include them in their annual meetings for coordination, support, and to ensure this action is being met. For the zoning and land use regulations, this plan can be integrated in several ways. When zoning and/or land use regulations are reviewed and updated, related to flooding and dam failure, potential impact areas should be designated for limited to no development; and for landslides and land subsidence, land bordering waterways should either be left free of development or be reinforced to resist erosion. The Core Planning Committee should also engage the staff involved in administering and updating zoning codes and land use regulations and include them in their annual meetings for coordination, support, and assistance in integrating these recommendations from the plan.

Athens County also has a Floodplain Manager who works with the Athens County Engineer to help plan, approve, modify, and regulate new facilities, subdivisions, and neighborhoods not only in the context of building codes, but also with consideration for flood risk. They also collaborate to be sure that new structures are not placed within flood risk zones without taking Athens measures, like elevation, as early as the site development stage of construction. The Athens County Engineer works with the Athens County Auditor to manage the floodplain mapping and parcel identification and documentation by developing and maintaining GIS mapping. The Athens County Engineer also ensures that mitigation actions, like elevation, are properly included in the submitted building and occupancy permits during the approval process. The Athens County Engineer is also responsible for county ditch maintenance, which ties the County Engineer’s office to the Athens County Soil & Water Conservation District, as well as the Farm Service Agency director, as agricultural drainage concerns are shared and resolved. These officials work with the Floodplain Manager to check and evaluate the floodplain maps as introduced by FEMA to ensure accuracy through the map adoption process.

In addition, Athens County EMA, and the Core Planning Committee, consisting of leadership from participating jurisdictions, will work with the top-elected officials and authorities within their jurisdictions to integrate the hazard mitigation plan into the relevant existing and future planning mechanisms and capabilities as listed in **Table 3.4.1** of the plan.

6.5 Updating the Plan

The Hazard Mitigation Plan must be updated within five years and re-adopted by the County and all participating jurisdictions to maintain compliance with federal regulations and ensure eligibility for certain federal mitigation grant funds. Athens County will identify any necessary modifications to the Plan, including changes to mitigation goals and actions that should be incorporated into the next update. The Athens County EMA Director and the County Commissioners will initiate the process of updating the Plan in accordance with federal guidelines in sufficient time to meet state and federal deadline.

