

Hamilton County
Hazard Mitigation Plan
August 2023

Hamilton County Emergency Management
& Homeland Security Agency

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EXECUTIVE SUMMARY

The Hamilton County Multi-Hazard Mitigation Plan (MHMP or Plan) was developed to guide the County in a risk-based approach to become more resilient to the impacts of natural and technological hazards through mitigation planning. The Plan identifies areas of risk and assesses the potential cost and magnitude, establishes strategies and priorities to mitigate risk from natural and technological hazards, identifies specific mitigation projects to pursue for each identified hazard, guides the communities in their risk management activities and minimizes conflicts among agencies, and establishes eligibility for future mitigation program funds. This five-year update was a collaborative effort among the Hamilton County planning team with support from Integrated Solutions Consulting.

The Goals of this plan are:

- Goal 1: To develop equitable plans and policies that address community risk reduction and climate adaptation strategies focused on an evolving hazard landscape
- Goal 2: To reduce the impacts of hazards to new and existing structures and properties
- Goal 3: To minimize the interruption of essential services and activities
- Goal 4: To promote community resilience through public education

Table 1: Hamilton County Analyzed Hazards

Natural	Technological	Human-Caused
Drought	Dam/Levee Failure	Civil Disorder
Earthquake	Hazardous Material Incident	Cyber Incident
Extreme Cold Incident	Infrastructure and Structural Failure	Terrorism/Active Assailant
Extreme Heat Incident	Mass Transportation Incident	
Flood (Flash)	Urban Fires	
Flood (Riverine)		
High Wind and Tornado		
Land Loss		
Landslide		
Public Health Emergency		
Severe Thunderstorm		
Severe Winter Storm		
Wildfire		

The 2023 MHMP includes the following key updates:

- Historical hazards: Each hazard section within this plan documents NCEI-reported hazards within the past five years. Where data is available, historical hazards are graphed by decade, showing disaster trends over the past 50 years.
- County profile: Demographics, social, and economic data, as well as existing and future land use descriptions, are updated to reflect the status of the county and its jurisdictions.
- Planning description: The new Core Planning Team and updated planning process are described and documented.
- Risk assessment: The updated risk assessment includes Hazus-MH and GIS analyses that utilize site-specific data from the county. Hazards were identified and expanded to better integrate the County's Threat and Hazard Identification and Risk Assessment (THIRA).

- Each participating jurisdiction provided their own hazard analysis, which describes the hazards and their impacts as they pertain specifically to the community.
- Mitigation: The mitigation section addresses the status of existing strategies/actions in addition to new mitigation strategies/actions.

INTRODUCTION

Hazard mitigation is defined as any sustained action to reduce or eliminate long-term risk to human life and property from hazards. The Federal Emergency Management Agency (FEMA) has made reducing hazards one of its primary goals. Hazard mitigation planning and the subsequent implementation of the projects, measures, and policies developed as part of this Plan is a primary mechanism in achieving FEMA's goal.

The federal Disaster Mitigation Act of 2000 requires jurisdictions to develop and maintain a Multi-Hazard Mitigation Plan (MHMP) to remain eligible for certain federal disaster assistance and hazard mitigation funding programs. Renewal of the plan every five years is required to encourage the continual awareness of mitigation strategies. In order for the Flood Mitigation Insurance Program (NFIP) communities to be eligible for future mitigation funds, they must adopt the MHMP.

Since the year 2000, FEMA has declared 29[1] emergencies and disasters for the state of Ohio as of April 2023. Emergency declarations allow states access to FEMA funds for Public Assistance (PA), and disaster declarations allow for additional PA funding, including Individual Assistance (IA) and the Hazard Mitigation Grant Program (HMGP). Hamilton County has received federal aid for PA funding for seven (7) declared disasters since 2000. Table 2 lists mitigation grants awarded. Shown below are 25 projects totaling a sum of $29,730,990 awarded in project cost.

Table 2: Hamilton County Mitigation Grant Awarded Since 2000

Jurisdiction	Project Type	Disaster Number	Project Cost (Awarded)
Anderson Township	Acquisition	DR-1097-OH	$1,587,844
Whitewater Township	Acquisition	DR-1164-OH	$493,350
Cincinnati	Acquisition	DR-1164-OH	$2,600,000
Anderson Township	Acquisition	DR-1164-OH	$1,428,448
Colerain Township	Acquisition	DR-1227-OH	$1,797,600
Fairfax	Planning	DR-1390-OH	$16,360
Fairfax	Acquisition	DR-1390-OH	$920,198
Delhi Township	Acquisition	DR-1390-OH	$806,500
Delhi Plan	Planning	DR-1390-OH	$16,360
Delhi Township	Acquisition	DR-1805-OH	$1,840,970

[1] FEMA. Declared Disasters. Retrieved from https://www.fema.gov/disaster/declarations.

Table 2: Hamilton County Mitigation Grant Awarded Since 2000			
Hamilton County	Planning	DR-4002-OH	$60,775
Addyston	Advanced Assistance	DR-4507	$218,000
Hamilton County	Planning	DR-4507	$138,889
Loveland	Acquisition	DR-1453-OH	$135,500
Hamilton County	Acquisition	DR-4002-OH	$680,037
Hamilton County	Acquisition	DR-4360	$1,183,288
MSDGC	Acquisition	DR-4424	$4,581,884
Hamilton County	Planning?	NA	$68,525
Fairfax	Acquisition	NA	$554,000
Colerain Township	Planning	NA	$30,000
Delhi Township	Acquisition	NA	$1,326,550
MSDGC	Acquisition	NA	$4,309,437
Fairfax	Acquisition	NA	$869,483
Delhi Township	Acquisition	NA	$3,966,592
Hamilton County	Planning	NA	$100,400

Prerequisites

The Hamilton County Multi-Hazard Mitigation Plan meets the requirements of the Disaster Mitigation Act of 2000, which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act to require state, local, and tribal entities to closely coordinate mitigation planning and implementation efforts.

Planning Area and Participating Jurisdictions

The City of Milford, whose municipal boundaries are in both Hamilton and Clermont counties, participates in the Clermont County MHMP and is not included as a participating jurisdiction in this plan. All other municipalities in Hamilton County were invited to participate in the planning process. For countywide interest and statistical purposes, some of Milford's demographic and hazard-related data are included in this plan. The intent of this inclusion is to create a more informative plan regarding the hazards, risks, and vulnerabilities across all of Hamilton County.

The 49 participating jurisdictions listed in the table below were represented by one or more municipal officials. Representatives not only attended meetings, but also participated by gathering appropriate data and historical information, completed the community preparedness survey, participated in their community hazard analysis, identified new mitigation actions, updated past mitigation actions, and participated in other efforts (i.e., workshops, mitigation meetings, webinars and reviewing drafts). Local mitigation planning team representatives contact information and the documentation of participation in the Plan update are available in *Appendix B - Jurisdiction Profiles* and *Appendix A - Mitigation Actions.* The County also invited key

organizations to assist and review the plan update process. Supporting documentation can be found in *Appendix D - Stakeholder Engagement*.

Table 3: Participating Jurisdictions		
Addyston VLG	Glendale VLG	North College Hill CTY
Amberley VLG	Golf Manor VLG	Norwood CTY
Anderson TWP	Green TWP	Reading CTY
Arlington Heights VLG	Greenhills VLG	Sharonville CTY (part)
Blue Ash CTY	Hamilton County	Silverton VLG
Cheviot CTY	Harrison CTY	Springdale CTY
Cincinnati CTY	Harrison TWP	Springfield TWP
Cleves VLG	Lincoln Heights VLG	St. Bernard VLG
Colerain TWP	Lockland VLG	Sycamore TWP
Columbia TWP	Loveland CTY (part)	Symmes TWP
Crosby TWP	Madeira CTY	Terrace Park VLG
Deer Park CTY	Mariemont VLG	The Village of Indian Hill CTY
Delhi TWP	Miami TWP	Whitewater TWP
Elmwood Place VLG	Montgomery CTY	Woodlawn VLG
Evendale VLG	Mt. Healthy CTY	Wyoming CTY
Fairfax VLG	Newtown VLG	
Forest Park CTY	North Bend VLG	

Plan Participation

Updating this Plan involved assistance in identifying and evaluating hazards and mitigation actions from five (5) key groups: Core Planning Team, Steering Committee, Local Planning Team/Community Representatives from the 49 local jurisdictions, members of the public, and other stakeholders.

Core Planning Team

The Core Planning Team consisted of key members from the Hamilton County Emergency Management & Homeland Security Agency (EMHSA) and staff from Integrated Solutions Consulting. The Core Planning Team also served on the Steering Committee and helped to guide the process.

Steering Committee

The Steering Committee was headed by the Hamilton County EMHSA. Other members of the Steering Committee included representatives from various county departments, cities and villages, and other key emergency management partners. (Table 2). All members of the Steering Committee were actively involved in attending the MHMP Steering Committee meetings, provided available Geographic Information System (GIS) data and historical hazard information, reviewing and providing comments on the draft plans, coordinating and participating in the public input process, and coordinating the county's formal adoption of the plan. See *Appendix D – Stakeholder Engagement* for Steering Committee meeting sign-in sheets.

Table 4: Steering Committee Members		
Representative	**Title**	**Jurisdiction/Organization**
Adam Lanzillotta	Dam Safety	Ohio Department of Natural Resources
Aiesha Howard	Community Engagement Administrator	Hamilton County Department of Economic Inclusion & Equity
Amanda Testerman	Senior Environmental Safety Specialist	City of Cincinnati Office of Environment and Sustainability
Barry Puskas	Chief of Technical and Engineering Services	City of Dayton Miami Conservancy District
Paul Wright	Fire Chief	Montgomery Fire Department
Craig Dietsch	Chair of UC Geology Sciences Department	University of Cincinnati, Geology Sciences
Dave Shuey	Director of Information Systems	OKI Regional Council of Governments
Howard Miller	Senior Environmental Specialist	City of Cincinnati Office of Environment and Sustainability
James Stanforth	IT Assistant Manager	Cincinnati Area Geographic Information Systems (CAGIS)
Jessica Skelton	Director of Emergency Preparedness & Response	The Health Collaborative
Jill Ernst	Readiness & Response Facilitator	The Health Collaborative
John Nelson	Executive Director	Hamilton County Soil and Water Conservation District
Karen Ball	Compliance Coordinator	Hamilton County Administration & MSD
Kerri Castlen	Permits & Enforcement Area Supervisor	Hamilton County Environmental Services
Kim Snow	Supervisory Intelligence Analyst	Greater Cincinnati Fusion Center (GCFC)
Kyran Weithofer	Support Services Commander	Hamilton County Sheriff's Office
Margaret Minzner	Senior Environmental Planner	OKI Regional Council of Governments
Melissa Menerey	Dam Safety	Ohio Department of Natural Resources
Nicole Volpenhein	Emergency Support Specialist	The Health Collaborative
Olivia Maltry	Project Manager/Floodplain Technician	Hamilton County Planning + Development
Phil Clayton	SW Regional Supervisor	Ohio EMA
Becca Strobridge	Disaster Program Specialist	American Red Cross
Scott Bessler	Assistant Treatment Superintendent	MSD of Greater Cincinnati
Steve Armstrong	Government Operation Lead	American Red Cross
Vicky Earhart	Township Administrator	Anderson Township Administration
Ryan McEwan	Assistant Director	EMHSA
Destiny Jardin	Planning Specialist	EMHSA
Andrew Knapp	Director	Hamilton County
Christa Hyson	Director	Hamilton County Public Health
Dave Bruce	Risk Manager	Great Parks of Hamilton County
Dave Schmitt	Executive Director	Mill Creek Alliance
Eric Saylor	Engineer	City of Cincinnati, Stormwater Management Utility
Jason Rahe	Chief of Conservation and Parks	Great Parks of Hamilton County
John Sherrard	Emergency Response Coordinator	Hamilton County Public Health
Kryan Weithofer	Sr. Support Services Captain	Hamilton County Sheriff's Office
Matthew Flagler	Assistant Fire Chief	City of Cincinnati Division of Emergency Management/Fire Department
Sara Fehring	Interim Director	Hamilton County Conservation District
William Hursong	Fire Chief	City of Harrison Fire Department

Local Planning Teams & Community Representatives

Each of the 49 participating jurisdictions identified representatives to serve on the Local Planning Teams. The Local Planning Teams were instrumental in identifying community-specific risks/hazards and identifying and prioritizing mitigation actions that would reduce the costs of disaster response and recovery, protect people and infrastructure, and minimize overall disruption to their respective communities in the event of a disaster. Local Planning Teams participation is documented in *Appendix B – Jurisdiction Profiles.*

Supporting Organizations

The Core Planning Team invited local community organizations that provide support to underserved communities to participate in the planning process. Over 300 whole community partners were given the opportunity to provide feedback via email on the plan during the comment period to ensure equitable opportunity. Various representatives mentioned below are also members of the Steering Committee to include the Director of the Emergency Preparedness & Response, the Readiness & Response Facilitator and the Emergency Support Specialist who are all with the Health Collaborative whose mission is to serve the socially vulnerable and underserved populations. A list of invited underserved community support organizations is provided in Table 5 below:

Table 5: Underserved Community Support Organizations Invited to Participate		
Hamilton County Developmental Disability Services	Human Services Chamber of Hamilton County	Cincinnati Chamber of Commerce
The Health Collaborative	Alloy Development Co.	Greater Cincinnati Northern Kentucky African American Chamber of Commerce
City of Cincinnati Health Department	Hamilton County Department of Economic Inclusion & Equity	United Way of Greater Cincinnati
Hamilton County Council on Aging	Cincinnati and Hamilton County Public Library	Hamilton County Job and Family Services
Hamilton County Public Health's WeTHRIVE!℠ initiative	OKI Regional Council of Governments	American Red Cross

Identified Hazards

There are countless hazards that pose a threat to human life, health, and well-being, and no attempt is made here to compile an exhaustive list. Those that are addressed in disaster planning are generally categorized as "natural," "technological" and "human caused".[2] Some hazards are a threat to all geographic areas while others (e.g., flooding) are more limited in their extent.

Hamilton County hazards were identified, and their frequency of occurrence evaluated through an historical analysis using several resources, including:

- 2018 Hamilton County Multi-Hazard Mitigation Plan
- National Weather Service weather data from the past 50 years

[2] FEMA. (2018). Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR) Guide Comprehensive Preparedness Guide (CPG) 201. Retrieved from https://www.fema.gov/sites/default/files/2020-04/CPG201Final20180525.pdf.

- Hamilton County Community Planning: Data Products, Jurisdiction Profiles, Land Use Maps
- Repetitive Loss Properties for Hamilton County
- Severe Repetitive Loss Properties for Hamilton County

Although FEMA only requires and reviews natural hazards in hazard mitigation plans, Hamilton County decided to rank and mitigate against a comprehensive list natural, technological, and human-caused hazard events that could impact the planning area. Due to the nature of non-natural hazards the following hazards of interest have been assessed for their inclusion within the hazard ranking and mitigation process. Hazards that have been identified as significant in this county and that will be considered in this plan are listed in the table below.

Table 6: Hamilton County Analyzed Hazards

Natural	Technological	Human-Caused
Drought Earthquake Extreme Cold Incident Extreme Heat Incident Flood (Flash) Flood (Riverine) High Wind and Tornado Land Loss Landslide Public Health Emergency Severe Thunderstorm Severe Winter Storm Wildfire	Dam/Levee Failure Hazardous Material Incident Infrastructure and Structural Failure Mass Transportation Incident Urban Fires	Civil Disorder Cyber Incident Terrorism/Active Assailant

Per FEMA's mandate to consider all natural hazards, the following were not included because they do not directly impact Hamilton County's geographic location:

- Avalanche
- Hurricanes
- Sea Level Rise
- Storm Surge
- Tsunami

Hazard definitions are included in the Risk Assessment. Each jurisdiction's hazard risks and associated impacts can be found in *Appendix B –Jurisdiction Profiles.*

Plan Maintenance

The Disaster Mitigation Act of 2000 requires the monitoring, evaluation and updating of the hazard mitigation plan every five years. This hazard mitigation plan is designed to be a "living" document and therefore will be reviewed and updated within five years from its approval date. The Hamilton County Hazard Mitigation Steering Committee will provide leadership and guidance throughout the plan's life cycle (i.e., monitoring, evaluating and updating.) Updates will allow municipal leaders and the public to provide input into the process. The public will be notified of this opportunity via legal public notices. Hamilton County multi-hazard mitigation plan

maintenance process includes a schedule for annual monitoring and evaluation of the programmatic outcomes established in the Plan and for producing a formal Plan revision every five years.

Plan Update

The Plan will be reviewed on an annual basis by the Core Planning Team. It will be reviewed and revised every five years by the Steering Committee to determine the effectiveness of programs and to reflect changes that may affect mitigation priorities. EMHSA will be responsible for contacting the Steering Committee members and organizing the review. Committee members will be responsible for monitoring and evaluating the progress of the mitigation strategies in the Plan. The Steering Committee will review the goals and action items to determine their relevance to changing situations in the County, as well as changes in federal policy, and to ensure they are addressing current and expected conditions. The Steering Committee will also review the risk assessment portion of the Plan to determine if this information should be updated or modified, given any new available data. The organizations responsible for the various action items will report on the status of the projects, the success of various implementation processes, difficulties encountered, success of coordination efforts, and which strategies should be revised or removed.

EMHSA will be responsible for ensuring the Plan is updated. EMHSA and the Steering Committee will also notify all holders of the Plan and affected stakeholders when changes have been made. The updated Plan will be submitted to the State of Ohio Emergency Management Agency and to the Federal Emergency Management Agency (FEMA) for review and approval.

Monitoring, Evaluating

To ensure the Plan continues to provide an appropriate path for risk reduction throughout the County, it is necessary to regularly evaluate and update it. The Core Planning Team will be responsible for monitoring the status of the Plan and gathering appropriate parties to report of the status of mitigation actions. The Steering Committee will convene on an annual basis to determine the progress of the identified mitigation actions. The Steering Committee will also be an active participant in the next plan update. As the Multi-Hazard Mitigation Plan matures, new stakeholders will be identified and encouraged to join the existing Steering Committee.

During each annual Mitigation Steering Committee meeting, the Committee will be responsible for a brief evaluation of the 2023 Multi-Hazard Mitigation Plan and to review the progress on mitigation actions. Each annual Mitigation Steering Committee meeting must be documented, including the plan evaluation and review of Mitigation Actions. Mitigation Actions have been formatted to facilitate the annual review process.

Continued Public Engagement

Hamilton County EMHSA is dedicated to involving the public directly in the review and updates of the Plan. The Steering Committee is responsible for the review and update of the Plan. The public will also have the opportunity to provide input into Plan revisions and updates. Copies of the Plan will be kept by appropriate County departments and municipalities.

Public meetings will be held when deemed necessary by the Steering Committee. The meetings will provide a forum where the public can express concerns, opinions, or new alternatives that

can then be included in the Plan. EMHSA will be responsible for using County resources to publicize the public meetings and maintain public involvement.

Implementation and Integration through Existing Plans and Programs

Hazard mitigation practices must be incorporated within existing plans, projects and programs. Therefore, the involvement of all departments, private non-profits, private industry, and appropriate jurisdictions is necessary to find mitigation opportunities within existing or planned projects and programs. To execute this, the Steering Committee will assist and coordinate resources for the mitigation actions and provide strategic outreach to implement mitigation actions that meet the goals and objectives identified in this plan.

The Hamilton County Multi-Hazard Mitigation Plan (MHMP) is integrated in external plans developed by other local agencies primarily as it relates to the Hazard Identification Risk Assessment (HIRA). The HIRA is conducted every five years as part of the mitigation planning process. The results of the HIRA detail the risks posed by hazards within Hamilton County. This information is shared with community partners and local jurisdictions, allowing other planning efforts to be based on the latest hazard information. As a result, local jurisdictions developing comprehensive land use plans integrate the hazard risk information into their efforts.

The City of Cincinnati utilized information provided by the Hamilton County MHMP in their Office of Environment and Sustainability – Green Cincinnati Plan, both to better understand the risks and to reinforce the need for actions that address climate change and protect vulnerable residents from the consequences of these hazards. Additionally, hazard information provided by the HIRA was included in the EMHSA responses to the OKI survey for their 2050 Transportation Plan.

The MHMP is essential to understanding the hazards facing Hamilton County, the resulting prioritized list of hazards is used across the suite of Hamilton County Plans, as well as the plans of the local jurisdictions and community partner organizations, thus creating a shared understanding of the hazards facing the County.

The results of this Plan will be incorporated into ongoing planning efforts throughout the County. Hamilton County and its incorporated jurisdictions will update zoning plans and related ordinances, as necessary, and as part of regularly scheduled updates. Each community will be responsible for updating and integrating elements of the Plan into the community's own respective community plans and ordinances.

The Five-Year Action Plan

This section outlines the implementation agenda that the Steering Committee should follow five years following adoption of this Plan, and then every five years thereafter. The Steering Committee, led by EMHSA, is responsible for ensuring the MHMP is updated every five years.

The Steering Committee will consider the following action plan for the first 5-year planning cycle. It should be noted that the schedule below can be modified as necessary and does not include any meetings and/or activities that would be necessary following a disaster event (which would

include reconvening the Steering Committee within 90 days of a disaster or emergency to determine what mitigation projects should be prioritized during the community recovery effort). If an emergency meeting of the Steering Committee occurs, this proposed schedule may be altered to fit new needs.

Year 0: 2023

- 2023: Update the MHMP, including a series of Steering Committee meetings & public meetings. Submit the 2023 MHMP for State and FEMA Approval Pending Adoption (APA).
- Participating jurisdictions will formally adopt the 2023 MHMP upon State and FEMA APA.
- The Hamilton County EMSHA will coordinate submission of Plan adoption by all participating jurisdictions to the State for final approval of the MHMP. Note that final Plan is not approved until FEMA receives documentation of formal adoption by the governing bodies of the participating jurisdictions. Per federal requirements, at least one participating jurisdiction must adopt the Plan within one year of FEMA's APA notice, but each participating jurisdiction must adopt the plan by resolution or ordinance to be eligible for certain types of federal funding.

Year 1: 2024

- January - February: Prepare for and promote the first annual Plan Review and Public meetings. County departments and participating jurisdictions will provide a status update for each mitigation action/project.
- March: Reconvene the Steering Committee for the first annual Mitigation Steering Committee meeting. Introduce the concept of mitigation plan integration with other planning documents. Host the first annual public meeting.
- April – December: Work on mitigation actions. The Core Planning Team will stay in contact with lead departments/municipalities to keep tabs on mitigation project status and progress. Encourage plan integration efforts.

Year 2: 2025

- January - February: Prepare for and promote the second annual Plan Review and Public meetings. County departments and participating jurisdictions will provide a status update for each mitigation action/project.
- March: Reconvene the Steering Committee for the second annual Mitigation Steering Committee meeting. Review plan integration efforts. Host the second annual public meeting.
- April – December: Work on mitigation actions. The Core Planning Team will stay in contact with lead departments/municipalities to keep tabs on mitigation project status and progress. Encourage plan integration efforts.

Year 3: 2026

- January - February: Prepare for and promote the third annual Plan Review and Public meetings. County departments and participating jurisdictions will provide a status update for each mitigation action/project.
- March: Reconvene the Steering Committee for the third annual Mitigation Steering Committee meeting. Review plan integration efforts. Host the third annual public meeting.

- April – December: Work on mitigation actions. EMHSA and the Steering Committee will stay in contact with lead departments/municipalities to keep tabs on mitigation project status and progress. Encourage plan integration efforts.
- EMHSA will ask the Steering Committee members to volunteer for the Contractor Selection Sub-Committee to begin the process of bringing in a contractor to make plan updates for 2028 completion.

Year 4: 2027

- January - February: Prepare for and promote the fourth annual Plan Review and Public meetings. County departments and participating jurisdictions will provide a status update for each mitigation action/project.
- March: Reconvene the Steering Committee for the fourth annual Mitigation Steering Committee meeting. Review plan integration efforts. Host the fourth annual public meeting.
- April – December: Work on mitigation actions. The Core Planning Team will stay in contact with lead departments/municipalities to keep tabs on mitigation project status and progress. Encourage plan integration efforts.

Year 5: 2028

- January - December: Update the 2028 Multi-Hazard Mitigation Plan, including a series of Mitigation Steering Committee meetings & public meetings.
- June: Submit the 2028 Multi-Hazard Mitigation Plan for State and FEMA approval.

Plan Adoption

This Plan represents a comprehensive description of Hamilton County's commitment to significantly reduce or eliminate the potential impacts of disasters through planning and mitigation. Adoption by the local governing bodies within the County legitimizes the Plan and authorizes responsible agencies to implement mitigation responsibilities and activities. To be eligible for federal mitigation funding, each participating jurisdiction must adopt the plan. After thorough review, the Hamilton County Board of County Commissioners adopted the plan on August 24, 2023. Adoption resolutions/ordinances for each participating jurisdiction are included in *Appendix F – Plan Adoption.* Following FEMA review and Approval Pending Adoption, the participating jurisdictions in this plan intend to formally adopt the plan by resolution or ordinance.

PLAN PROCESS

The Plan was prepared to provide a basis for identifying and managing natural, technological, and human-caused hazards and to meet federal, state, and local requirements for hazard mitigation and FEMA grant funding.

Updating the Plan began with an initial kickoff meeting between Hamilton County Emergency Management & Homeland Security Agency (EMHSA) and the Steering Committee which was held on December 14, 2022. Following this meeting, the planning process involved review of the existing Plan; updating Hamilton County's hazard history; gathering information on local hazards from individual communities; gathering input on hazard priorities; identifying specific

vulnerabilities and desired mitigation strategies; evaluating the previous Plan goals, objectives, and mitigation strategies; determining the status of previous mitigation strategies and Action Plans; identifying repetitive loss properties; facilitating the activities of the Steering Committee and conducting multiple public meetings and outreach activities.

Information regarding hazards in the County and applicable mitigation strategies was obtained through six (6) interactive workshops held throughout the County and a comprehensive public survey that reached 1,616 residents and resulted in 1,102 completed responses.

The 2023 Hamilton County Hazard Mitigation Survey was opened on February 13, 2023, and closed on April 17, 2023. As part of this survey, Steering Committee members, community representatives, and members of the public were asked to rate each of the hazards in terms of perceived risk. They were also asked to rate “mitigation importance” for each of the identified hazards in the Plan. Information from this survey was used to inform the hazard risk prioritization process, and to ensure the Plan adequately addressed the public's concerns and priorities. Four public forums were advertised and held in the County, which provided residents with an opportunity to provide input into the Plan. A draft of the Plan was made available on the Hamilton County EMHSA web site for review and comment from June 27 to July 11, 2023.

The purpose of the six (6) workshops held throughout the County was to ensure local jurisdictions had the opportunity to identify their communities' risks and to identify/update their mitigation strategies and priorities. These workshops included local planning members from each of the communities. Participants validated the County’s risk assessment findings, described specific hazard risks and concerns for their own communities, updated existing mitigation actions/strategies from the 2018 Plan, and worked with their local planning team to identify new mitigation initiatives. Through a combination of ranking exercises, worksheets and discussion, workshop participants evaluated hazard risk results; evaluated the 2018 Plan goals, objectives, mitigation strategies, Action Plans and rankings; and selected options for mitigating specific hazards to be included in this Plan. In summary, the planning process consisted of the following key tasks:

Task 1: Organize Resources

The Hamilton County EMHSA created a Core Planning Team to attend meetings, gather data and historical information, review drafts, and participate in mitigation brainstorming sessions. In addition to the Core Planning Team, a Steering Committee was formed to provide overall guidance and direction throughout the mitigation planning process (see Steering Committee). Three (3) Steering Committee meetings were held throughout the Plan update. Participating jurisdictions were invited to form Local Planning Teams to ensure their jurisdiction's mitigation needs and priorities were addressed. See *Appendix B – Jurisdiction Profiles*.

Task 2: Risk Assessment

The Core Planning Team identified the natural and technological hazards to include in this Plan, as well as hazard event profiles to address the possible magnitudes and severities associated with each hazard. The Core Planning Team then used local GIS data to inventory the county’s assets

and estimate losses. The Steering Committee provided input and subject-matter expertise throughout this process.

Task 3: Public Involvement
The public was invited to attend any one of four public meetings to review the risk assessment results and discuss mitigation strategies, see *Appendix E – Public Engagement*. The public meetings were advertised locally in advance. A comprehensive public survey that reached 1,616 residents and resulted in 1,102 completed responses was also conducted. The results from the questionnaire were integrated into the overall assessment to include the categories of social vulnerability and community resilience. See *Appendix E – Public Engagement* for the Public Survey. Additionally, after the Core Planning Team made final edits, the plan was posted on Hamilton County's website, and the county sent a press release to invite the public to review the plan and submit comments. Hamilton County advertised the various opportunities for public involvement via social media platforms including Facebook, Twitter, Instagram, and the Nextdoor App.

Task 4: Develop Mitigation Strategies
The Core Planning Team met with representatives of each community (Local Planning Team) to develop and prioritize mitigation strategies and action items that would reduce the costs of disaster response and recovery, protect people and infrastructure, and minimize overall disruption to the county in the event of a disaster. See *Appendix B – Jurisdiction Profiles* and *Appendix A – Mitigation Actions*.

Task 5: Complete the Plan
The Core Planning Team compiled all the relevant sections of the Plan to produce a Draft Plan for review. Hamilton County stakeholders (including members of the public) had multiple opportunities to review and revise the Plan before submitting it to the Ohio Emergency Management Agency and FEMA for review.

Task 6: Plan Adoption
The Hamilton County EMHSA coordinated the effort to ensure the APA Plan was formally adopted by each participating jurisdiction and that at least one jurisdiction adopted the MHMP within one year of the APA notification from FEMA. See *Appendix F - Plan Adoption*.

Updating this Plan involved assistance in identifying and evaluating hazards and mitigation options from five (5) key groups: Core Planning Team, Steering Committee, local planning team/community representatives from the 49 jurisdictions, members of the public, and other stakeholders.

Since a Hazard Mitigation Plan is only a part of the emergency planning, mitigation, preparedness, response, and recovery process, a second objective of the planning process was to coordinate Plan preparation with existing Hamilton County emergency plans, programs, procedures and organizations. It should be noted that this Plan does not replace any existing plans or programs but is intended to provide a reference on hazard mitigation to be used in planning and program development.

COUNTY PROFILE

Hamilton County is the third most populous county[3] in the state with a population of 826,790[4] and 49 municipalities including 20 cities, 17 villages, and 12 townships. The population per square mile according to the 2020 U.S. Census Bureau was 2,048.9.[5] As noted previously, the City of Milford, one of the 49 municipalities, participates in the Clermont County MHMP; Milford is referenced here and throughout the plan for statistical reasons.

Topography

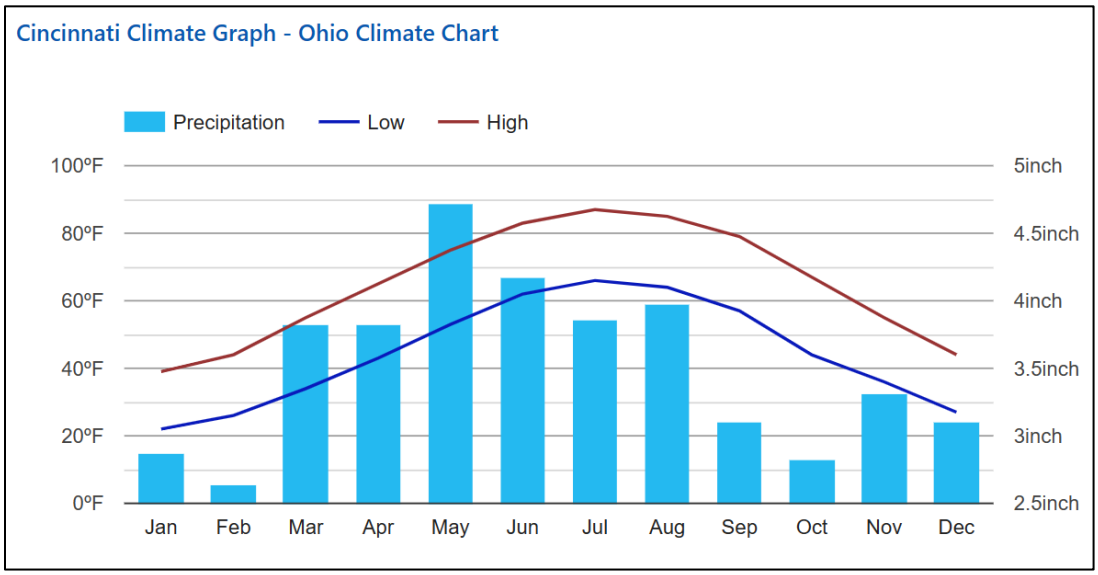
Hamilton County is located in the southwest corner of Ohio. The north bank of the Ohio River marks the southern boundary of the county. According to 2021 U.S. Census data, Hamilton County has a total land area of 405.9 square miles.[6]The topography of southwest Ohio has been determined by years of glacial erosion. As glaciers advancing from the northwest melted, they dropped deposits of sand and gravel, forming the rivers, valleys, and terrain of the Ohio Valley. There are five primary rivers that impact its topography: Whitewater River, Great Miami River, Mill Creek, Little Miami River, and the Ohio River. According to the Department of Natural Resources, the lowest surface elevation in Ohio is about 455 feet above sea level and is located where the Ohio River exits the state in the extreme southwest corner of Hamilton County.[7]

Climate

Hamilton County has a continental climate with cold winters and warm summers. Winters are moderately cold with extensive cloudiness, average high temperatures around 39°F, and average lows in 24°F. Summers are warm and humid with daytime temperatures averaging in the mid-80s, while evenings cool down into the 60s.[8] The average annual precipitation during the wettest month is 4.1 inches. The average snowfall in Hamilton County is 15 inches per year, with February being the month with the most snow.[9] February has an average snowfall of 3.2 inches.[10] Severe weather is not uncommon in the state. See figure 1.

[3] 2021 American Community Survey
[4] Ibid.
[5] United States Census Bureau. (2020). U.S. Census Bureau quick facts: Hamilton County, Ohio. Retrieved from https://www.census.gov/quickfacts/fact/table/hamiltoncountyohio/POP060220
[6] United States Census Bureau. (2021). U.S. Census Bureau: Hamilton County, Ohio. Retrieved from https://data.census.gov/profile?g=0500000US39061
[7] Ohio Division of Geological Survey. (2003). Shaded elevation map of Ohio-earth-tone version: Ohio Department of Natural Resources. Retrieved from https://ohiodnr.gov/wps/wcm/connect/gov/eb01e9f0-7221-4ce4-8dc0-34ec69deaef1/sem_tone.pdf?MOD=AJPERES&CVID=ne.XcQk
[8] Weather Spark. (2023). Average Temperature in Hamilton. Retrieved from https://weatherspark.com/y/15893/Average-Weather-in-Hamilton-Ohio-United-States-Year-Round#Figures-Temperature
[9] BestPlace.(2020). Climate in Hamilton County, Ohio. Retrieved from Climate in Hamilton County, Ohio (bestplaces.net)
[10] Ibid.

Figure 1: Climate Graph



Demographics

Population by Jurisdiction

The American Community Survey (ACS) published by the U.S. Census provided estimates for the cities in Hamilton County, as well as a total population estimate. Additionally, the population data for the villages in Hamilton County are based upon 2021 ACS estimates. The U.S. Census 2021 ACS population estimate for Hamilton County is 826,790. The majority of this population resides in cities and other incorporated areas. The population estimate represents a 2.19% increase in population from the 2018 plan estimates. The table below lists population distribution by jurisdiction[11] [12] [13].

Table 7: Jurisdiction Population

Jurisdiction	Type	Population	Jurisdiction	Type	Population
Cincinnati	City	308,664	Whitewater	Township	6,238
Green	Township	59,914	Village of Indian Hill	City	6,017
Colerain	Township	59,037	Crosby	Township	5,640
Anderson	Township	43,876	Deer Park	City	5,439
Springfield	Township	35,680	Silverton	Village	4,890
Delhi	Township	28,841	Columbia	Township	4,294
Forest Park	City	19,940	St. Bernard	Village	4,052
Sycamore	Township	19,546	Woodlawn	Village	3,844
Norwood	City	18,983	Amberley	Village	3,798

[11] United States Census Bureau. (2021). 2021: ACS 5-Year Estimates Data Profiles. Retrieved from https://data.census.gov/
[12] United States Census Bureau. (2021). Quick Facts. Retrieved from https://www.census.gov/quickfacts/
[13] Ohio Gazetter. (2022). Hometownlocator: Incorporated Cities, Town & Census Designated places in Hamilton County. Retrieved from https://ohio.hometownlocator.com/counties/cities,cfips,061,c,hamilton.cfm

Table 7: Jurisdiction Population					
Jurisdiction	Type	Population	Jurisdiction	Type	Population
Miami	Township	15,907	Golf Manor	Village	3,782
Symmes	Township	15,479	Greenhills	Village	3,711
Harrison	Township	14,351	Mariemont	Village	3,497
Blue Ash	City	13,229	Lockland	Village	3,495
Harrison	City	13,079	Cleves	Village	3,438
Sharonville	City	11,493	Lincoln Heights	Village	3,153
Springdale	City	11,024	Newtown	Village	2,679
Montgomery	City	10,796	Evendale	Village	2,639
Reading	City	10,525	Elmwood Place	Village	2,215
Loveland	City	9,645	Fairfax	Village	2147
North College Hill	City	9,605	Terrace Park	Village	2,012
Madeira	City	9,397	Glendale	Village	1,930
Wyoming	City	8,691	Arlington Heights	Village	986
Cheviot	City	8,683	Addyston	Village	916
Mt. Healthy	City	6,976	North Bend	Village	824
Milford	City	6,470			

The 2021 ACS 5-Year Estimates Data estimates were used to identify most of the villages and township population. Cities and villages with specific population data were made note of amongst the footnotes.

Population Trends

Hamilton County has experienced significant fluctuation in growth over the past 40 years and has lost more than one-tenth of its population in the past 10 years. Trends show that as the urban core of the county decreases in population, many of the rural and suburban areas increase. The 2022 data revealed that the City of Cheviot is the densest community (7,420 people per square mile), and Crosby Township is the least dense (330 people per square mile).

The estimated population for 2021 based upon estimates from the U.S. Census Bureau indicate a population of 826,790, which is an increase of 3.06% from 2010. However, the population projections provided by the Ohio Department of Development indicated the county's population will be steadily declining until 2030, with an estimated population in 2035 of 785,900. The population in 2040 is expected to increase slightly, with a projected population of 786,090.[14] The county is also becoming more diverse. From 2010 - 2020, the white population declined from 72% of the county population to 69%, while all other racial and ethnic groups grew. The 2021 estimates from the U.S. Census Bureau indicate the white population is continuing to decrease, with an estimated 70.1% of Hamilton County's population being white. The Hispanic population grew at the fastest rate, increasing its population from 1% to nearly 3.6%. These data are important for the county to consider when developing mitigation strategies and communicating them effectively to all residents.

[14] Ohio Department of Development. (2021). Ohio County Profiles: Hamilton County. Retrieved from https://devresearch.ohio.gov/files/research/C1032.pdf

Population Projection

The following table represents the population projection for Hamilton County from 2010 to 2060[15]. The estimated projection for 2060 still indicates an increase in population by over 90,000 people.

Table 8: Population Projections 2010-2060	
Year	Projection
2010	802,284
2020	817,929
2030	839,201
2040	859,230
2050	877,881
2060	895,025

Sex and Age

The following table represents the total male and female populations in Hamilton County, as well as the population totals by age group as seen on the United States Census Bureau 2021 ACS estimates. Males make up 48.6% of the county. Overall, there are more females residing in Hamilton County, with a percentage of 51.4. The county's percentage exceeds the national percentage of 50.5% female. The age group with the highest percentage is the 25 to 34 age group, with the 35 to 44 age group the second highest[16] [17].

Table 9: Sex and Age					
Subject	Number	Percent	Subject	Number	Percent
Total Population	826,790	100.0	25 to 34 Years	124,550	15.1
Male	401,601	48.6	35 to 44 Years	100,895	12.2
Female	425,189	51.4	45 to 54 Years	97,006	11.7
Under 5 Years	53,054	6.4	55 to 59 Years	56,843	6.9
5 to 9 Years	51,581	6.2	60 to 64 Years	52,298	6.3
10 to 14 Years	55,234	6.7	65 to 74 Years	75,994	9.2
15 to 19 Years	55,236	6.7	75 to 84 Years	34,334	4.2
20 to 24 Years	53,159	6.4	85 Years and Over	16,606	2.0

Children

Children represent a special population within Hamilton County. Children are more socially vulnerable and make up a significant segment of the population. The following displays the number and percentage of children in Hamilton County compared to the United States as a whole. Hamilton County's percentage of children[18] [19] in each age range is consistent with the USA percentages.

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[15] ProximityOne. (2023). Population Percent Change by County 2010-2060. Retrieved from http://proximityone.com/demographics2060.htm

[16] United States Census Bureau. (2021). *DP05:* ACS Demographic And Housing Estimates. Retrieved from https://data.census.gov/table?g=0500000US39061&tid=ACSDP1Y2021.DP05

[17] United States Census Bureau. (2021). S0101: ACS Age And Sex. Retrieved from https://data.census.gov/table?g=0500000US39061&tid=ACSST1Y2021.S0101

[18] United States Census Bureau. (2021). S0101: Age and Sex. Retrieved from https://data.census.gov/table?g=0500000US39061&tid=ACSST1Y2021.S0101.

[19] United State Census Bureau. (2021). S0101: Age and Sex. United States. Retrieved from https://data.census.gov/table?q=United+State+S0101&g=0500000US39061

Table 10: Children		
Age Group	Hamilton County (%)	United States (%)
Under 5 Years	6.4	5.9
5 to 9 Years	6.2	6.1
10 to 14 Years	6.7	6.6
15 to 19 Years	6.7	6.6

Elderly

The elderly represent a special population within Hamilton County. Elderly[20] [21] are more socially vulnerable and make up a significant segment of the population. The following displays the number and percentage of elderly in Hamilton County compared to the United States as a whole; Hamilton County has slightly lower overall percentage of those in the 65+ age groups.

Table 11: Elderly Population		
Age Group	Hamilton County (%)	United States (%)
65 to 69 Years	5.3	5.3
70 to 74 Years	3.9	4.2
75 to 79 Years	2.4	2.7
80 to 84 Years	1.7	1.8
85 Years and Over	2.0	1.9

Race and Ethnicity

The majority of the population of Hamilton County is white (70.1%), with the next highest percent being Black or African American (28.0%).

Table 12: Race[22]		
Subject	Number	Percent
Total Population	826,790	100.0
White	579,184	70.1
Black or African American	231,713	28.0
American Indian and Alaska Native	6,761	0.8
Asian	29,107	3.5
Native Hawaiian and Other Pacific	1,129	0.1
Some Other Race	17,634	0.1

School Enrollment

There is a high percentage of individuals in Hamilton County enrolled in a college or graduate school. There is also a high elementary school population.

[20] United States Census Bureau. (2021). S0101: Age And Sex. Retrieved from https://data.census.gov/table?q=United+States+Demographics&g=0500000US39061&tid=ACSST1Y2021.S0101

[21] United States Census Bureau/ (2021). S0101: Age And Sex. Retrieved from https://data.census.gov/table?q=United+States&tid=ACSST5Y2021.S0101

[22] United States Census Bureau. (2021). DP05: Demographic And Housing Estimates. Retrieved from Https://Data.Census.Gov/Table?G=0500000US39061&Tid=ACSDP1Y2021.DP05

Table 13: School Enrollment[23]		
Subject	Number	Percent
Population 3 Years and Over Enrolled	206,341	100.0
Nursery School, Preschool	13,415	6.5
Kindergarten	9,399	4.6
Elementary School (Grades 1-8)	84,507	40.9
High School (Grades 9-12)	41,481	20.1
College or Graduate School	57,539	27.9

Educational Attainment

There is a high percentage of individuals in Hamilton County which have completed some college, with 47.8 percent of the 25 and older population having a degree.

Table 14: Educational Attainment[24]		
Subject	Number	Percentage
Population 25 Years and Over	558,526	100.00
Less than 9th Grade	13,144	2.4
9th to 12th Grade, No Diploma	31,864	5.7
High School Graduate	144,656	25.9
Some College, No Degree	101,631	18.2
Associate's Degree	45,851	8.2
Bachelor's Degree	134,288	24.0
Graduate or Professional Degree	87,092	15.6

Disability Status

The total non-institutionalized population of Hamilton County with a disability is 11.9 percent. The age range with the highest percentage is 65 and older.

Table 15: Disability Status[25]		
Subject	Number	Percent
Total Civilian Noninstitutionalized	818,728	100.0
With a Disability	97,605	11.9
Under 18 Years	190,973	100.0
With a Disability	1,123	0.59
18 to 64 Years	505,996	100.0
With a Disability	7,276	1.4
65 Years and Over	121,759	100.0
With a Disability	12,700	10.4

Language Spoken

92.6 percent of the overall population in Hamilton County speaks English only. 7.4 percent of residents of Hamilton County speak a language other than English. The national average of non-English speaking populations in the United States is 21.7 percent. Hamilton County's rate is significantly lower.

[23] United States Census Bureau. (2021). S1401: School enrollment. Retrieved February 16, 2023, from https://data.census.gov/table?q=Hamilton+County+education&g=0500000US39061&tid=ACSST1Y2021.S1401

[24] United States Census Bureau. (2021). S1501: Educational attainment. Retrieved from https://data.census.gov/table?q=Hamilton+County+education&g=0500000US39061&tid=ACSST1Y2021.S1501

[25] United States Census Bureau. (2021). S1810 Disability Characteristics. Retrieved from https://data.census.gov/table?q=Hamilton+County,+Ohio+Disability&tid=ACSST5Y2021.S1810

Table 16: Language Spoken[26]		
Subject	Number	Percent
English Only	716,742	92.6
Language Other than English	56,994	7.4
Spanish	19,396	2.5
Other Indo-European Languages	17,339	2.2
Asian and Pacific Islander Languages	10,953	1.4
Other Languages	9,306	1.2

Households

The following shows the total number of households and household types in Hamilton County.

Table 17: Households by Type[27] [28]		
Subject	Number	Percent
Total Households	345,878	100.0
Family Households (Families)	197,181	57
Married-Couple Family	133,791	38.7
Male Householder, No Wife Present	73,749	21.3
Female Householder, No Husband Present	114,931	33.2
Nonfamily Households	158,454	45.8
Householder Living Alone	148,697	80.4
65 Years and Over	92,813	26.8

Insured

According to the 2021 County Profile for Hamilton County from the Ohio Department of Development, 92.3% of individuals aged 0-64 had health insurance. With 91.1% of adults aged 18-64 and 95.2% of children, under age 19, being insured in Hamilton County.[29]

Registered Voters

According to the 2021 County Profile for Hamilton County from the Ohio Department of Development there were 600,386 registered voters and of these voters, 434,956, or 72.4% voted in the 2020 election.[30]

Religion

The 2020 U.S. Religion Census summary indicated that Hamilton County has 534,553 or 64.4% of the population with a religious affiliation.[31] The religion with the highest number of adherents was Evangelical Protestant with 202,500 adherents. There are a significant number of residents

[26] United States Census Bureau. (2021). S1601: Language Spoken At Home. Retrieved from https://data.census.gov/table?q=Hamilton+County+Language&g=0500000US39061

[27] United States Census Bureau, (2021). S1101: Households And Families. Retrieved from: https://data.census.gov/table?q=Hamilton+County+Households&g=0500000US39061&tid=ACSST1Y2021.S1101

[28] United States Census Bureau. (2021). B09019. Household Type (Including Living Alone) by Relationship. Retrieved from https://data.census.gov/table?q=Hamilton+County+Households&g=0500000US39061&tid=ACSDT1Y2021.B09019

[29] Ohio Department of Development. (2021). Ohio County Profiles: Hamilton County. Retrieved from https://devresearch.ohio.gov/files/research/C1032.pdf

[30] Ibid.

[31] The Association of Religion Data Archives. (2020). Hamilton County, Ohio – County Membership Report. Retrieved from https://thearda.com/us-religion/census/congregational-membership?y=2020&y2=0&t=0&c=39061

not affiliated with a religion. According to PRRI, 27% of Hamilton County is religiously unaffiliated. This is compared to the national average of around 29% with no religion affiliation.[32]

Transient Population

The 2021 Progress Report on Ending Homelessness for Hamilton County indicated that in Hamilton County, Ohio, a total of 5,603 people resided in an emergency shelter. This is a less than one percent decrease from 2020 and a 16% decrease from 2019. In 2021, the number of people sleeping on the streets or unsheltered homelessness decreased by 10% in 2020 (a 46% decrease from 2013), while the number of people residing in emergency shelters increased by 5.8% (from 2-14 -2019). Since many homeless people (92%) resided in an emergency shelter during the year, the shelter increases far outweighed the decline in people on the streets. Of those, 15% of homeless people spent part of the year on the streets, and less than 1% resided both in emergency shelter and in places not meant for human habitation during the year; they are only included in this count once.[33]

Economy

According to the 2021 ACS estimates, 66.7% of the 16 and over population was in the labor force. Of the 437,191 civilian employed population, 84.4% were employed in the private sector. The county is currently experiencing an unemployment rate of 5.1 percent. The breakdown is included in the following table. Educational services, health care and social assistance represent the largest sector, employing over 24.9% of the workforce. The median income of households in Hamilton County estimated in 2021 was $63,080, while 11.6% of households had an annual income of less than $15,000.

Table 18: Employment by Sector[34]

Industrial Sector	% of County Workforce (2021)
Agriculture, forestry, fishing, hunting and mining	0.2
Construction	4.7
Manufacturing	11.5
Wholesale trade	2.6
Retail trade	10.5
Transportation, warehousing, and utilities	5.9
Information	1.7
Finance and insurance, real estate and leasing	8.5
Professional, scientific, management and administrative	14.0
Educational services, health care and social assistance	25.0
Arts, entertainment, recreation, accommodation and food	9.0
Other services (except public administration)	4.5
Public administration	3.1

[32] Smith, G. (2021). About Three-in-Ten U.S. Adults are Now Religiously Unaffiliated. Retrieved from https://www.pewresearch.org/religion/2021/12/14/about-three-in-ten-u-s-adults-are-now-religiously-unaffiliated/

[33] Strategies to End Homelessness. (2021). 2021 Cincinnati Homeless Data. Retrieved from https://www.strategiestoendhomelessness.org/2021-cincinnati-homelessness-data/

[34] United States Census Bureau. (2021). DP03: Selected economic characteristics. Retrieved from https://data.census.gov/table?q=Hamilton+County,+Ohio+Employment&tid=ACSDP1Y2021.DP03

Table 19: Income and Benefits in 2021[35]		
Income	**Number**	**Percent**
Total Households	345,878	100.0
Less than $10,000	25,801	7.5
$10,000 to $14,999	14,162	4.1
$15,000 to $24,999	30,770	8.9
$25,000 to $34,999	30,625	8.9
$35,000 to $49,999	40,656	11.8
$50,000 to $74,999	56,018	16.2
$75,000 to $99,999	41,775	12.1
$100,000 to $149,999	53,083	15.3
$150,000 to $199,999	24,190	7.0
$200,000 or more	28,798	8.3
Median Household Income (dollars)	63,080	

Table 20: Employment Status in 2021[36]		
Status	**Number**	**Percent**
Population 16 Years and Over	655,851	100.0
In Labor Force	437,592	66.7
+ Civilian Labor Force	437,191	66.7
Employed	414,712	63.2
Unemployed	22,479	3.4
Armed Forces	401	0.1
Not in Labor Force	218,259	33.3

Table 21: Occupation in 2021[37]		
Subject	**Number**	**Percent**
Civilian Employed Population, 16 Years and Over	414,712	100.0
Management, Business, Science, and Arts	183,647	44.3
Service Occupations	67,979	16.4
Sales and Office Occupations	87,944	21.2
Natural Resources, Construction, and Maintenance	22,542	5.4
Production, Transportation, and Material Moving	52,600	12.7

Industry

Hamilton County's major employers[38] and number of employees are depicted below in the table. The Kroger Company is the largest employer with approximately 18,000 employees. Cincinnati Children's, the county's second largest employer, and has an economic impact of more than $3 billion. National and international companies, along with numerous federal agencies, are attracted to the solid transportation systems in this area.

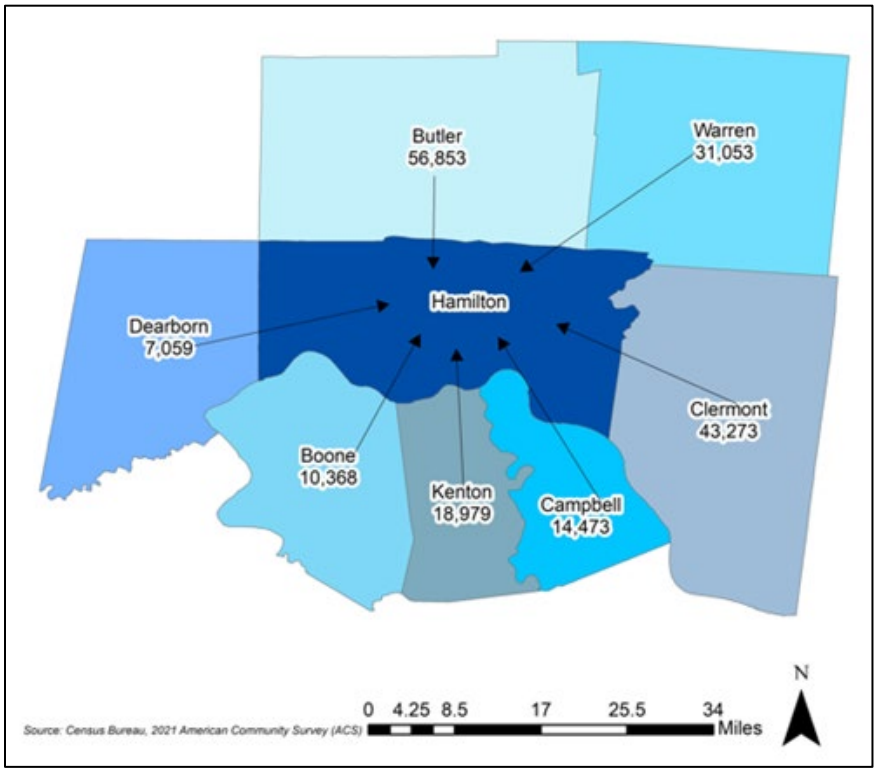
[35] Ibid.
[36] Ibid.
[37] Ibid.
[38] Redi Cincinnati. (2021). Largest Public Employers. Retrieved from https://redicincinnati.com/data-resources/largest-public-employers/

Table 22: Major Employers in Hamilton County		
Company Name	**Location**	**Employees**
Kroger Company	Cincinnati	18,000
Cincinnati Children's	Cincinnati	16,478
CVG	Cincinnati	14,602
TriHealth, Inc.	Cincinnati	12,000
St. Elizabeth Healthcare	Cincinnati	10,282
University of Cincinnati	Cincinnati	10,196
University of Cincinnati Health	Cincinnati	10,112
Proctor and Gamble, Inc.	Cincinnati	10,000
GE Aviation	Cincinnati	9,000
Fifth Third Bank	Cincinnati	7,521

Commuter Patterns

In 2019, approximately 133,944 people left Hamilton County for employment, over 265,466 commute into the county to work.[39] The following figure depicts the commuting patterns into and out of the surrounding jurisdictions in 2019.[40] The mean travel time to work was 23 minutes according to the 2021 ACS. The majority of those commuting to work, 75.4 percent, drove alone, while just 8.0% carpooled.[41]

Figure 2: Hamilton County Commuting Patterns



[39] Ohio Department of Job and Family Services. (2019). 2019 Inflows and Outflow Report Hamilton County. Retrieved from https://ohiolmi.com/_docs/Commuting/2019/Hamilton_InflowOutflow.pdf
[40] Ibid.
[41] United States Census Bureau. (2021). S0801: Commuting Characteristics by Sex. Retrieved from https://data.census.gov/table?q=Hamilton+County,+Ohio+Commute

Major Lakes, Rivers and Watersheds

Hamilton County is bounded on the south by the Ohio River and Kentucky and on the west by Indiana. Lakes within Hamilton County include Lake Isabella, Miami Whitewater Forest Lake, Sharon Woods Lake, and Winton Lake.

Following a catastrophic flood in March 1913, the Miami Conservancy District was established in 1914 to build dams and levees. The Miami Conservancy District is a river management agency operating in Southwest Ohio to control flooding of the Great Miami River and its tributaries. The county crosses five Hydrologic Unit Code (HUC) 8 watersheds. The table below lists the last data found on each watershed and the communities and bodies of water within them.

Table 23: HUC Watersheds

Watersheds	Lower Great Miami	Ohio Brush-Whiteoak	Little Miami	Middle Ohio-Laughery	Whitewater
Rivers					
Ohio River	X	X		X	
East Fork Little Miami River			X		
Great Miami River	X				
Whitewater River					X
Creeks					
Banklick Creek	X				
Blue Rock Creek	X				
Bold Face Creek				X	
Dry Fork Creek					X
Mill Creek				X	
North Branch Creek			X		
West Fork Mill Creek/Winton Lake				X	
Threemile Creek		X			
Fourmile Creek		X			
Fivemile Creek		X			
Eightmile Creek		X			
Runs					
Salt Run			X		
Stony Run		X			
Communities					
Addyston				X	
Amberley				X	
Anderson		X	X		
Arlington Heights				X	
Blue Ash			X	X	
Cheviot	X			X	
Cincinnati		X	X	X	
Cleves	X			X	
Colerain	X			X	
Columbia			X	X	
Crosby	X				X
Deer Park			X	X	
Delhi				X	

Table 23: HUC Watersheds					
Watersheds	Lower Great Miami	Ohio Brush-Whiteoak	Little Miami	Middle Ohio-Laughery	Whitewater
Elmwood Place				X	
Evendale			X	X	
Fairfax			X		
Forest Park	X			X	
Glendale				X	
Golf Manor				X	
Green	X			X	
Greenhills				X	
Harrison (City)					X
Harrison (Township)					X
Lincoln Heights				X	
Lockland				X	
Loveland			X		
Madeira			X		
Mariemont			X		
Miami	X			X	
Milford			X		
Montgomery			X	X	
Mt. Healthy				X	
Newtown			X		
North Bend	X			X	
North College Hill				X	
Norwood			X	X	
Reading				X	
St. Bernard				X	
Sharonville				X	
Silverton			X	X	
Springdale	X			X	
Springfield	X			X	
Sycamore			X	X	
Symmes			X		
Terrace Park			X		
The Village of Indian Hill			X		
Whitewater	X				X
Woodlawn				X	
Wyoming				X	

Land Use and Future Development

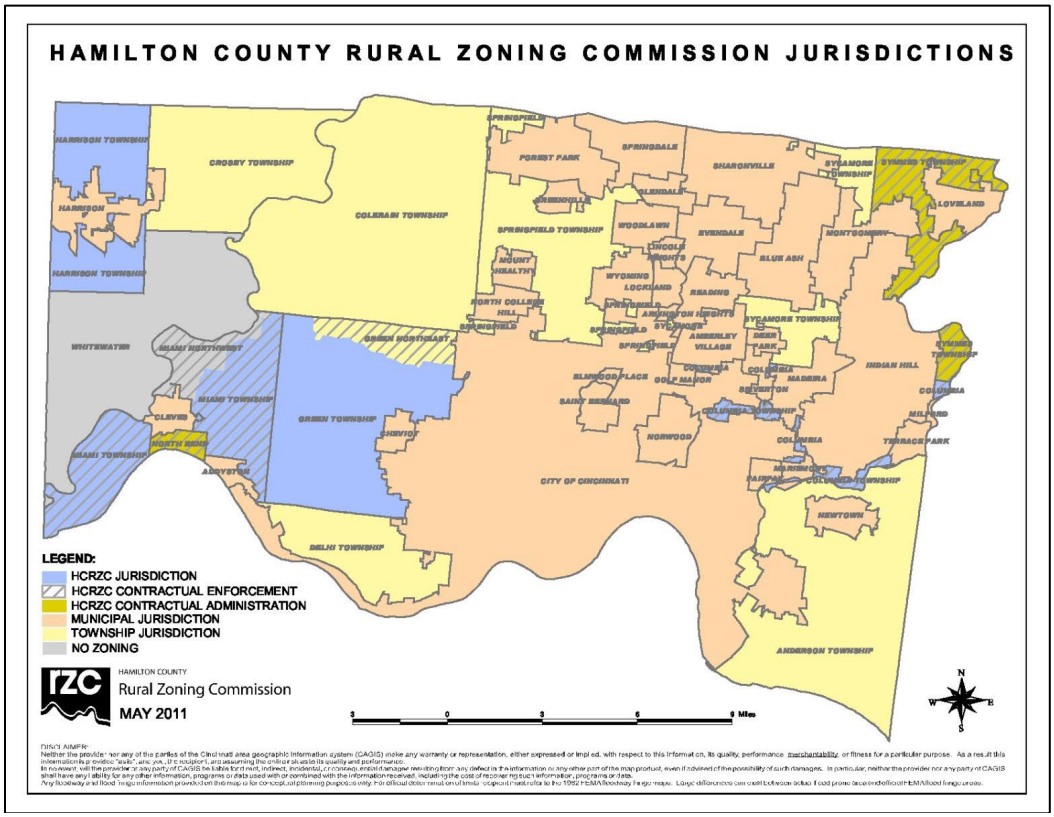
Hamilton County's Regional Planning Commission (HCRPC) provides advisory planning services to the 12 unincorporated townships of the county and provides similar services upon request to county municipalities. Its planning activities include programs for subdivision compliance, community planning, and development review to ensure that land use control is consistent with

zoning regulations.[42] HCRPC is a consortium member to the Cincinnati Area Geographic Information System (CAGIS) and receives notifications of new roadways, zone changes, jurisdiction annexation changes, and school district changes that require updates in the CAGIS database. Technical support for communities includes geographic mapping and analysis, census analysis and reports, database design and management, and more. Cities, townships, and villages in Hamilton County have made updates to their land use and have started thinking about future development. For example, the government of Blue Ash has begun renovation of a tower at Summit Park, while North Bend has begun the development of 14 acres of riverfront property on newly purchased land.

Zoning and Land Use Maps

The Rural Zoning Commission Zoning Inspectors serve the residents of Hamilton County by enforcing zoning regulations. The following map shows the zoning commission jurisdictions and is still being used.[43]

Figure 3: Zoning Jurisdictions



[42] Hamilton County. (2023). Regional Planning Commission. Retrieved from https://www.hamiltoncountyohio.gov/government/departments/planning_and_development/boards_and_commissions/regional_planning_commission

[43] Hamilton County. (2011). Hamilton County Rural Zoning Commission Jurisdictions. Retrieved from https://www.hamiltoncountyohio.gov/government/departments/community_planning/data_products

HCRPC has also adopted land use plans for all or portions of 9 townships. These plans guide future development as part of a continuous planning process and serve as advisory documents in the review of zoning and development decisions. The CAGIS Internet Server (http://cagisonline.hamilton-co.org/cagisonline/index.html) provides interactive versions of zoning and land use maps to the public. Additional land use plans are included in the Annex of Community Snapshots.

Critical Infrastructure

Communications

According to the 2021 County Profile for Hamilton County provided by the Ohio Department of Development, there are 6 television stations, 27 radio stations, 1 daily newspaper and 1 weekly newspaper within Hamilton County.[44]

Water Control Structures

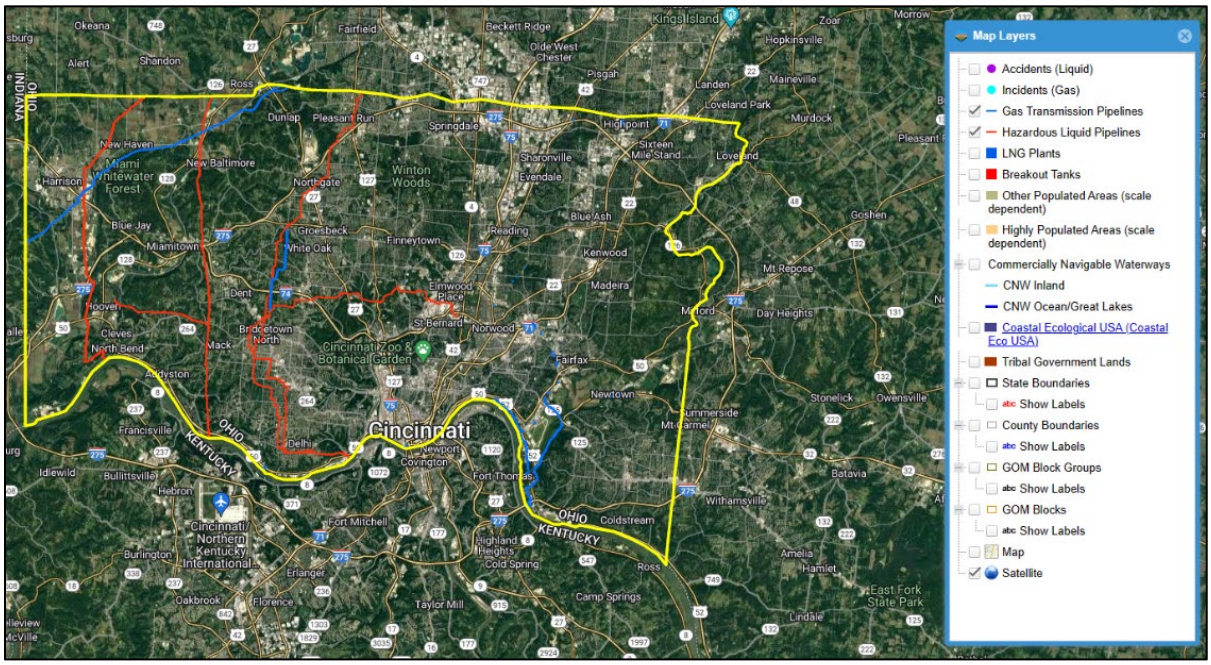
The National Inventory of Dams webpage provided data on "high" or "significant" hazard dams in Ohio. According to the National Inventory of Dams, there are over 30 dams within Hamilton County and of these, 7 dams are listed as being "High" or "Significant" hazard dams. Further detail on high hazard dams can be found in the Dam Hazard Profile.

Pipelines

The National Pipeline Mapping System Public Map Viewer shows there are both hazardous liquid and gas pipelines which run through Hamilton County. There are hazardous liquid pipelines and Gas Pipelines which run through or near Green (Bridgetown North, Covedale, Monfort Heights) and Miami Township (Mack), Crosby Township (New Baltimore, New Haven), Harrison (White Water Park), Whitewater (Hooven), North Bend, North Gate, Colerain (Pleasant Run), Elmwood Place, and Delhi.

[44] Ohio Department of Development. (2021). Ohio County Profiles: Hamilton County. Retrieved from https://devresearch.ohio.gov/files/research/C1032.pdf

Figure 4: Existing Pipelines in Hamilton County[45]



Freight Rail

There are multiple Freight Railways which run through Hamilton County. The data last captured shows that the Indiana & Ohio Central Railroad runs through Madeira, Norwood, and Whitewater Township. The Cincinnati Terminal Railway Company runs through Norwood. The CSX Transportation, Inc. runs through Cincinnati, Norwood and Forest Park. The Norfolk Southern Corporation runs through Cincinnati. The Central Railroad Company of Indiana runs from Cincinnati to Miami Township.

Transportation

There are main highways which run through Hamilton County. They are Interstate 71, Interstate 74, Interstate 75, Interstate 471 and Interstate 275 serve the county.[46] The Norwood Lateral and Ronald Reagan Cross County Highway are also prominent east-west thoroughfares in the county. Cincinnati/Northern Kentucky International Airport (IATA: CVG) is the major international airport serving the metropolitan area and is located across the river in Hebron, Kentucky. Lunken Airport is another airport that serves Hamilton County and is a general aviation airport owned and managed by the City of Cincinnati. It is located on 1,140 acres east of downtown in Cincinnati's Columbia-Tusculum neighborhood. The airport serves corporate, private and charter aircraft.[47] Additionally, there are multiple modes of public transportation in Cincinnati. These include buses, streetcars, public steps, bikeshare and Amtrak.

[45] Hazardous Materials Safety Administration (PHMSA). (2023). National Pipeline Mapping System (NPMS). Retrieved from https://pvnpms.phmsa.dot.gov/PublicViewer/

[46] Ohio Department of Transportation. (2019). Map resources. Retrieved from https://www.transportation.ohio.gov/static/About/maps/counties/Hamilton.jpg

[47] City of Cincinnati. (2023). Lunken Airport. Retrieved from https://www.cincinnati-oh.gov/dote/lunken-airport/

Waterways

Hamilton County is located on the Ohio River. The other major waterways in Hamilton County are the Great Miami River, the Little Miami River and the Whitewater River. The Ohio River is a commercially navigable waterway managed by the Port of Cincinnati and Northern Kentucky. The jurisdiction includes 226.5 miles of the Ohio River and Licking River and has boundaries with 15 counties in both Ohio and Kentucky, including Hamilton County in Ohio.[48]

Water/Wastewater

The Metropolitan Sewer District of Greater Cincinnati (known as MSD) protects public health and the environment through the safe and efficient collection and treatment of wastewater for 43 of the 49 political subdivisions in Hamilton County, Ohio, and small parts of Butler, Clermont, and Warren counties.[49] MSD's service area encompasses 290+ square miles and serves a population of more than 850,000. MSD maintains about 3,000 miles of sanitary and combined sewers and operates seven major wastewater treatment plants, more than 100 pump stations, two package treatment plants and several high-rate treatment facilities. About 180 million gallons of wastewater is treated daily. [50] MSD has a ratepayer base of about 226,000 residential, commercial, and industrial customers. Within that base, it monitors about 200 industrial users who discharge pre-treated waste into the sewer system. MSD was formed in 1968 as a county sewer district under state law. Prior to 1968, the City of Cincinnati operated an independent municipal sewer district that served city residents and 23 suburban communities. MSD is governed by a 50-year agreement between the City of Cincinnati and Hamilton County, known as the 1968 Agreement. As set forth in this Agreement, the City is responsible for the management and operation of the sewer district, while the Board of County Commissioners of Hamilton County, Ohio retains the authority to establish sewer service charges, adopt rules and regulations, and approve operating and capital improvement program (CIP) budgets. The agreement expired April 30, 2018,[51] however, this agreement has been extended indefinitely.[52]

Energy Sector

The Energy Management Division of the County monitors energy usage utilizing state-of-the-art energy monitoring programs to assess equipment malfunctions and identifies potential energy conservation measures for Hamilton County buildings/facilities. They are also responsible for procuring and providing utilities such as natural gas, electricity, water and sewerage to County buildings. Part of this includes identifying and implementing energy conservation projects. Duke Energy delivers electricity to 840,000 homes and businesses in the State of Ohio. Its 3,000-square mile service area includes Hamilton County.[53] Duke Energy also provides natural gas distribution

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[48] Cincinnati Port (2023). Ports of Cincinnati and Northern Kentucky Re-designation. Retrieved from https://www.cincinnatiport.org/projects/ports-of-cincinnati-and-northern-kentucky-re-designation/

[49] Metropolitan Sewer District. (2022). Communities We Serve. Retrieved from https://www.msdgc.org/About_msd/Who_We_Are/communities_we_serve/index.html

[50] Metropolitan Sewer District. (2022). Metropolitan Sewer District of Greater Cincinnati (MSD). Retrieved from https://ngicp.org/project/metropolitan-sewer-district-of-greater-cincinnati-msd

[51]

[52] Metropolitan Sewer District. (2022). MSD Rules & Regulations. Retrieved from https://www.msdgc.org/doing_business/msd-rules-regulations/index.html

[53] Duke Energy. (2016). Who We Are. Retrieved from https://www.duke-energy.com/our-company/about-us/businesses/regulated-utilities

services. Additional public and private companies provide electricity and natural gas to the cities, villages, and townships of Hamilton County.

Key Resources

Food and Agriculture

The 2017 Census of Agriculture, the latest data updated, indicated there are 318 farms in Hamilton County totaling 17,970 acres. The top crop items in Hamilton County in 2017 were forage-and used for all hay and haylage, soybeans for beans, corn for grain, vegetables harvested, Sod harvested.[54] Note that the Census of Agriculture is conducted every five years. The 2022 Census is still under development as of May 31, 2023.

Banking and Finance

According to the 2021 County Profile from the Ohio Department of Development, there are 15 FDIC insured financial institutions with $759,032,023 in assets. There are 270 branch offices with 39 institutions represented.[55]

Critical Manufacturing

The Ohio Manufacturer's Association published a document called Manufacturing Counts, which indicated in 2020 there were 930 manufacturing establishments. In 2020, there were approximately 48,571 individuals employed in manufacturing in Hamilton County. In 2019, the Ohio Department of Development indicated that the direct earnings of manufacturing were approximately $4 billion[56] and total economic output of manufacturing in was over $100 billion.[57]

Monuments and Icons

According to Ohio Civil War Central, there are several civil war monuments located in Hamilton County.[58]

- Blue Ash Bicentennial Veterans Memorial, Blue Ash Towne Square, Blue Ash
- Blue Ash Millennium American Heritage Bell Tower, Blue Ash Towne Square, Blue Ash
- Abraham Lincoln Statue, Lytle Park, Cincinnati
- James A. Garfield Monument, Platt Park, Cincinnati
- Hamilton County Memorial Building, 1225 Elm Street, Cincinnati
- Friedrich Hecker Monument, Washington Park, Cincinnati
- Robert L. McCook Monument, Washington Park, Cincinnati
- Soldier Monument, Spring Grove Cemetery, Cincinnati
- 5th Regiment Ohio Volunteer Infantry Monument, Spring Grove Cemetery, Cincinnati
- William Haines Lytle Gravesite, Spring Grove Cemetery, Cincinnati
- Fighting McCooks Gravesite, Spring Grove Cemetery, Cincinnati

[54] USDA. (2017). County Profile: Hamilton County, Ohio. Retrieved from https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Ohio/cp39061.pdf
[55] Ohio Department of Development. (2021). Ohio County Profiles: Hamilton County. Retrieved from https://devresearch.ohio.gov/files/research/C1032.pdf
[56] Ibid.
[57] Ibid.
[58] R. Squared Communications LLC. (2023). Ohio Civil War Monuments. Retrieved from https://www.ohiocivilwarcentral.com/ohio-civil-war-monuments/

- Cannon, Spring Grove Cemetery, Cincinnati
- Stephen Foster Monument, Alms Park, Cincinnati
- Flagpole, Eden Park, Cincinnati
- Camp Dennison Monument, State Route 126, Indian Hill

Industrial Defense Base

Ohio's aerospace product & parts manufacturing industry (NAICS 33641) includes establishments manufacturing aircraft, missiles, space vehicles, aerospace engines propulsion units and aircraft or propulsion system rebuilding. In 2022, Ohio ranked as fourth nationally in the aerospace product & parts manufacturing industry. According to the Ohio Department of Jobs and Family Services, in 2021 Ohio employed 15,708 workers at 150 establishments.[59] The top five states including Ohio, were Texas, Georgia, North Carolina, and Indiana.[60]

Thirty-two Ohio counties contain companies that have defense contracts valued at more than $1 million. The top five Ohio counties are Hamilton ($31,010,659,265), Greene ($12,271,616,776), Montgomery ($10,373,725,613), Franklin ($23,250,472,962) and Summit ($6,487,284,237).[61]

Healthcare

The 2021 County Profile provided by the Ohio Department of Development indicated that there are 4,791 physicians in Hamilton County. There are 14 registered hospitals with 4,130 beds. There are 75 licensed nursing homes with 7,398 beds available. Additionally, there are 46 licensed residential care facilities with 5,755 beds available. The total percentage of persons with health insurance aged 0 to 64 is 92.3%.[62]

Universities

Approximately 13.2% of Hamilton County residents work in educational, professional, scientific, or technical services. There are 3 private universities and colleges, 1 2-year public college and 1 4-year public university located in Hamilton County.[63]

Emergency Services

In the Greater Cincinnati area, EMS is handled by community Fire Departments. Most of these departments employ a large number of paid part-time staff. There are 38 fire departments which serve the residents of Hamilton County. The Hamilton County Fire Chief's Association has a website with detailed information on the various emergency services provided to the residents in Hamilton County.[64]

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[59] Ohio Department of Job and Family Services. (2021). Quarterly Census of Employment and Wages (QCEW) Data Search. Retrieved from https://ohiolmi.com/Home/DS_Results_QCEW

[60] PWC. (2022). 2022 Aerospace Manufacturing Attractiveness Ranking. Retrieved from https://www.pwc.com/us/en/industries/industrial-products/library/aerospace-manufacturing-attractiveness-rankings.html

[61] Government Contracts Won. (2020). Ohio Defense Contractor Lists by County United States Government Contracts. Retrieved from https://www.governmentcontractswon.com/department/defense/ohio_counties.asp

[62] Ohio Department of Development. (2021). Ohio County Profiles: Hamilton County. Retrieved from https://devresearch.ohio.gov/files/research/C1032.pdf

[63] Ibid.

[64] Hamilton County Fire Chief's Association, (2023). Hamilton County Emergency Medical Services (EMS). Retrieved from: http://www.hamiltoncountyfirechiefs.com/

Building Stock

Housing Stock

The 2021 ACS from the U.S. Census indicated there are 353,674 housing units in Hamilton County. Of these, 26,701 are vacant. Much of the housing stock consists of 1-unit detached housing units, with this type making up 59.9% of the housing stock. The age of the housing stock in Hamilton County is also noteworthy, as the highest percentage of housing units, 27.6%, were built in 1960 to 1979. The next highest percentage of housing units was built in 1939 or earlier, with 23.3%.[65] According to the 2021 Housing Needs Assessment, in 2019 Hamilton County had a housing vacancy rate of 1.10%.[66]

Community Capability Assessment

The capability assessment identifies current activities used to mitigate hazards. The capability assessment identifies the policies, regulations, procedures, programs, and projects that contribute to the lessening of disaster damages. The assessment also provides an evaluation of these capabilities to determine whether the activities can be improved to reduce the impact of future hazards more effectively. The following sections identify existing plans and mitigation capabilities within all the communities listed in this Plan.

National Flood Insurance Program (NFIP)

As of May 2023, thirty-three municipalities within Hamilton County and the county itself are members of the NFIP. The table below identifies each community and the date each participant joined the NFIP. FEMA does not include townships in the NFIP Community Status Book Report; they fall under unincorporated county's NFIP participation. None of the jurisdictions within Hamilton County have chosen to participate in the NFIPs Community Rating System (CRS). The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions, meeting the three goals of the CRS: 1) reduce flood losses; 2) facilitate accurate insurance ratings; and 3) promote the awareness of flood insurance.

Table 24: Communities Participating in the NFIP

Name	Type	Participation Date	FIRM Date
Addyston	Village	03/01/74	08/15/83
Amberley	Village	N/A	09/30/80
Arlington Heights	Village	02/01/74	12/18/86
Blue Ash	City	02/21/75	08/01/80
Cheviot	City	06/07/74	05/17/04
Cincinnati	City	06/28/74	10/15/82
Cleves	Village	07/23/76	02/01/84
Elmwood Place	Village	02/01/74	12/18/84
Evendale	Village	03/01/74	09/29/86

[65] United States Bureau. (2021). S2504: Physical Housing Characteristics for Occupied Housing Units. Retrieved from https://data.census.gov/table?q=Hamilton+County,+Ohio+Housing&tid=ACSST1Y2021.S2504

[66] Ohio Housing Finance Agency. (2021). Housing Stock. Retrieved from https://ohiohome.org/research/housingstock-hna.aspx#vacancy

Table 24: Communities Participating in the NFIP			
Name	Type	Participation Date	FIRM Date
Fairfax	Village	01/31/75	11/15/79
Forest Park	Village	N/A	05/17/04
Glendale	Village	N/A	05/17/04
Greenhills	Village	01/25/74	09/01/93
Hamilton	County	04/14/78	06/01/82
Harrison	City	02/15/74	04/03/85
Lincoln Heights	Village	02/01/74	05/17/04
Lockland	Village	02/15/74	09/04/86
Loveland	City	02/01/74	09/01/78
Madeira	City	02/07/75	11/15/79
Mariemont	Village	02/08/74	05/17/04
Milford	City	02/08/74	01/16/81
Montgomery	City	06/28/74	06/25/76
Mt. Healthy	City	06/07/74	12/15/78
Newtown	Village	02/01/74	12/15/83
North Bend	Village	03/15/74	10/18/83
North College Hill	City	06/07/74	09/29/86
Reading	City	02/08/74	12/18/86
Sharonville	City	04/12/74	01/02/87
Springdale	City	08/14/81	12/05/90
St. Bernard	Village	05/10/74	09/19/84
Terrace Park	Village	02/08/74	01/05/84
Village of Indian Hill	City	06/28/74	05/01/85
Woodlawn	Village	02/01/74	09/04/86
Wyoming	City	02/01/74	03/02/79

Communities that are participating in the 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).

Figure 5: Substantial Damage Measurement

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

Enforcing the SI/SD requirements is a very important part of a community's floodplain management responsibilities[67]. 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.

Plans and Ordinances

The Rural Zoning Commission Zoning Inspectors serve the residents of Hamilton County by enforcing the Zoning Resolution. Their activities include the following:

- Investigate complaints and abate zoning violations
- Provide updated zoning violation status reports to Township Officials
- Maintain records of zoning violation notices and abatement actions
- Review actual construction for compliance with issued zoning certificate
- Monitor continued compliance of new and existing Specific Planned Unit Developments
- Assist in contract services for Symmes, Green and Harrison townships

Hamilton County underwent floodplain map modernization beginning in August 2005 and ending with a Letter of Final Determination in August 2009. These maps were adopted by the county on February 17, 2010, and became effective on that date. The county currently has Flood Damage Prevention Regulations adopted by the county commissioners. Each participating jurisdiction has the full capability and authority to expand upon its capabilities.

Table 25: Community Plans and Ordinances

Community	Planning Commission	Comp Plan	Floodplain Regulations	Building Codes[1]	Zoning Ordinance	Capital Budget[2]	Public Works Budget
Hamilton County	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Addyston	YES	YES	YES	YES	YES	NO	Limited in-kind wages only

[67] FEMA Substantial Improvement/Substantial Damage Desk Reference, P-758. (2010). Retrieved from https://www.fema.gov/sites/default/files/documents/fema_nfip_substantial-improvement-substantial-damage-desk-reference.pdf

Table 25: Community Plans and Ordinances							
Community	Planning Commission	Comp Plan	Floodplain Regulations	Building Codes[1]	Zoning Ordinance	Capital Budget[2]	Public Works Budget
Amberley	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Arlington Heights	YES	YES	NO	YES	YES	NO	Limited in-kind wages only
Blue Ash	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Cheviot	YES	NO	NO	YES	YES	NO	Limited in-kind wages only
Cincinnati	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Cleves	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Deer Park	YES	YES	NO	YES	YES	NO	Limited in-kind wages only
Elmwood Place	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Evendale	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Fairfax	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Forest Park	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Glendale	YES	YES	NO	YES	YES	NO	Limited in-kind wages only
Golf Manor	YES	YES	NO	YES	YES	NO	Limited in-kind wages only
Greenhills	YES	YES	YES	YES	YEs	NO	Limited in-kind wages only
Harrison	YES	YES	NO	YES	YES	NO	Limited in-kind wages only
Lincoln Heights	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Lockland	YES	YES	NO	YES	YES	NO	Limited in-kind wages only
Loveland	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Madeira	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Mariemont	YES	NO	YES	YES	YES	NO	Limited in-kind wages only
Milford	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Montgomery	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Mt. Healthy	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Newtown	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
North Bend	YES	YES	YES	YES	YES	NO	Limited in-kind wages only

Table 25: Community Plans and Ordinances							
Community	Planning Commission	Comp Plan	Floodplain Regulations	Building Codes[1]	Zoning Ordinance	Capital Budget[2]	Public Works Budget
North College Hill	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Norwood	YES	YES	NO	YES	YES	NO	Limited in-kind wages only
Reading	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Sharonville	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Silverton	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Springdale	YES	NO	YES	YES	YES	NO	Limited in-kind wages only
St. Bernard	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Terrace Park	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Village of Indian Hill	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Woodlawn	YES	YES	YES	YES	YES	NO	Limited in-kind wages only
Wyoming	YES	YES	YES	YES	YES	NO	Limited in-kind wages only

[1]All jurisdictions within the state now follow the State Building Code (Ohio Administrative Code 4101.1)
[2]Budget that would allow the jurisdiction to devote financial resources toward hazard mitigation activities.

Each NFIP participating jurisdiction has a designated Floodplain Managers that are charged with enforcing floodplain regulations, routinely monitoring the floodplains, and providing community assistance such as encouraging owners to maintain flood insurance. Hamilton County adopted Flood Damage Prevention Regulations by passing a resolution, which is available to the public on the county website[68]. See Table 26 below.

Table 26: Floodplain Managers in Hamilton County					
Jurisdiction	**Name**	**Title**	**DFPA**	**Address**	**Phone Number**
Addyston	Dick, Weber	Building Inspector	Zoning Inspector	P.O Box 536, 235 Main St, Addyston, OH 45001	513-941-1060
Amberley	Scott Lahrmer	Village Manager	Mayor	7149 Ridge Rd., Amberley, OH 45237	513-531-8675
Arlington Heights	Jeff McLemore	Building Service Director	Building Inspector	601 Elliot Ave., Cincinnati, OH 45215	513-821-2076
Blue Ash	Gordon Perry	Public Works Director	City Engineer	4343 Cooper Rd., Blue Ash, OH 45242	513-745-8545

[68] http://www.hamiltoncountyohio.gov/pubworks/hcpw_sfha.asp.

Table 26: Floodplain Managers in Hamilton County					
Cheviot	Samuel Keller	Mayor	None	3814 Harrison Ave., Cheviot, OH 45211	513-661-2700
Cincinnati	Art Dahlberg	FPA & Director of Building Inspections	Director of Building Inspections	805 Central Ave, Suite 500, Cincinnati, OH 45225	513-352-2424
Cleves	Mike Rahall	Village Administrator	Street Commissioner	101 N. Miami Ave., Cleves, OH 45002	513-941-5127
Elmwood Place	William Wilson	Mayor	Mayor	6118 Vine St., Elmwood Place, OH 45216	513-242-0291
Evendale	James Jeffers	Village Engineer	Village Engineer	10500 Reading Rd., Evendale, OH 45241	513-793-7410
Fairfax	Jennifer Kaminer	Floodplain Administrator	Building Official	5903 Hawthorne Ave., Fairfax, OH 45227	513-527-6505
Forest Park	David Buesking	Director of Public Works	Director of Public Works	1201 West Kemper Rd., Forest Park, OH 45240	513-595-5258
Glendale	Kevin Hardwick	Fire Chief	Floodplain Administrator	30 Village Square, Glendale, OH 45246	513-771-7200
Greenhills	Evonne Kovach	Building Official	Zoning Inspector	11000 Winton Rd., Greenhills, OH 45218	513-589-3586
Hamilton County	Olivia Maltry	Project Manager/Floodplain Technician	Department of Public Works	138 East Court St., Room 801, Cincinnati, OH 45202	513-946-4760
Harrison	Shannon Hamons	Building Director	Director of Buildings	300 George St., Harrison, OH 45030	513-202-8492
Indian Hill	John West	Assistant City Manager	Assistant City Manager	6525 Drake Rd., Indian Hill, OH 45243	513-561-6500
Lincoln Heights	Donna Pope	Village Manager	None	1201 Steffens Ave., Lincoln Heights, OH 45215	513-733-5900
Lockland	Krista Blum	Code Enforcement Officer	Code Enforcement Officer	101 North Cooper Ave., Lockland, OH 45215	513-761-1124
Loveland	Cindy Klopfenstein	City Engineer	Building & Zoning Administrator	120 W. Loveland Ave., Loveland, OH 45140	513-707-6114
Madeira	Michael Norton-Smith	City Manager	City Manager	7141 Miami Ave., Madeira, OH 45243	513-561-7228

Table 26: Floodplain Managers in Hamilton County					
Mariemont	Bill Brown	Mayor	Mayor	6907 Wooster Pike, Mariemont, OH 45227	513-271-3246
Montgomery	Kevin Chesar	Community Development Director	Zoning Administrator	10101 Montgomery Rd., Montgomery, OH 45242	513-792-8329
Mount Healthy	Gordon Wong	Building Inspector	Building Official	7700 Perry St., Mount Healthy, OH 45231	513-728-3182
Newtown	Gerry Stoker	Building & Zoning Commissioner	Building Commissioner	3537 Church St., Newtown, OH 45244	513-561-7697
North Bend	Doug Sammons	Mayor	Hamilton Co. Dept. of Public Works	21 Taylor Ave., North Bend, OH 45052	513-941-0610
North College Hill	Bill Knight	Inspector	Building Commissioner	1500 West Galbraith Rd., Cincinnati, OH 45239	513-787-4128
Reading	Patrick Ross	Safety Service Director	Safety Service Director	1000 Market St., Reading, OH 45215	513-376-2501
Sharonville	Jim Lukas	Deputy Safety Service Director	Director	10900 Reading Rd., Sharonville, OH 45241	513-563-1144
Springdale	Carl Lamping	Building Official	Mayor	11700 Springfield Pike, Springdale, OH 45246	513-346-5730
St. Bernard	Gerry Stoker	Building Commissioner	Code Assistance Officer	110 Washington Ave., St. Bernard, OH 45217	513-482-7495
Terrace Park	Tom Tepe	Mayor	Building Inspector	428 Elm Ave., Terrace Park, OH 45174	513-831-2138
Woodlawn	Allen Geans	Municipal Manager	Village Manager	10141 Woodlawn Blvd., Woodlawn, OH 45215	513-771-6130
Wyoming	Megan Statt Blake	Community Development Director	City Manager or Designee	800 Oak Ave., Wyoming, OH 45215	513-842-1397

HAZARD IDENTIFICATION & RISK ASSESSMENT

Hamilton County completed its initial MHMP in 2007 and updated it again in 2013, 2018 and now in 2023. Each of the 49 participating jurisdictions (see Table 1) within Hamilton County participated in this Plan and, upon adoption, are covered by this Plan. The City of Milford is participating in and will adopt Clermont County's mitigation plan.

This Plan is designed to comply with requirements of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, and Related Authorities and 44 CFR Part 201, which states that local governments, to be eligible for pre-disaster and/or post-disaster mitigation funds, must have an approved Hazard Mitigation Plan in place. This Plan is also designed to comply with the Federal Emergency Management Agency (FEMA) and Ohio Emergency Management Agency (Ohio EMA) guidance documents (particularly the Local Multi-Hazard Mitigation Planning Guidebook, dated 2013, and the Local Mitigation Planning Policy Guide, Effective April 19, 2023) and other applicable federal, state, and local regulations. This was accomplished by evaluating the impacts of known natural, technological, and human caused hazards, prioritizing mitigation alternatives and coordinating hazard mitigation with other Hamilton County programs and policies.

Risk Assessment Methodology

As part of Hamilton County's Emergency Management Program, this Risk Assessment identifies the natural, technological, and human-caused hazards that have potential impacts on all or portions of the county. Hazard identification, historical occurrences, and risk modeling (where applicable and available for specific hazards) information was collected from multiple sources including but not limited to:

- Environmental Systems Research Institute (ESRI),
- Federal Emergency Management Agency (FEMA),
- National Centers for Environmental Information (NCEI),
- National Fire Incident Reporting System (NFIRS),
- National Weather Service (NWS),
- United States Geological Survey (USGS),
- and local repositories.

This information was then analyzed to assess risk and vulnerability of people, property, the environment, and its own operations from these hazards. To that end, a risk ranking was performed for the hazards of concern described in this plan. The risk ranking is a key step in developing an action plan, as it allows jurisdictions to compare the risk factors of one hazard to another. That comparison provides critical information to use in selecting hazard mitigation actions and their priorities. This process is not only intended to help focus actions on the hazards with the highest rankings, but also to ensure that jurisdictions do not forget about hazards that ranked low yet still pose significant risk.

In order to provide an informed and comprehensive ranking of the hazards addressed in this plan, several categories of factors were considered: extent, vulnerability impact and probability. The

sum of all the weighted factors for the extent, vulnerability, and impact categories were combined into a final consequence score. Probability multiplied by consequence resulted in a total risk score for each hazard.

Figure 6: Total Risk Score Formula

$$Extent + Vulnerability + Impact = Consequence$$

$$Consequence \times Probability = TotalRiskScore$$

These results were determined by following a data-driven quantitative assessment, from reviewing and ranking local knowledge from local subject matter experts, to developing other risk elements by the Core Planning Team based on the data collected. These elements were then aggregated to inform the analysis.

At the fundamental level, consequence is an assessment of the potential impact(s) if the hazard incident actually occurs. In this assessment, the consequence of an event (or the impact) will be interdependent on the following factors: vulnerabilities (i.e. social, physical, and community conditions), capabilities and capacities, mitigation, and the characteristics (i.e. magnitude, scale, etc.) of the hazard event. Again, the frequency/probability of the hazard is not included in assessing the consequence because without the event, there is no consequence or impact.

Extent Factors

Extent was assessed in two sub-categories: hazard duration and intensity potential. Numerical impact factors were assigned as follows:

Duration—Duration is defined as the range of time that the hazard, its impact, and the following recovery could potentially be.

- **High**—The hazard, its impacts and the recovery could last for years (Extent Factor = 3)
- **Medium**—The hazard, its impacts and the recovery could last for months (Extent Factor = 2)
- **Low**—The hazard, its impacts and the recovery could last for weeks (Extent Factor = 1)
- **Unlikely**—The hazard, its impacts and the recovery could last for days at most (Extent Factor = 0)

Intensity—The potential that an occurrence of this hazard could be catastrophic. Catastrophic incidents are those that cause extraordinary levels of mass casualties, damage, or disruption that could severely affect a jurisdiction's operations, populations, economy, and/or morale. Historical studies, probabilistic models, and subject matter expertise all influence determinations of potential hazard intensity

- **High**—High potential that this hazard could be catastrophic (Extent Factor = 3)
- **Medium**—Medium potential that this hazard could be catastrophic (Extent Factor = 2)

- **Low**—Low potential that this hazard could be catastrophic (Extent Factor = 1)
- **Unlikely**—Virtually no potential that this hazard could be catastrophic (Extent Factor = 0)

Each category was assigned a weighting factor to reflect its significance, consistent with those typically used for measuring the benefits of hazard mitigation actions: a weighting factor of 1 was assigned for *Duration* and a factor of 3 was assigned to *Intensity*.

Vulnerability Factors

Vulnerabilities were assessed in three sub-categories: population exposure, property exposure, and exposure based on changes in development. Numerical factors were assigned as follows:

People—Values were assigned based on the percentage of the total population exposed to the hazard event.

- **High**—25% or more of the population is exposed to, or could be impacted by, a single occurrence of the hazard (Vulnerability Factor = 3)
- **Medium**—6% to 24% of the population is exposed to, or could be impacted by, a single occurrence of this hazard (Vulnerability Factor = 2)
- **Low**—5% or less of the population is exposed to, or could be impacted by, a single occurrence of this hazard (Vulnerability Factor = 1)
- **No Vulnerability**—None of the population is exposed to, or could be impacted by, a single occurrence of this hazard (Vulnerability Factor = 0)

Property Exposed—Values were assigned based on the percentage of the total property value exposed to the hazard event.

- **High**—25% or more of the total assessed property value is exposed to, or could be impacted by, a single occurrence of the hazard (Vulnerability Factor = 3)
- **Medium**—6% to 24% of the total assessed property value is exposed to, or could be impacted by, a single occurrence of this hazard (Vulnerability Factor = 2)
- **Low**—5% or less of the total assessed property value is exposed to, or could be impacted by, a single occurrence of this hazard (Vulnerability Factor = 1)
- **No Vulnerability**—None of the total assessed property value is exposed to, or could be impacted by, a single occurrence of this hazard (Vulnerability Factor = 0)

Changes in Development —Changes in development since the previous plan was approved have increased or decreased the community's vulnerability/exposure to this hazard.

- **High**—Changes in development have significantly increased the vulnerability/exposure of the community to this hazard (Vulnerability Factor = 3)
- **Medium**—Changes in development have increased the vulnerability/exposure of the community to this hazard, but not significantly (Vulnerability Factor = 2)
- **Low**—Changes in development have minimally increased the vulnerability/exposure of the community to this hazard (Vulnerability Factor = 1)

- **No Vulnerability**—Changes in development have had no effect and/or have decreased the vulnerability/exposure of the community to this hazard (Vulnerability Factor = 0)

Each category was assigned a weighting factor to reflect its significance, consistent with those typically used for measuring the benefits of hazard mitigation actions: a weighting factor of 3 was assigned for *People*, a factor of 2 *Property Exposed,* and 1 for *Changes in Development*.

Impact Factors

Hazard impacts were assessed in eight sub-categories: population and life/safety, underserved/equity, property damages, economy, own operations, future development, environment, and climate change. Numerical impact factors were assigned as follows:

Population and Life/Safety—Values were assigned based on 1.) subject matter expertise and/or best available data for populations vulnerable to the hazard event, and 2). whether affected populations are likely to experience adverse impacts from the hazard incident.

- **High**—Populations exposed to this hazard are likely to experience significant adverse impacts (Impact Factor = 3)
- **Medium**—Populations exposed to this hazard are likely to experience some adverse impacts (Impact Factor = 2)
- **Low**—Populations exposed to this hazard are likely to experience minimal adverse impacts (Impact Factor = 1)
- **No impact**—Populations exposed to this hazard are not likely to experience significant adverse impacts (Impact Factor = 0)

Impact to Underserved/Equity—Values were 1). assigned based on subject matter expertise and/or best available data for underserved populations vulnerable to the hazard event, and 2). whether affected populations are likely to experience adverse/disproportionate impacts from the hazard incident resulting in greater disparity in equity.

- **High**—Underserved populations exposed to this hazard are likely to experience significant adverse/disproportionate impacts (Impact Factor = 3)
- **Medium**—Underserved populations exposed to this hazard are likely to experience some adverse/disproportionate impacts (Impact Factor = 2)
- **Low**—Underserved populations exposed to this hazard are likely to experience minimal adverse/disproportionate impacts (Impact Factor = 1)
- **No impact**—Underserved populations exposed to this hazard are not likely to experience significant adverse/disproportionate impacts (Impact Factor = 0)

Property Damage—Values were assigned based on the expected total property damages incurred from a hazard incident. It is important to note that values represent estimates of the loss from a major incident based on historical data or probabilistic models/studies.

- **High**—More than $5,000,000 in property damages is expected from a single major hazard event, or damages are expected to occur to 15% or more of the property value within the jurisdiction (Impact Factor = 3)
- **Medium**—More than $500,000, but less than $5,000,000 in property damages is expected from a single major hazard event, or expected damages are expected to more than 5%, but less than 15% of the property value within the jurisdiction (Impact Factor = 2)
- **Low**—Less than $500,000 in property damages is expected from a single major hazard event, or less than 5% of the property value within the jurisdiction (Impact Factor = 1)
- **No impact**—Little to no property damage is expected from a single major hazard event (Impact Factor = 0)

Economy—An estimation of the impact, expressed in terms of dollars, on the local economy is based on a loss of business revenue, crops, worker wages and local tax revenues or on the impact on the local gross domestic product (GDP).

- **High**—Where the total economic impact is likely to be greater than $10 million (Impact Factor = 3)
- **Medium**—Total economic impact is likely to be greater than $100,000, but less than or equal to $10 million (Impact Factor = 2)
- **Low**—Total economic impact is not likely to be greater than $100,000 (Impact Factor = 1)
- **No Impact**—Virtually no significant economic impact (Impact Factor = 0)

Impact to Own Operations—An estimate of the impact on the ability of the affected jurisdiction to meet the essential day-to-day operational demands and needs of the community after a single major hazard event.

- **High**—Significant impact on the organization's own operations and/or the ability of the jurisdiction to meet the essential day-to-day operational demands and needs of the community from a single major hazard event (Impact Factor = 3)
- **Medium**—Some impact on the organization's own operations and/or the ability of the jurisdiction to meet the essential day-to-day operational demands and needs of the community from a single major hazard event (Impact Factor = 2)
- **Low**—Minimal impact on the organization's operations and/or the ability of the jurisdiction to meet the essential day-to-day operational demands and needs of the community from a single major hazard event (Impact Factor = 1)
- **No Impact**—No impact on the organization's operations and/or the ability of the jurisdiction to meet the essential day-to-day operational demands and needs of the community from a single major hazard event (Impact Factor = 0)

Future Development—The potential that future development will have on increasing or decreasing the impact/consequence of this hazard.

- **High**—Future development trends will significantly increase the impact/consequence of this hazard (Impact Factor = 3)

- **Medium**—Future development trends will increase the impact/consequence of this hazard, but not significantly (Impact Factor = 2)
- **Low**—Future development trends will minimally increase impact/consequence of this hazard (Impact Factor = 1)
- **No Impact**—Future development trends will not increase the impact/consequence of this hazard, and/or may even decrease the impact/consequence of this hazard (Impact Factor= 0)

Environment—An estimate of the environmental impact from a single major hazard event requiring outside resources and support; and/or repair, clean-up, restoration, and/or preservation work.

- **High**—Environmental impact from a single major hazard event is likely to be significant, requiring extensive outside resources and support; and/or repair, clean-up, restoration, and/or preservation work that may take a year or longer to complete (Impact Factor = 3)
- **Medium**— Environmental impact from a single major hazard event is likely to be localized, requiring some outside resources and support; and/or repair, clean-up, restoration, or preservation work that may take up to a month to complete (Impact Factor = 2)
- **Low**—Environmental impact from a single major hazard event is likely to be minimal, requiring little to no outside resources and support; and/or minimal repair, clean-up, restoration, or preservation work that may take a week to complete (Impact Factor = 1)
- **No Impact**—No environmental impacts from a single major hazard event are likely (Impact Factor = 0)

Climate Change—The potential that Climate Change will increase the risk of this hazard (i.e., type, location and range of anticipated intensities of the identified hazard and impacts).

- **High**—Climate Change trends will significantly increase the risk of this hazard and its impacts (Impact Factor = 3)
- **Medium**—Climate Change trends will increase the risk of this hazard and its impacts, but not significantly (Impact Factor = 2)
- **Low**—Climate Change trends will minimally increase the risk of this hazard and its impacts (Impact Factor = 1)
- **No Impact**—Climate Change trends will not increase the risk of this hazard and its impacts (Impact Factor = 0)

Each sub-category was assigned a weighting factor to reflect its significance, consistent with those typically used for measuring the benefits of hazard mitigation actions: a weighting of 3 was assigned for *Population and Life/Safety* and *Underserved/Equity*, and a weighting factor of 2 was assigned for *Property Damages.* A weighting factor of 1 was assigned for *Economic*, *Own Operations, Future Development, Environment,* and *Climate Change*.

Probability of Occurrence Factor

The probability of occurrence of a hazard is indicated by a factor based on the likelihood of annual occurrence. Probabilities were weighted by population percentage (2020 Census data) for each

jurisdiction, providing a weight ranking based on the population size, from largest to smallest. The weighting balances the scale of probability where larger areas are more likely to experience hazard events. The probability of occurrence factors used in the risk assessment calculations are:

- **High**—Significant hazard event is likely to occur annually (Probability Factor = 3)
- **Medium**—Significant hazard event is likely to occur within 10 years (Probability Factor = 2)
- **Low**—Significant hazard event is likely to occur within 50 years (Probability Factor = 1)
- **Unlikely**—There is little to no probability of significant occurrence, or the recurrence interval is greater than every 100 years (Probability Factor = 0)

The assessment of hazard frequency is generally based on past hazard events in the area in conjunction with the professional judgement of local subject matter expects.

FEMA NRI Risk Scores

The National Risk Index (NRI) is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather. Because not all hazards are applicable to the County, only those hazards with a defined risk to the County are included. The National Risk Index is intended to fill gaps in available data and analyses to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

The National Risk Index's final rating is made by assessing the jurisdiction across three categories from each of the 18 hazard types:

1. Social Vulnerability
2. Community Resilience
3. Expected Annual Loss

The National Risk Index score represents a community's relative level of risk as compared to all other communities at the same level across the United States (US). These measurements are calculated annually using average past conditions to develop a baseline risk measurement.[69]

Social Vulnerability

Social Vulnerability measures the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood. Table 27 compares Hamilton County amongst its neighboring counties with a Social Vulnerability Rating of "Relatively High" and a Social Vulnerability Score of "60.06"[70]. The FEMA NRI Social Vulnerability (SoVi) Score and Rating represent the relative level of a community's social vulnerability compared to all other communities at the same level across the US.

[69] FEMA. (2022). National Risk Index. Retrieved from https://hazards.fema.gov/nri/learn-more.
[70] Ibid.

Table 27: Social Vulnerability FEMA NRI Score			
County	**State**	**Social Vulnerability Score**	**Rating**
Hamilton	OH	60.06	Relatively High
Warren	OH	5.16	Very Low
Butler	OH	36.73	Relatively Low
Clermont	OH	15.09	Very Low
Campbell	KY	24.76	Relatively Low
Boone	KY	14.96	Very Low
Kenton	KY	29.60	Relatively Low
Dearborn	IN	6.17	Very Low
Franklin	IN	16.39	Very Low

However, when Hamilton County's SoVi score is compared to the four largest counties by population in Ohio, it ranks second to last amongst Franklin County, Cuyahoga County, Montgomery County, and Summit County. Cuyahoga has the highest SoVi score at "73.33." Montgomery scored "71.71," Franklin scored "63.56," and Summit scored "45.86." The ratings for all the counties except Summit County are "Relatively High." The rating for Summit County is "Relatively Moderate."

Community Resilience

Community Resilience measures a community's ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions. The FEMA NRI Community Resilience is measured using the Baseline Resilience Indicators for Communities published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI). Table 28 illustrates Hamilton County's FEMA NRI Community Resilience score amongst its neighboring counties and ranks as the third highest. The FEMA NRI Community Resilience score for Hamilton County is "Very High" at a score of "86.31."

Table 28: Community Resilience FEMA NRI Score			
County	**State**	**Community Resilience Score**	**Rating**
Hamilton	OH	86.31	Very High
Warren	OH	90.13	Very High
Butler	OH	76.89	Relatively High
Clermont	OH	68.68	Relatively High
Campbell	KY	80.17	Very High
Boone	KY	86.79	Very High
Kenton	KY	83.39	Very High
Dearborn	IN	60.63	Relatively High
Franklin	IN	50.16	Relatively Moderate

When comparing Hamilton County to the four largest counties by population in Ohio, it has the second highest rating of "Very High" behind Cuyahoga County at a score of "97.17." Summit's score is "79.82," Franklin's score is "72.22," and Montgomery's score is "76.00." Franklin County, Montgomery County, and Summit County are rated "Relatively High.'

Expected Annual Loss

Expected Annual Loss (EAL) represents the average economic loss in dollars resulting from natural hazards each year. It is calculated for each hazard type and quantifies loss for relevant consequence types: buildings, people, and agriculture. The FEMA NRI EAL scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios for the hazard types.

Table 29 shows that the expected annual loss score for Hamilton County is the highest when compared to its neighboring counties. The EAL score[71] for Hamilton County is "93.75," which equates to a "Relatively Moderate" rating.

Table 29: Expected Annual Loss FEMA NRI Score

County	State	Expected Annual Loss Score	Rating
Hamilton	OH	93.75	Relatively Moderate
Warren	OH	73.63	Relatively Low
Butler	OH	88.36	Relatively Moderate
Clermont	OH	69.55	Relatively Low
Campbell	KY	62.43	Relatively Low
Boone	KY	78.86	Relatively Low
Kenton	KY	75.49	Relatively Low
Dearborn	IN	54.41	Relatively Low
Franklin	IN	31.23	Very Low

Hamilton County also has the highest EAL score when compared to the four largest counties by population in Ohio. Franklin County's EAL score is "92.85," Cuyahoga's score is "91.71," Montgomery's score is "85,79," and Summit's score is "85.73." All the counties are rated "Relatively Moderate."

Total Risk Scores

The following table represents the new overall risk scores for Hamilton County based on the Risk Assessment Methodology defined at the beginning of this chapter. Following a data-driven quantitative assessment, from reviewing and ranking local knowledge from local subject matter experts, to developing other risk elements by the Core Planning Team based on the data collected. These elements were then aggregated to inform the analysis. The development of the Total Risk Score is organized based on the following: ranked by ranked by Total Risk Score. If same Risk score, ranked by Probability Factor. If same Probability Factor, ranked by Impact Factor and if same Impact Factor, ranked by Vulnerability Factor.

[71] FEMA. (2022). National Risk Index. Retrieved from https://hazards.fema.gov/nri/expected-annual-loss.

Table 30: 2023 Hazard Risk Scores for Hamilton County						
Hazard Event	Probability	Consequence				Total Risk
	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
High Wind and Tornado	3	11	16	26	53	80
Hazardous Material Incident	3	11	11	25	47	72
Severe Winter Storm	3	4	14	28	46	71
Flash Flood	3	7	11	28	46	71
Extreme Cold Incident	3	4	12	28	44	68
Extreme Heat Incident	3	4	12	26	42	65
Severe Thunderstorm	3	4	14	21	39	61
Infrastructure and Structural Failure	3	8	11	20	39	61
Urban Fire/ Structural Fire	3	4	6	24	34	54
Public Health Emergency	2	8	12	27	47	51
Mass Transportation Incident	2	4	9	24	37	41
Terrorism/ Active Assailant	2	7	9	21	37	41
Riverine Flood	2	4	6	25	35	39
Civil Disorder/Riot	2	4	9	22	35	39
Cyber Incident	2	7	9	19	35	39
Landslide	2	4	6	19	29	33
Earthquake	1	8	16	34	58	33
Dam/Levee Failure	1	4	5	28	37	23
Land Loss	1	4	6	21	31	19
Drought	1	4	9	18	31	19
Wildfire	1	4	5	17	26	17

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

If you are accessing the Microsoft Word version of this plan, double click on the icons below to access the full Risk Ranking Assessment or the FEMA NRI Report.



_Hamilton County
2023 HMP Hazard Ra

Limitations

The assessment of data and identifying the risk to a community is not a hard science, as the analysis of hazards is complicated by several factors including laws, customs, ethics, values, attitudes, political preferences, complex infrastructures, and the built environment. It is not possible to fully predict hazards or their impacts. Furthermore, the perception of what constitutes a significant risk or impact can easily differ between individuals. Despite the inherent limitations, a well thought out risk assessment can act as a guide and provide a wealth of valuable information that is essential for identifying goals, prioritizing actions, planning and preparedness, and recovering and mitigating future hazards. The hazard analysis developed for this Plan should be best considered as an initial step in the process of continuously evaluating, preparing for, and mitigating the community's hazards.

HAZARD PROFILES & DESCRIPTION

Civil Disorder/Riot

Total Risk Score: 39

Civil disorder is a wide-ranging term that encompasses any incident involving large groupings of individuals participating in activities that disrupt public order and put the safety of the public, businesses, or critical infrastructure at risk. This can include rioting, looting, and violent demonstrations. Civil disorder can be a spontaneous impact of a triggering event such as the looting seen following disasters (Hurricane Katrina, New Orleans, LA) or can be a specific hazard unrelated to any other hazard (World Trade Organization Ministerial Conference riots, Seattle, WA). It can arise from peaceful events, gatherings, or demonstrations or can be pre-planned and intentional. Ultimately, civil disorder is rooted in highly complex social, economic, and political interactions.

Civil Disorder During Disasters

Civil disorder during disasters occurs during or immediately after a disaster. This type of civil disorder primarily manifests itself in the form of looting. Other forms of types of civil disorder such as rioting are extremely rare following a disaster.

It is argued that the cause of civil disorder during disasters results from many types of motivating factors. One factor is the chaos resulting from a disaster alters the environment and the resulting social norms allowing for the rationalization of acts previously considered contemptible. This change in behavior coupled with a displaced or overtaxed police force allows civil disorder to grow during or after disasters. Another factor that may result in civil disorder during disasters is the lack of or the fear of the lack of basic human supplies. Disasters often disrupt a community's ability to provide food, clothing, and potable water for its citizenry. Fearing for survival, a populace may begin to loot for these basic necessities. Lastly, it has been argued that the genesis of civil disorder during disasters stems from social inequalities. There is a strong correlation between lower socio-economic status and crime. There is evidence to suggest that during and immediately following disasters these conditions are exacerbated resulting in higher crime rates, specifically looting.

All this considered, differing opinions exists of the frequency of looting during disasters. Some argue that the occurrence of widespread looting is a misconception and that perceptions are

influenced by misinterpreting behavior, misunderstandings over the ownership of property, exaggerating claims of looting, and sensational media coverage. In addition, it is widely observed that pro-social behaviors such as citizens volunteering to help and feed one another far outweigh anti-social behavior such as looting. Nonetheless, looting does exist in many disasters to some degree. Its origins are rooted in social issues but are probably influenced by a combination of the above factors.

Due to the resulting impacts of a disaster, the affected populace is already under duress; therefore, responders and emergency managers must take appropriate caution when responding to these events. Shifting search and rescue activities to trained strike teams may free up enough police to quell looting. Setting up disaster recovery operations as quickly and efficiently as possible will provide residents with assistance in maintaining basic life needs. Finally, strong public information campaigns will help to inform citizenry and quell fears.

Politically Motivated Civil Disorder

Politically motivated civil disorder results when a large group of individuals disturb public order to affect political or social change. This can occur in a pre-planned fashion, in response to a significant social event, or spontaneously at large crowd gatherings. This type of civil disorder can manifest itself in rioting, looting, or unauthorized gatherings and the disruption of the public order.

Politically motivated civil disorder can happen for several reasons. Some of these reasons are to affect change in socio-economic inequalities, to change existing laws, to take advantage of a lawless situation, or can be anarchist in nature. This type of civil disorder can occur but is not limited to the following scenarios: peaceful marches and parades, pre-planned summit and major political events, and large gatherings at concerts and sport arenas.

Often in politically motivated civil disorder, initial targets are symbolic acts of defiance against what the participants see as institutions upholding the societal norms they wish to change. This includes destructive behaviors towards police forces and their equipment, firefighters and their equipment, and other symbols of law and order. This destructive behavior often morphs to crimes of opportunity such as looting and theft. Finally, aggression toward the public and peacekeepers can take place.

In recent years, politically motivated civil disorder and those that participate in it have become increasingly organized. These individuals often attach their cause to otherwise innocuous or peaceful demonstrations to take advantage of a police force strained with other responsibilities. Anarchist groups such as the Black Bloc have incorporated guerilla tactics into their operations such as hiding their identity and using misdirection on police forces to have the greatest opportunity to inflict damage. Another tactic of these groups is to incite violence in the larger crowd. Exploiting already existing tensions on a variety of issues, such as hunger, poor employment opportunities, inadequate community services, poor housing, and labor issues can elevate tensions within a large group. When tensions are high, a seemingly minor incident, rumor, or act of injustice can ignite a crowd to riot and act violently.

According to the Southern Poverty Law Center, there are currently 35 organizations identified as hate groups in the State of Ohio. There are three that have been identified in or around Hamilton County: Christ or Chaos (Radical Traditional Catholicism) in West Chester, and Citizens for Community Values (Anti-LGBT) and The Right Stuff (White Nationalist) in Cincinnati. The right of public assembly is protected by the First Amendment of the United States Constitution; accordingly, emergency managers must be careful to protect the rights of their citizenry. Disregard or perceived disregard for this right will be used by individuals participating in civil disorder to gain sympathy for their cause. Taking this into consideration, the most effective method to diminish politically motivated civil disorder is to stop it before it occurs. This involves significant planning by emergency managers and robust intelligence from law enforcement entities. Once a civil disorder has occurred, an assortment of riot quelling non-lethal weapons are available to responders. Finally, to protect the safety of the public, first responders, and other protesters, various options for lethal force can be used as a last resort.

Previous Occurrence for Civil Disorder/Riot Hazard

Throughout the history of Cincinnati and Hamilton County, there have been many instances of rioting and civil unrest. In the last five years, there have been two events which sparked politically motivated protest. However, the protests were non-violent and there are no reported injuries, deaths, or damage to property. Of the eleven major riots/civil disturbances since its founding, three have occurred within the last fifty years.

During the week of May 31, 2020, hundreds gathered to protest the death of George Floyd. On June 24, 2022, hundreds also gathered after the Supreme Court's decision to reverse Roe v. Wade. The Ohio National Guard was activated in a support capacity to secure areas around critical infrastructure for both incidents.

In July of 2015 in Cincinnati, Ohio, marches, and rallies resulted after the fatal shooting of Samuel DuBose by a University of Cincinnati police officer. Around three hundred demonstrators walked through Over-the-Rhine to Fountain Square neighborhoods. Six[72] people were arrested on charges of disorderly conduct and resisting arrest during the march.

In 2001, a major civil disturbance took place after the fatal shooting of the Black teenager, Timothy Thomas, three days of vandalism, rioting, and looting took place. Total damage was estimated at $3.6 million initially, but post-riot expenses brought the total up to approximately $13.7 million.

The Avondale riot of 1967 took place because of tensions between police and the community, further stoked by deteriorating housing and community conditions in the Black community. The protests of a citizen demonstrating against the conviction of his brother (who was accused of being the Cincinnati Strangler) spiraled into intense civil unrest once the citizen was arrested for loitering. Crowds gathered and began to damage local businesses. The Ohio National Guard was deployed to help contain and quell the riots. In total, one person was killed and 404 were arrested.

[72] WLWT5 Cincinnati. (2015). Six arrested in rally honoring Sam DuBose. Retrieved from https://www.wlwt.com/article/6-arrested-in-rally-honoring-sam-dubose/3556565

Soon after, the Avondale riots of 1968 (in response to the assassination of Martin Luther King Jr.) led to the Ohio National Guard being called in once more to restore peace and order. In total, two more people were killed, 220 injured, and 260 arrested.

Probability for Civil Disorder/Riot Hazard

While this hazard's probability ranking is modestly considered "Low," the possibility of significant future civil disorder/riots cannot be discounted because many local, regional, national, and international factors can all incite civil disorder. These incidents have historically been isolated or low impact events, however, and the hazard's overall impact to the County and participating jurisdictions have been minor.

Geographic Location for Civil Disorder/Riot Hazard

Places of public gathering such as festivals, sporting and entertainment venues, colleges and universities, detention facilities and government facilities are the most likely places for a civil disturbance to occur.

Hazard Extent for Civil Disorder/Riot

The frequency of civil disorder is correlated with a sub-population's place in society and their relations with authority figures. It is more likely to occur when a combination of economic, social, and political factors create stress within a community. Its magnitude depends on the pre-existing tensions, the issues at hand, the size of the crowd, and the response of law enforcement.

Large civil disturbances in Hamilton County are not common and typically are a result of the following causes:

- Labor disputes
- Controversial court judgment or government actions
- Resource shortages
- Demonstrations by special interest groups
- Unfair death or injury
- Celebrating a victory by a sports team

Table 31: Civil Disorder/Riot Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Civil Disorder/Riot	County-wide	Small, organized protest	Major riot stemming resulting in millions of dollars in damages	The Cincinnati riots of 2001 cost an estimated $3.6 million in damage and an estimated loss of $10 million due to the subsequent boycott.[73]

Analysis of Community Development Trends

Larger urban centers are typically more susceptible to civil unrest. As Hamilton County's population increases, the possibility of unrest could rise.

[73] Rucker, Walter C.; Upton, James N. (2006), Encyclopedia of American Race Riots, Volume 1, Westport, Connecticut: Greenwood Press.

Previous Changes in Development

Since the last update, there have been non-violent protest but the probability has not changed.

Vulnerability to Future Assets/Infrastructure for Civil Disorder/Riot Hazard

Vulnerability to future structures/assets is expected to be the same as for existing structures.

Vulnerability Analysis for Civil Disorder/Riot Hazard

Although civil disorder poses a threat to the public on its own, the many hazard impacts associated with civil disorder also pose a threat to the safety of the public.

Impact to Hamilton County Residents

There are many ways in which civil disorder events can impact Hamilton County residents. Individuals engaging in civil disruption will often attach themselves to unrelated protests as a means of getting their message out and as a diversion for police. Unfortunately, residents of the county who are peaceful protesters could potentially be trapped in the chaos that ensues. With these types of events, injuries and fatalities are a possibility.

Impact to Essential Facilities and Other Property

Essential facilities may be impacted if they are near or the target of the civil disorder/riot. Businesses are often the focus of civil disruption as individuals will target these establishments for looting and vandalism. Also, in scenarios where supplies are limited, these businesses are often looted for their goods. Building Inventory: Any building/edifice where the riot or disorder is taking place will be vulnerable to damages including, but not limited to, broken storefronts, theft of property, vandalism, and/or arson.

Impact to Critical Infrastructure

This hazard typically does not damage infrastructure, but large groups can block traffic (either because there are so many people at the gathering or as a protesting tactic).

Impact to Environment

This hazard typically does not typically directly impact the environment, except in the unlikely event that hazardous materials were to be intentionally released.

Impact to Operations

First responders are at particular risk of civil disruption. First responders are most likely the first group of individuals on the scene as civil disruption occurs. This puts them at direct risk of injury during a disruption. Additionally, responders are viewed as part of the authority the disruption is protesting against and therefore, they could become targets. The nature of civil disturbances is such that local emergency response services are often overwhelmed.

Public Confidence in the Jurisdiction's Governance

Civil disorder/riot may lead to damages to businesses and disruptions to public services for residents. Due to the potential political nature of civil disorder/riot, the public may lose confidence in the jurisdiction's governance if they are unable to quickly address the incident be restoring services and protecting businesses. A portion of the public may not lose confidence in

the jurisdiction's government and instead will place all fault with individuals involved in the civil disorder/riot.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 32: Jurisdiction-Specific Hazard Impact/Vulnerability for Civil Disorder/Riot

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cheviot – City	Cheviot City hosts a number of festivals. These include the following: 1) Brews on the Block Street Festival, which takes place the last weekend of September and was previously known as the West Side Street Festival (approx. 30,000 people); and 2) the Harvest Festival.
Cincinnati – City	The central business district is vulnerable to civil disobedience and terrorism (e.g., courthouse and city hall). The dense urban nature of the city makes it vulnerable to violent mass casualty impacts.
Deer Park – City	The city is always prepared for a civil disorder/riot. These are likely to happen in the city and on main roadways.
Forest Park – City	Due to the ever-changing political and social climate, civil disorder is a possibility for the City. Specifically, the following areas may be more prone to these incidents: F, G, or H Sections, Dewdrop and Q section apartments and high schools.
Harrison – City	The Annual Fourth of July event, Taste of Harrison, and Food Truck Rally are a few events that attract large gatherings.
Madeira – City	There is minimal risk of civil disorder/riot in the city.
North College Hill – City	The city borders the City of Cincinnati and the city has experienced limited protests and civil disorder.
Norwood – City	Norwood is surrounded by the City of Cincinnati. The area is very susceptible for Civil Disorder/Riot, primarily on the southern and western borders of the city.
Sharonville – City	Several local events pose a threat, such as: Sharonfest (July), St. Michael's (June), Blue Ash, and Summit park events.
Cleves – Village	The village has a K-12 school campus that is very diverse. Like all schools, this campus is also a potential place where civil disorder or rioting could occur.
Elmwood Place – Village	Due to the village's proximity to the City of Cincinnati and the densely populated surrounding areas, the possibility of a civil unrest or major incident is a concern to the village.
Evendale – Village	Community events on recreation grounds, GE, and Summit Park events are all vulnerable to civil disorder/riots.
Golf Manor – Village	Civil disorder, spilling over from adjoining jurisdictions, is a concern for the village.
Lincoln Heights – Village	Like many communities, the village is highly sensitive to political and social justice concerns.
Lockland – Village	Proximity to the City of Cincinnati poses a possible threat to civil disorder/riot.
Mariemont – Village	Due to the village's proximity to the City of Cincinnati and the densely populated surrounding areas, the possibility of a civil unrest or major incident is a concern for the village.
Silverton – Village	The village's proximity to the urban population center, and the main roadways that feed into the area (Montgomery Road and I-71), make the village vulnerable to civil disorder/riots. Special events, such as the annual Taste of Silverton in June (up to 2,000 assembled), is a large gathering of people, which increases the risk for disorderly behavior.
St. Bernard – Village	Due to the village's demographic and surrounding jurisdictions, it is prone to potential civil disorders.

Table 32: Jurisdiction-Specific Hazard Impact/Vulnerability for Civil Disorder/Riot	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Anderson – Township	Anderson Township is host to several large events throughout the year, including Riverfront entertainment, Trustee Meetings, School Board Meetings, Board of Zoning Appeals and Zoning Commission, Party on the Plaza, festivals, Anderson Days, seasonal events, school events, theaters and high school stadiums. These make the Township susceptible to human-related hazards, such as civil disorder/riot and other violent mass casualty incidents.
Colerain – Township	Collateral implications of the Ray Tensing Trial caused riots in the area. School (high school) sponsored events (e.g. Football) are also subject to civil disorder/riot.
Harrison – Township	The Annual Fourth of July event, Taste of Harrison, and Food Truck Rally are a few events that attract large gatherings.

Summary Vulnerability Assessment

Civil disorder events often involve acts of arson, looting and vandalism which can result in devastating levels of property damage. The economic impact of a civil disturbance reaches far beyond emergency response costs and property damage. Economic recovery from civil disturbances is very slow and often requires government assistance to revive the local economy. This hazard can tarnish an area's image and deter potential investors and residents. The dollar cost impact for civil disorder/riot was not determined for this hazard.

Table 33: Civil Disorder/Riot Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Civil Disorder/Riot	2	4	9	22	35	**39**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Cyber Incident

Total Risk Score: 39

A cyber incident is an anticipated or unanticipated disruption to information systems and networks. Events that cause cyber incidents are cyber-attacks, power outages, earthquakes, hurricanes, and other man-made and natural hazards. A cyber-attack is an effort by hackers to gain access to an electronic network or system. Cyber-attacks happen all day, every day, around the world. Major targets typically include governments, banks, and businesses, but any online network can be attacked. Common cyber-attacks are malware, phishing, and ransomware.
Malware: using any software used to gain unauthorized access to IT systems in order to steal data, disrupt system services or damage IT networks in any way.

Ransomware is a type of malware identified by specified data or systems being held captive by attackers until a form of payment or ransom is provided.

Phishing is online scam enticing users to share private information using deceitful or misleading tactics.[74]
Advancements in technology have increased the productivity of our nation and made daily operations and markets reliant on cyber systems. As a result, the United States has become, and will increasingly continue to be, vulnerable to non-traditional attacks including cyber-attacks on information and operations. Cyberspace is the nervous system for all critical infrastructures and is composed of hundreds of thousands of interconnected computers, servers, routers, switches, and fiber optic cables that allow our critical infrastructures to work. According to the Cybersecurity and Infrastructure Agency, 1 in 3 homes with computers are infected with malicious software, 47% of American adults have had their personal information stolen, and 600,000 Facebook accounts are hacked every day. Between 2015 and 2020, over 440,000 complaints were received on average every year and in 2020 victims of cyber-attacks lost $4.2 billion in total. [75]

The attacks on computer systems can come in the form of viruses, Trojans, worms, spoofs, or hoaxes from virtually anywhere in the world. Computer viruses, ranging from devastating to simply annoying, are sent out daily by organizations and individual hackers, and intermittently by people who fail to protect their computer software.

Previous Occurrences for Cyber Incident Hazard

Cyber incidents occur regularly in Ohio (and Hamilton County) but are not typically reported in a central database.

- On January 11, 2023, the FAA had a system outage, grounding all domestic and international flights nationally, because a contractor unintentionally deleted files on a database.

[74] Cybersecurity and Infrastructure Security Agency.(N/A). Malware, Phishing, and Ransomware. Retrieved from Malware, Phishing, and Ransomware | Cybersecurity and Infrastructure Security Agency CISA.
[75] Federal Bureau of Investigation Internet Crime Compliant Center.(2020).Internet Crime Report 2020.Retrived from 2020_IC3Report.pdf.

- In June 2017, several Ohio government websites were hacked and with messages supporting Islamic terrorist groups. Those sites impacted included those of the governor, his wife, the lieutenant governor and inspector general, and Ohio's Medicaid and prison agencies.
- From the end of March to mid-April 2017, dozens of Cincinnati Chipotles were hacked and thousands of customers' credit card information was stolen. The attack affected 13 stores throughout the city in total.
- From 2015 - 2017, skimmers were found at 8 different gas stations and 1 Walmart throughout Cincinnati.
- During March and April of 2015, the websites of several restaurants and the Cincinnati Center City Development Corporation were hacked and used to display pro ISIS messages.
- In January 2013, the Fifth Third Bank and PNC Bank in Cincinnati were victimized by a cyberattack from attackers believed to be located in the Middle East. The attack first caused the company website to slow and then go down.

Probability for Cyber Incident Hazard

This hazard is considered to be of **"**Medium Probability" because significant and county-wide occurrences of this hazard have rarely occurred (even though isolated or low-impact events may occur with regularity).

Geographic Location for Cyber Incident Hazard

Cyber incidents occur virtually. They can originate from anywhere in the world and can target information technology anywhere in the world.

Hazard Extent for Cyber Incident

Cyber incidents can disrupt the intended flow of information and cause business interruption, target private information, or physically manipulate items connected to the network. In major cyber-attacks, information can be stolen from millions of people.

Table 34: Cyberattack Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Cyber incident	County-wide	Identity theft	Cyberattack on major utility (i.e. power grid)	The maximum extent represents a hypothetical, but realistic scenario.

Analysis of Community Development Trends

As society becomes increasingly dependent on technology, the threat and likelihood of cyber incidents will only increase.

Previous Changes in Development

Increased dependency on technology and the internet has resulted in a significant risk to cyber incidents. In the previous plan this hazard was listed as Cyberattacks.

Vulnerability to Future Assets/Infrastructure for Cyber Incident Hazard

All existing and future assets/infrastructure are unlikely to receive direct damage. However, the systems and technologies that are integrated within these assets will undoubtedly be affected, especially as technology becomes more advanced and automated.

Vulnerability Analysis for Cyber Incident Hazard

Hamilton County government offices, as well as businesses, non-profits, and private residents can be impacted by cyber incidents. Vulnerability is dependent on what actions the individual or group in charge of the network have done to protect it.

Impact to Hamilton County Residents

Any resident of Hamilton County that is connected to the internet is vulnerable to cyber incidents and identify theft. These incidents have long been a growing trend along with the increasing adoption of technology. Victims of this hazard are likely to experience substantial monetary loss or harassment. Any disruption to Internet service or critical infrastructure information systems could potentially threaten lives, property, the economy, and national security.

Impact to Essential Facilities and Other Property

Any essential facility connected to a network is at risk for a cyber incident. For example, individuals and businesses are reliant on information systems and the internet for daily tasks; without access to these systems, there could be major financial losses. Furthermore, delivery systems including water, electricity, even things such as groceries rely on information systems to coordinate and complete the delivery. Building Inventory: This hazard typically does not impact the actual building itself.

Impact to Critical Infrastructure

While sabotage of computer systems normally would not lead to harm to health and safety, it is possible. As technology becomes more integrated into society, the more access hackers will have to sensitive systems. Integration of systems (such as electrical grids, air traffic control centers, traffic lights, etc.) can leave these systems vulnerable to attack. If these systems are compromised, it is possible that people may be injured or killed.

Impact to Environment

This hazard typically does not impact the environment.

Impact to Operations

Cyber incidents carried out on public infrastructure can directly impact the County's ability to operate essential facilities and provide services. Forms of sabotage to computer systems include the introduction of viruses, malware or spyware that can cripple a computer network or steal private and public information. The Ohio Multi-Agency Radio Communications (MARCS) system is a prime example of interoperability that cannot be compromised, because of its dependency for day to day statewide communications. Response and continuity of operations plans must be in place and identify secondary backup sites to continue operations.

Emergency services, such as 911 dispatch would have difficulties because most phone lines work via the Internet. Medical response and care are reliant on electricity, water and information systems and the Internet to access medical records. If the Internet was not available, many information systems would be useless and operations for many of the critical infrastructure sectors may stop altogether, causing major problems for both the public and private sector.

Public Confidence in the Jurisdiction's Governance

As cyber incidents have the potential to disrupt essential services, the public may lose some confidence in the jurisdiction's governance for failing to have adequate measures in place to prevent cyber incidents or quickly restore those services. If the jurisdiction has a cyber incident but does not disclose it to the public, the public may lose some confidence if it is later revealed that the information wasn't shared.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 35: Jurisdiction-Specific Hazard Impact/Vulnerability for Cyberattack

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Blue Ash – City	Numerous corporations and government agencies occupy space in Blue Ash. Each are subject to cyberattack.
Cheviot – City	City businesses are vulnerable to cyberattacks that could impact local communication and commerce.
Cincinnati – City	The city has four banks, which are considered an important resource to the city and, like all banks, is susceptible to criminal acts.
Forest Park – City	Several major corporations within the city, including local government utility computers, are at risk. Cyberattacks have the ability to compromise any system tied to a computer/network.
Madeira – City	Internal systems for both County and City IT infrastructure are at risk of cyberattack.
Norwood – City	Cyberattack is a concern for the city. Efforts are needed to better understand how the city can better protect its I.T. infrastructure, public utilities, and other vulnerable assets.
Wyoming – City	A cyberattack disrupting water distribution at the city water plant is a major concern.
Glendale – Village	Village-wide intranet, with accessibility from all village departments, is vulnerable to cyberattack.
Golf Manor – Village	The village hosts its own server which is vulnerable to cyberattack.
St. Bernard – Village	The village has experienced a cyberattack in the past.
Anderson – Township	Cyberattacks are also an emerging threat to many communities. The potential for email scams with employee names, website takeover, traffic signal failures or technology failures in general are a concern to the Township.
Columbia – Township	Cyberattacks on township computer systems (i.e. financial information) is a concern.

Summary Vulnerability Assessment

Potential structural dollar loss due to a cyber incident is estimated to be zero. For this planning effort, it was also not possible to analyze the number of potential lives lost or injured, because of the unpredictable nature of the hazard, and because any impact to human life would most likely be due to a secondary impact (i.e. compromising the power grid). The monetary and economic impact on business/government disruption should be analyzed in future updates as more local data becomes available.

Table 36: Cyber Incident Hazard Evaluation and Impact/Consequence Assessment

Hazard Event	Probability	Consequence				Total Risk
	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Cyber Incident	2	7	9	19	35	**39**
Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Dam/Levee Failure

Total Risk Score: 23

Dams are artificial/manmade structures that retain or detain water behind a large barrier. When full, or partially full, the difference in elevation between the water above the dam and below creates large amounts of energy, creating the potential for failure. The same potential exists for levees when they serve their purpose, which is to confine flood waters within the channel area of a river and exclude that water from land or communities land-ward of the levee. Dams and levees can fail due to 1) water heights or flows above the capacity for which the structure was designed; or 2) deficiencies in the structure such that it cannot hold back the potential energy of the water. If a dam or levee fail, issues of primary concern include loss of human life/injury, downstream property damage, lifeline disruption (of concern would be transportation routes and utility lines required to maintain or protect life), and environmental damage.

Sunny Day Failures: Dam/levee failures that occur during a non-flooding event with the reservoir at a normal pool level.
Rainy Day Failures Involves periods of rainfall and flooding and can exacerbate inadequate spillway capacity.

Dam failures can result from any one or a combination of the following causes:

- Prolonged periods of rainfall and flooding;
- Inadequate spillway capacity, resulting in excess overtopping flows;
- Internal erosion caused by embankment or foundation leakage or piping;

- Improper maintenance, including failure to remove trees, repair internal seepage problems, replace lost material from the cross section of the dam and abutments, or maintain gates, valves, and other operational components;
- Improper design, including the use of improper construction materials and construction practices;
- Improper operation, including the failure to remove or open gates or valves during high flow periods;
- Failure of upstream dams on the same waterway that release water to a downstream dam;
- Earthquakes, which typically cause longitudinal cracks at the tops of the embankments that can weaken entire structures.[76]

Many communities view both dams and levees as permanent and infinitely safe structures. This sense of security may well be false, leading to significantly increased risks. Both downstream of dams and on floodplains protected by levees, security leads to new construction, added infrastructure, and increased population over time. Levees in particular are built to hold back flood waters only up to some maximum level, often the 100-year (1% annual probability) flood event. When that maximum is exceeded by more than the design safety margin, the levee will be overtopped or otherwise fail, inundating communities in the land previously protected by that levee. It has been suggested that climate change, land-use shifts, and some forms of river engineering may be increasing the magnitude of large floods and the frequency of levee failure situations. In addition to failure that results from extreme floods above the design capacity, levees and dams can fail due to structural deficiencies. Both dams and levees require constant monitoring and regular maintenance to assure their integrity. Many structures across the U.S. have been under-funded or otherwise neglected to be maintained, leading to the recognition that certain structures are unsafe or, rarely, can lead to actual failure. The threat of dam or levee failure may require substantial commitment of time, personnel, and resources. Since dams and levees deteriorate with age, minor issues become larger compounding problems, and the risk of failure increases.

Previous Occurrences for Dam/Levee Failure Hazard

In 1982, the Hermitage Club Lake dam overtopped due to an intense storm, however no damage was reported. According to the Hamilton County Core Planning Team, there are no other records or local knowledge of any dam or certified levee failure in the county. There has been no reported dam/levee failures reports since the last update.

Probability for Dam/Levee Failure Hazard

This hazard is considered to have a “Low Probability” because this hazard was determined to be extremely rare with no documented history of significant events.

[76] Ohio Emergency Management Agency. State of Ohio Enhanced Hazard Mitigation Plan. (2019). Retrieved from 2019_sohmp-FullCopy.pdf (ohio.gov).

Geographic Location for Dam/Levee Failure Hazard

The 2019 State of Ohio Enhanced Hazard Mitigation Plan identified 131 dams in Hamilton County that were classified as I - IV or "other." In figure 6, the red dots identify all of the dams in Hamilton County and figure 7 identifies the high hazard dams in the county. Figure 8 identifies dams outside Hamilton County that could affect the County if they fail.

Table 37: Dams in Hamilton County

I	II – III	IV	Other	Total
9	23	15	84	131

For the purposes of the plan, the Ohio Department of Natural Resource's list of 301 dams represent the most comprehensive list of dams for Hamilton County. However, other databases, such as the U.S. Army Corps of Engineer's National Inventory of Dams (NID) provide a similar and useful description and inventory of dams in Hamilton County. The discrepancy between the ODNR list of dams and NID can be attributed to some of Hamilton County dams not meeting one of the NID criteria or lack of data as described below.

The NID consists of dams meeting at least **one** of the following criteria:

1. High hazard potential classification - loss of human life is likely if the dam fails,
2. Significant hazard potential classification - no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns,
3. Equal or exceed 25 feet in height and exceed 15 acre-feet in storage,
4. Equal or exceed 50 acre-feet storage and exceed 6 feet in height.

It should be noted that although the goal of the NID is to include all dams in the United States that meet these criteria, in reality, this inventory is limited to information that can be gathered and properly interpreted. In most cases, dams within the NID criteria are regulated (construction permit, inspection, and/or enforcement) by federal or state agencies, who have basic information on the dams within their jurisdiction. There were 26 dams identified in Hamilton County according to the NID. All high hazard dams have EAPs in place, however due to data privacy and protected information as outlined in the Ohio Revised Code, Section 149.433, this information is not included in the HMP update. Existing EAPs include inundation data for all listed High Hazard dams. According to the NID, most High Hazard dams do not include a USACE risk assessment as outlined via the NID tool's risk tab. Those that have risk assessments available are noted in the Summary Vulnerability Assessment section in the following pages. High and Significant dams noted below are also outlined in Figure 6. The following table summarizes the information.

Table 38: National Inventory of Dams Information for Hamilton County

Dam Name	River	Location	NID Hazard Classification	EAP
Aston Oaks Lake Dam	Tributary to Ohio River	North Bend	High	Approved
Kreis Dam	Tributary to Sharon Creek	Sharonville	High	Approved
Lincoln Heights Upground Reservoir	Offstream	Sycamore	High	Approved

Table 38: National Inventory of Dams Information for Hamilton County				
Dam Name	River	Location	NID Hazard Classification	EAP
Sharonville Retention Dam	Tributary to Sharon Creek	Sharonville	High	Approved
West Fork Lake Dam	West Fork of Mill Creek	Cincinnati	High	Approved-
Wright Farm West Detention Basin Dam	Pleasant Run	Springfield	High	Approved
Basin `A'	Ohio River-Offstream	Miami	Significant	Not Approved
Chateau Lakes No. 1 Dam	Tributary to Taylor Creek	Green	Significant	Approved
Crossings Of Springdale Lake No. 1 Dam	Tributary to Mill Creek	Springfield	Significant	Not Approved
Eagles Lake Dam	Tributary to Taylor Creek	Green	Significant	Not Approved
Heimann Pond Dam	Tributary to Taylor Creek	Symmes	Significant	Not Approved
Hermitage Club Lake Dam	Tributary to Little Miami River	Anderson	Significant	Not Approved
Kenridge Lake Dam	North Branch Sycamore Creek	Sycamore	Significant	Not Approved
Mallard Cove Lake Dam	Tributary to Muddy Creek	Green	Significant	Not Approved
Miami View Golf Club Pond No. 1 Dam	Tributary to Great Miami River	Whitewater	Significant	Not Approved
Miami View Golf Club Pond No. 2 Dam	Tributary to Great Miami River	Whitewater	Significant	Not Approved
New Waterstone Lake Dam	Tributary to Polk Run	Symmes	Significant	Not Approved
Peter Lake Dam	Tributary to Dry Run	Anderson	Significant	Approved
Tanager Woods Lake Dam	Tributary to Polk Run	Symmes	Significant	Not Approved
Winton Woods Golf Course Lake "E" Dam	Unnamed tributary to Winton Lake	Greenshills	Significant	Approved
Winton Woods Sediment Retention Pond	Unnamed tributary to West Fork Mill Creek	Forest Park	Significant	Approved
Lake Gloria Dam	Tributary to West Fork Mill Creek	Colerain	Low	Not Approved
Miami-Whitewater Forest Lake Dam	Tributary to Dry Fork Whitewater River	Crosby	Low	Approved
Paulmeadows Lake Dam	Tributary to Polk Run	Symmes	Low	Not Approved
Strimple Creek Dam	Strimple Creek	Whitewater	Low	Approved
WASMER LAKE DAM	Tributary to Banklick Creek	Colerain	Low	Approved

Table 39: Additional Dams Impacting Hamilton County				
Dam Name	River	Location	NID Hazard Classification	EAP
Brookville Dam	Whitewater River	Brookville, IN	High	Approved
Caesar Creek Dam	Caesar Creek	Waynesville, OH	High	Approved
Marge Schott Lake Dam	Little Miami River	Cincinnati, OH	High	Approved
William H. Harsha Dam	Little Miami River	Batavia, OH	High	Approved

Figure 7: 2023 High and Significant Dam Locations in Hamilton County

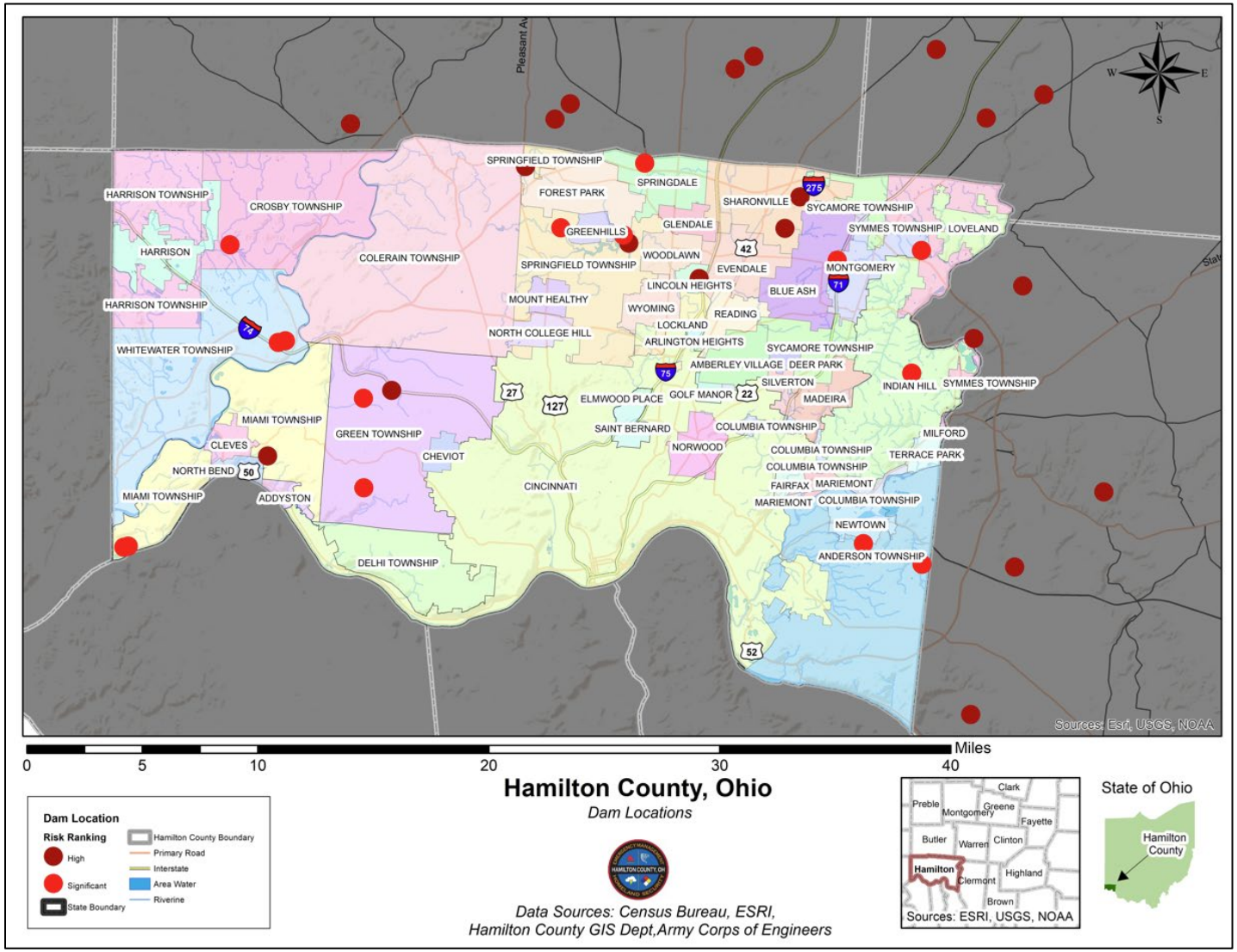
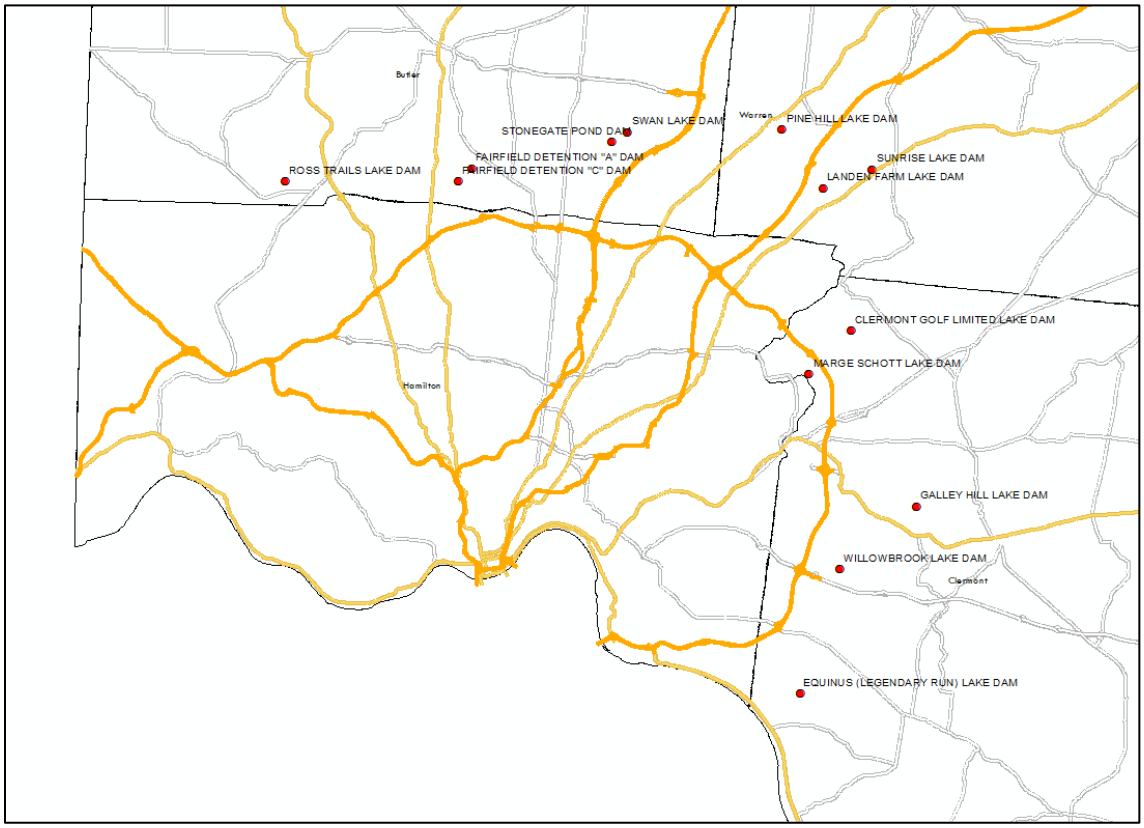


Figure 8: Potential Impacting Dams Outside of Hamilton County



The National Levee Database identified ten levees in Hamilton County. The following table summarizes the NLD information. The following figures depict the leveed areas of Hamilton County.

Table 40: National Levee Database Information for Hamilton County

Segment Name	Location	Length (miles)
Cincinnati Levee System	Cincinnati	1.39
Lunken Airport Levee System	Cincinnati	5.56
Duck Creek, OH- Phase IV B, Section 2 & Phase IV C	Cincinnati	1.02
Duck Creek, OH- Phase IV B, Section 1, Alignment B	Cincinnati	0.27
Duck Creek, OH- Phase IV B Section 1, Alignment A	Cincinnati	0.5
Duck Creek, OH- Phase IIa	Cincinnati	0.12
Duck Creek, OH- Phase III	Cincinnati	0.3
Duck Creek, OH- Phase II	Cincinnati	0.3
Hamilton Unincorporated Levee	Unincorporated	0.41

Figure 9: Leveed Areas in Hamilton County

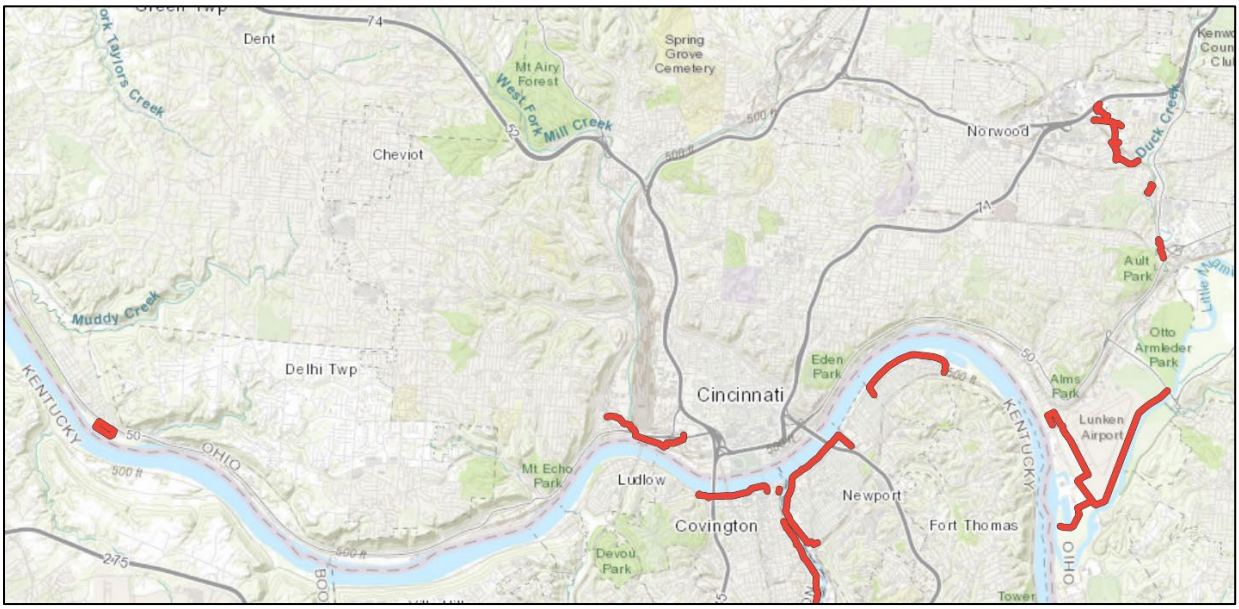
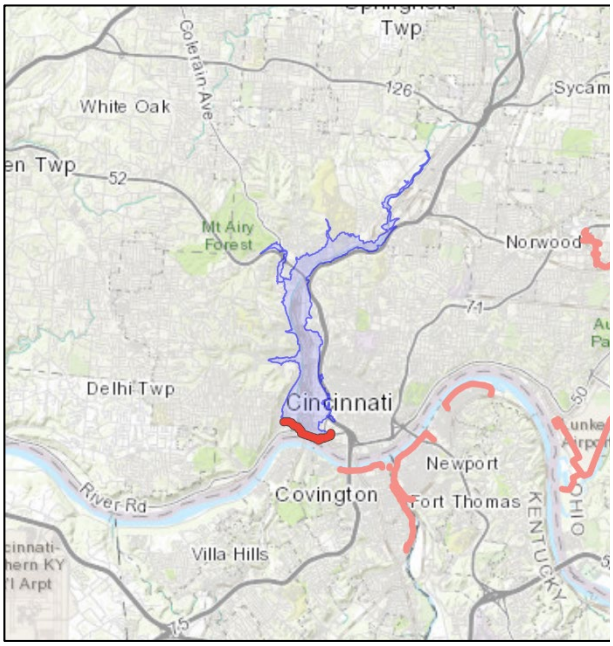
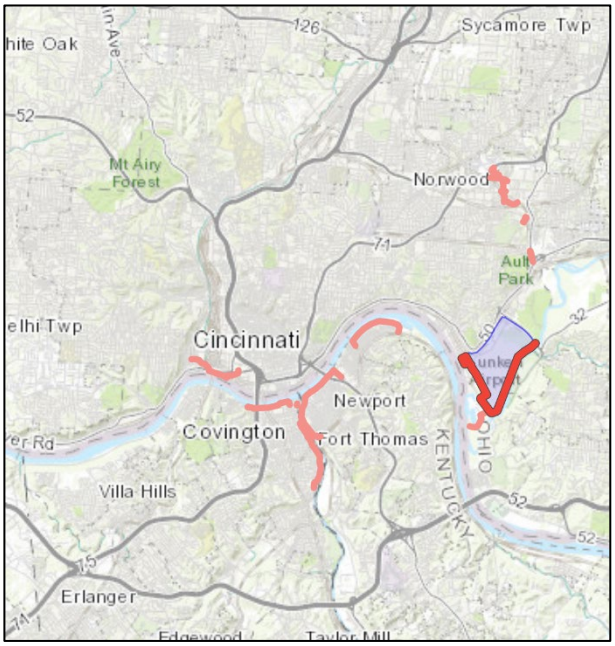


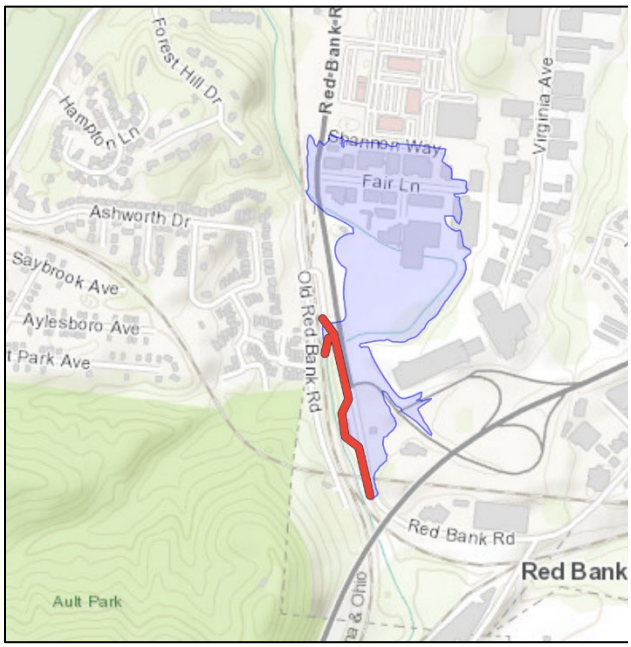
Figure 10: Hamilton County Levee Inundation Maps



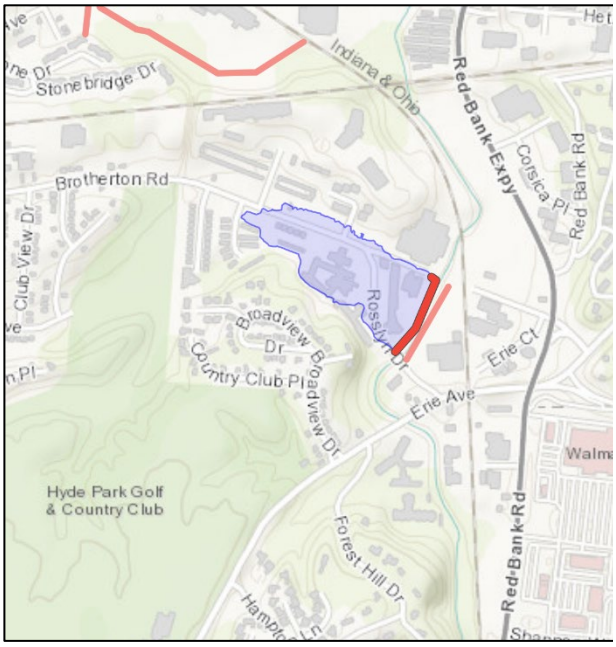
Cincinnati Levee System



Lunken Airport Levee System



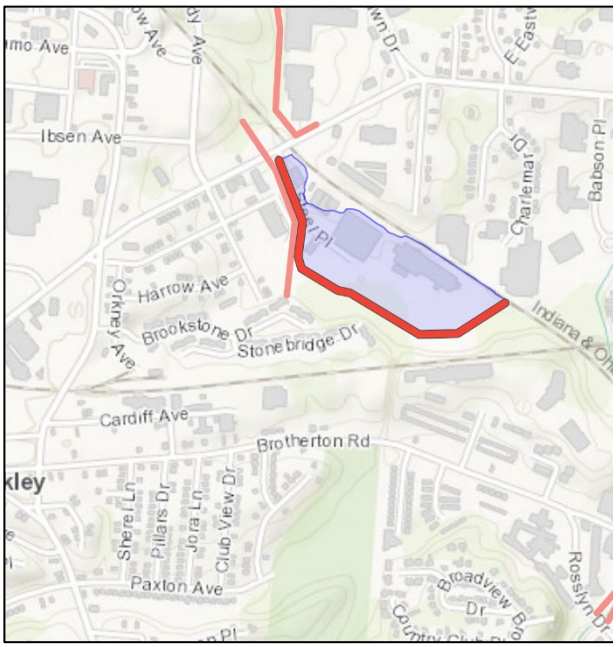
Duck Creek Phase III



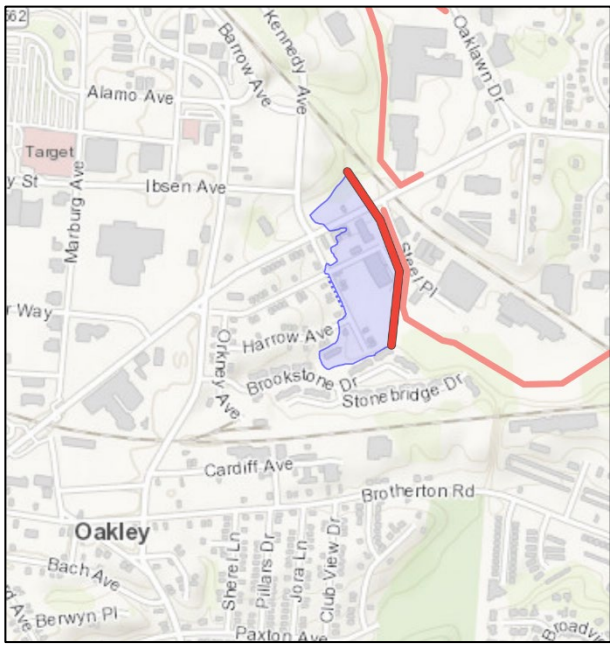
Duck Creek Phase II



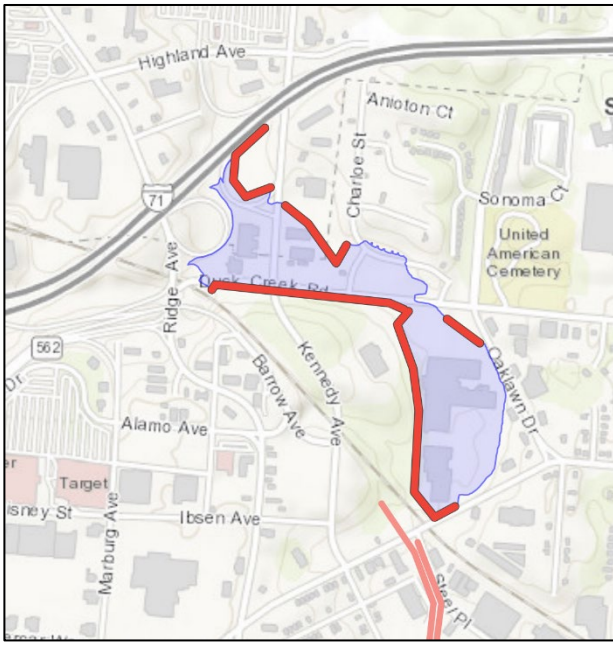
Duck Creek Phase IIa



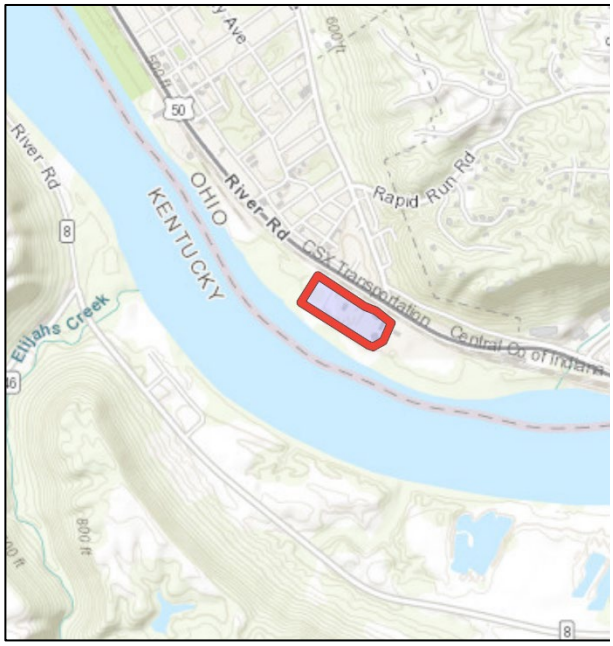
Duck Creek, OH- Phase IV B Section 1, Alignment A



Duck Creek, OH- Phase IV B Section 1, Alignment B



Duck Creek, OH - Phase IV B Section 2 & Phase IV C Levee System



Hamilton Unincorporated Levee

Hazard Extent for Dam/Levee Failure

When dams are assigned the low (L) hazard potential classification, it means that failure or incorrect operation of the dam will result in no human life losses and no economic or environmental losses. Losses are principally limited to the owner's property. Dams assigned the significant (S) hazard classification are those dams in which failure or incorrect operation results in no probable loss of human life; however, it can cause economic loss, environmental damage, and disruption of lifeline facilities. Dams classified as significant hazard potential dams are often located in predominantly rural or agricultural areas but could be located in populated areas with

a significant amount of infrastructure. Dams assigned the high (H) hazard potential classification are those dams in which failure or incorrect operation has the highest risk to cause loss of human life and significant damage to buildings and infrastructure. The ODNR-Dam Safety Program assigns the hazard potential for dams and levees as Class I, Class II, Class III, and Class IV. An EAP is required by the State of Ohio for all dams and levees identified as Class I, II, or III under the state classification system. The table below describes each hazard and provides the corresponding federal classification. The Ohio Levee Hazard Classification table describes each levee hazard classification.

Table 41: Ohio Dam Hazard Classifications[77]

Ohio Classification	Corresponding NID Classification	Hazard Description	Height (ft)	Storage (ac-ft)
Class I	High	Probable loss of life, serious hazard to health, structural damage to high value property (i.e. homes, industries, major public utilities)	>60	>5,000
Class II	Significant	Flood water damage to homes, businesses, industrial structures (no loss of life envisioned), damage to state and interstate highways, railroads, only access to residential areas	>40	>500
Class III	Low	Damage to low value, non-residential structures, local roads, agricultural crops, and livestock	>25	>50
Class IV	Other	Losses restricted mainly to the dam	≤25	≤50
Exempt	N/A	N/A	<6	15 ac-ft. OR < 10 ft & ≤ 50 ac-ft

Table 42: Ohio Levee Hazard Classifications[78]

Hazard Classification	Description
Class I	Probable loss of human life, structural collapse of at least one residence or one commercial or industrial business
Class II	Disruption of a public water supply or wastewater treatment facility, or other health hazards; flooding of residential, commercial, industrial, or publicly owned structures; damage or disruption to major roads and access to critical facilities; damage or disruption to railroads or public utilities
Class III	Property losses including but not limited to rural buildings, not otherwise described; damage or disruption to local roads
Class IV	Levee having a height of not more than three feet; losses restricted mainly to the levee, owner's property and rural lands.

[77] Ohio Emergency Management Agency.(2019).State of Ohio 2019 Mitigation Plan. Retrieved from Executive Summary | Emergency Management Agency (ohio.gov)

[78] Ohio Department Of Natural Resources.(N/A).Dam & Levee Classification. Retrieved from Dam & Levee Classification | Ohio Department of Natural Resources (ohiodnr.gov)

According to the National Inventory of Dams, seven dams are classified as high hazard, and fourteen have an Emergency Action Plan (EAP) which is a significant increase from two during the last planning period. Accurate mapping of the risks of flooding behind levees depends on knowing the condition and level of protection the levees actually provide. FEMA and the U.S. Army Corps of Engineers are working together to make sure that flood hazard maps clearly reflect the flood protection capabilities of levees, and that the maps accurately represent the flood risks posed to areas situated behind them. Levee owners— usually states, communities, or in some cases private individuals or organizations—are responsible for ensuring that the levees they own are maintained according to their design. In order to be considered creditable flood protection structures on FEMA's flood maps, levee owners must provide documentation to prove the levee meets design, operation, and maintenance standards for protection against the one percent-annual chance flood.

Table 43: Dam/Levee Failure Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Dam Failure	Inundation Area	Class IV	Class I	9 Class I Dams in Hamilton County
Levee Failure/Breach	See *Leveed Areas in Hamilton County* Figure	Class IV	Class I	3 Class I Levees in Hamilton County

Analysis of Community Development Trends

Due to the potential for such widespread and intense damage to life and property, mitigation actions and planning are necessary to remove or protect people and critical infrastructure in the path of destruction.

Previous Changes in Development

An aging dam infrastructure, such as the Mill Creek Barrier Dam, continues to be an issue, and may be cause for concern in the event of a major incident. Some of these dams need repairs and upgrades. Since 2015, there has been a slight increase in the population in Hamilton County. For communities that have experienced population growth near dams/levees, the population risk has also increased.

Climate change is increasing the likelihood of dam/levee failures. Globally, when storms do occur, there is more inches of rain and flooding events than historical records annually. Therefore, the inundation area of a dam/levee can be breached quicker than expected affecting the surrounding population and structures.

Vulnerability to Future Assets/Infrastructure for Dam/Levee Failure Hazard

The county recognizes the importance of maintaining its future assets, infrastructure, and residents. Inundation maps can highlight the areas of greatest vulnerability in each community. Future buildings' exposure would remain much the same as existing buildings.

Vulnerability Analysis for Dam/Levee Failure Hazard

Inundation maps are required to assess the impacts of dam and levee failures on communities. To be considered creditable flood protection structures on FEMA's flood maps, levee owners must provide documentation to prove the levee meets design, operation, and maintenance standards for protection against the "one percent-annual chance" flood.

Impact to Hamilton County Residents

Although the probability of a dam/levee failure is typically low, they have the potential to severely impact Hamilton County residents. A Class IV dam/levee hazard will see damage inflicted primarily on the structure itself or nearby rural lands. Class I hazards have the potential to cause widespread, major structural damage to residential areas and critical infrastructure alike. In the unlikely event that this were to happen, many Hamilton County residents and their property would be at risk of injury, death, or damage. From the people removed from dam building sites to the people who lose their homes to failing dams, most of the displaced communities come from impoverished areas already affected by climate change. Water supplies in the nearby regions would also likely be affected.

Impact to Essential Facilities and Other Property

Minor dam/levee failures may inflict relatively little damage to essential facilities, barring the dam/levee itself, but major failures have the potential to heavily damage high value commercial and residential property alike. Building Inventory: Dam/levee failures will likely inflict damage to existing buildings. For example, failure of the Fourmile Lake Dam would impact over 150 residential and nonresidential buildings 5 miles downstream of the dam.

Impact to Critical Infrastructure

Damage from minor dam/levee failures may impact only the structure or immediate area surrounding it, but major failures have the potential to take down energy facility infrastructure, severely damage pipelines, railroads, minor roads and highways, waterways, and water control structures.

Impact to Environment

Environmental damage from a major failure event can be devastating. Extensive soil erosion, land degradation, tree and vegetation damage, and dispersion of hazardous materials are all likely during the flooding resulting from a major dam/levee failure.

Impact to Operations

During less significant dam/levee failure events, impact to the operations of first responders would be manageable. During Class I events, however, the impact to operations is likely to be significant. Major roads and access points are likely to be impassable, making damaged property and at-risk populations difficult to reach. Many people may be injured and/or suddenly homeless. A dam/levee failure of sufficient magnitude would likely require resources beyond what the county could initially bring to bear. Flooding events can often require a substantial number of resources and assistance from multiple agencies and departments including local emergency response departments and state and federal departments such as the MDEQ Water Resources

Division, Dam Safety Unit and FEMA. If flooding from a dam resulted in significant damage to homes, the American Red Cross may also provide aid.
Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Public Confidence in the Jurisdiction's Governance

The public may lose confidence in the jurisdiction's governance if a dam/levee failure is a result of failure to do maintenance of the infrastructure. If the failure is a result of higher-than-normal precipitation event or another "act of God," it is unlikely that the public will lose much confidence.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Table 44: Jurisdiction-Specific Hazard Impact/Vulnerability for Dam/Levee Failure

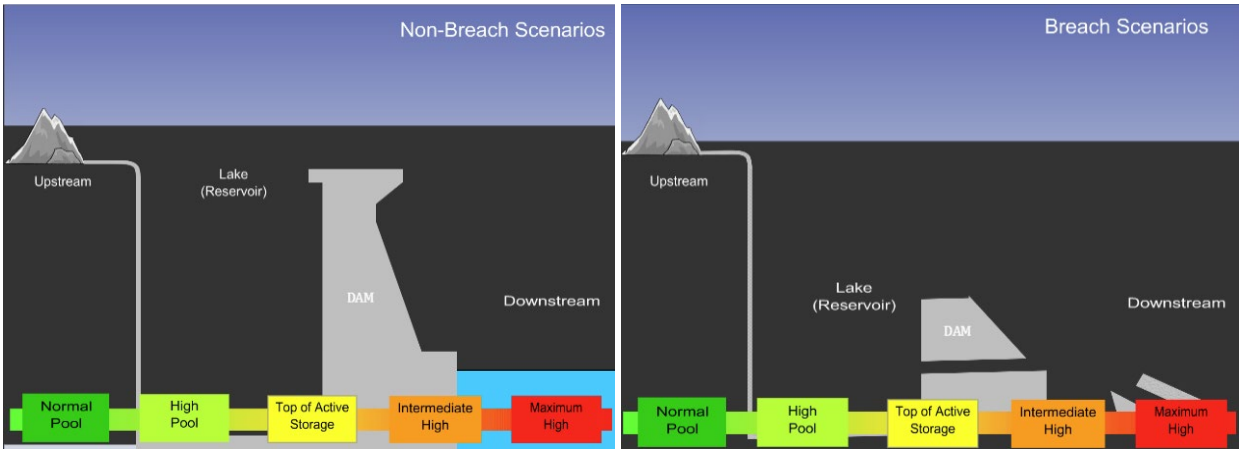
Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Blue Ash – City	One lane (Kenridge) is hard backed by an earthen dam that is topped by Kenridge Drive. This is on the eastern border and a dam failure would impact the City of Montgomery, particularly IR-71.
Cincinnati – City	The city has bridges and levees that are vulnerable that could impact transportation and flooding.
Forest Park – City	Wright Farm Detention Basin Dam and Kemper Meadow Detention Basin Dam are both threats to the city. ODNR requires emergency action plans (EAPs) for these dams. The EAPs are being updated and will be completed in 2018.
Harrison – City	A failure at Brookville Dam would impact the city and Harrison Township.
Mt. Healthy – City	There is a small dam at the end of Rugg St. that may adversely impact residents in the event of a failure.
North College Hill – City	The city has a large underground water culvert that runs through the north side of the jurisdiction.
Sharonville – City	The city has a retention dam.
The Village of Indian Hill – City	Heimann Pond Dam is a concern to the village. Located on Kugler Mill Road, this Class II Dam is a private dam regulated by ODNR.
Evendale – Village	Dam failure at a regional detention basin, Kingsport, Sharon Woods Dam, and Millcreek are of concern to the village.
Glendale – Village	Winton Woods Lake poses a minor risk to the village but is unlikely to fail.
Greenhills – Village	Greenhills Village could experience flooding if the dam at Winton Woods Lake did not function properly (e.g. detention at golf course backing up across Winton, etc.). Winton Lake, a FEMA identified flood hazard zone, sits along the southern boundary of the village. In 1994, Winton Woods Retention Basin was constructed by Great Parks of Hamilton County. It is permitted by the Ohio Department of Natural Resources as a Class II Dam, file number 924-033. The basin is located northwest of the West Fork of the Mill Creek Dam, adjacent to the downstream end of Winton Lake. The basin occupies 37 surface acres to the out slopes of the dike walls. The interior impoundment area is approximately 26 acres. The design volume of the basin is approximately 1,100,000 cubic yards.
Terrace Park – Village	The southern border is the Little Miami River. If the East Fork Dam were to fail, it would have a devastating effect on the village.
Harrison – Township	A failure at Brookville Dam would impact the city and township.
Miami – Township	Aston Oaks Lake poses a threat to the township.
Springfield – Township	Winton Woods Lake Dam is listed by Homeland Security as a threat. Although it has a minimal risk of failure, it is a potential terrorist concern.

Table 44: Jurisdiction-Specific Hazard Impact/Vulnerability for Dam/Levee Failure	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Whitewater – Township	Hidden Valley Lake Dam and Brookville would greatly impact the township should the dam fail.

Summary Vulnerability Assessment

This planning effort did not include inundation mapping for Hamilton County's dams. An inundation map is required to accurately determine the numbers and replacement costs of facilities that reside downstream of dams. To determine the following loss estimation, the Core Planning Team identified the largest dams without inundation maps. Analysts identified a downstream area within five miles of the dam and ran a Hazus-MH 100-year flood model to estimate potential losses to structures in that area. It is important to note that this is not an engineered study and does not include damages related to velocity. However, a USACE assessment is depicted below for the West Fork Lake Dam.

Figure 11: West Fork of Mill Creek Dam Scenarios



Scenarios are designated as either non-breach or breach. In non-breach scenarios the dam is operating as designed for the given pool level, releasing from outlets and controlled or uncontrolled spillways. In breach scenarios the continuity of the structure has been compromised, resulting in uncontrolled water releases that exceed the magnitude of releases in the equivalent non-breach scenario.

The Maximum High (MH) scenario (breach and non-breach) is based on the inflow design flood per FEMA guidelines and indicates the maximum reservoir pool level and likely maximum extent of inundation.

The Normal High (NH) scenario (breach and non-breach) represents normal full reservoir pool elevations with no flooding occurring downstream prior to dam releases. The NH scenarios represent the fair weather or sunny day scenarios per FEMA guidelines. The Intermediate High (IH), Top of Active Storage (TAS) and Security (SS) scenarios are intermediate pool levels between NH and MH. They are established based on the dam's design characteristics and its operating history. The TAS represents the reservoir pool elevation the structure was designed for (such as

top of flood gates) and above which water must be released to ensure the integrity of the dam. The SS represents a high reservoir pool level observed or exceeded 1% of the time during the dam's operating history. The IH represents a realistic operating condition that could be experienced during a major flood where the reservoir pool elevation exceeds Top of Active Storage.

Table 45: West Fork of Mill Creek Dam Consequence Estimate

Scenario	Type	Pool Elevation	Daytime People at Risk	Nighttime People at Risk	Buildings at Risk	Economic Cost
Maximum High Pool	Breach	730.4	29,688	16,298	6,633	$ 3,768,845,222
Top of Active Storage Pool -	Non-Breach	700.5	0	0	0	$ 0
Top of Active Storage Pool	Breach	700.5	9,603	6,337	2,680	$ 1,136,482,177
High Pool	Non-Breach	682.6	0	0	0	$ 0
High Pool	Breach	682.6	2,594	1,179	590	$ 245,887,883
Normal Pool	Non-Breach	675.7	0	0	0	$ 0
Normal Pool	Breach	675.7	1,328	770	349	$ 110,458,859
Maximum High Pool -	Non-Breach	730.4	2,717	1,411	627	$ 217,610,335
Intermediate High Pool -	Breach	718.5	20,373	11,767	4,672	$ 2,560,563,854
Intermediate High Pool -	Non-Breach	718.5	771	664	282	$ 93,791,952
Total:	-	7,014.4	67,074	38,426	15,833	$8,133,640,282

Table 46: Dam Vulnerability Assessment

Dam Name	Building Type	Building Count	Building Losses
Sharonville Retention Dam	Non-Residential	16	$115,520.00
	Residential	32	$202,230.00
Fourmile Lake Dam	Non-Residential	33	$3,673,520.00
	Residential	123	$2,950,640.00
Eagles Lake Dam	Non-Residential	32	$696,000.00
	Residential	70	$387,420.00
Heimann Pond Dam	Non-Residential	14	$466,480.00
	Residential	46	$71,580.00
Totals	**Non-Residential**	**103**	**$5,095,860.00**
	Residential	**349**	**$3,175,670.00**

To determine the following loss estimation for levee failure, the Core Planning Team identified the area(s) protected by the levees and utilized data from the National Levee Database. Analysts estimated the number of people at-risk, structures at-risk and potential losses based on property value in the areas protected by the levees. It should be noted that the levee near Lunken Airport was determined to be a foot in height short of meeting federal flood wall and levee standards.

Table 47: Levee Vulnerability Assessment

Segment Name	Location	Length (miles)	People At-Risk	Structures At-Risk	Property Value/ Potential Losses
Cincinnati Levee System	Cincinnati	1.39	12,163	1,500	$2.09B
Lunken Airport Levee System	Cincinnati	5.56	1,752	131	$448M
Duck Creek, OH- Phase IV B, Section 2 & Phase IV C	Cincinnati	1.02	456	26	$53.2M
Duck Creek, OH- Phase IV B, Section 1, Alignment B	Cincinnati	0.27	55	30	$7.19M
Duck Creek, OH- Phase IV B Section 1, Alignment A	Cincinnati	0.5	54	7	$40.4M
Duck Creek, OH- Phase IIa	Cincinnati	0.12	42	1	$9.68M
Duck Creek, OH- Phase III	Fairfax Village	0.3	233	15	$42.5M
Duck Creek, OH- Phase II	Cincinnati	0.13	56	32	$77.2M
Hamilton Unincorporated Levee	Unincorporated	0.41	3	1	$364,214.47
Totals		**9.7**	**14,814**	**1,742**	**$2,769,832,529.82**

Table 48: Dam/Levee Failure Hazard Evaluation and Impact/Consequence Assessment

Hazard Event	Probability	Consequence				Total Risk
	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Dam/Levee Failure	1	4	5	28	37	**23**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Drought

Total Risk Score: 19

The meteorological condition that creates a drought is below normal rainfall. However, excessive heat can lead to increased evaporation, which will enhance drought conditions. Droughts can occur in any month. Drought differs from normal arid conditions found in low rainfall areas. Drought is the consequence of a reduction in the amount of precipitation over an undetermined length of time (usually a growing season or more). There are several common types of droughts including meteorological, hydrological, agricultural, and socioeconomic. The following list describes the sequence of drought occurrence and impacts of drought types according to the National Integrated Drought Information System (NIDIS).

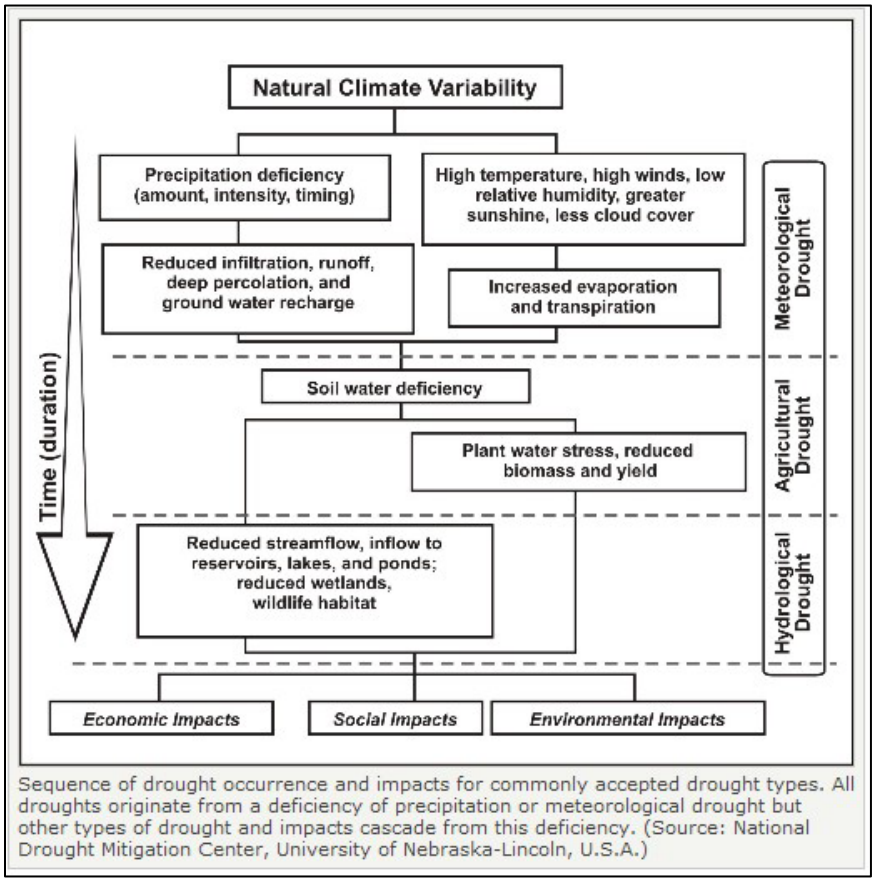
- **Meteorological**: Defined by the degree of dryness (as compared to an average) and the duration of the dry period. These are region-specific and only appropriate for regions characterized by year-round precipitation.
- **Hydrological**: Associated with the effects of periods of precipitation shortfalls (including snow) on surface or subsurface water supply, e.g. stream flow, reservoir and lake levels, and groundwater. Impacts of hydrological droughts do not emerge as quickly as meteorological and agricultural droughts. For example, deficiency on reservoir levels may not affect hydroelectric power production or recreational uses for many months.
- **Agricultural**: Links characteristics of meteorological or hydrological drought to agricultural impacts. An agricultural drought accounts for the variable susceptibility of crops during different stages of crop development from emergence to maturity.
- **Socioeconomic**: Links the supply and demand of some economic good, e.g. water, forage, food grains, and fish, with elements of meteorological, hydrological, or agricultural droughts. This type of drought occurs when demand for an economic good exceeds supply as a result of weather-related shortfall in water supply.

The severity of a drought depends on location, duration, and geographical extent. Additionally, drought severity depends on the water supply, usage demands made by human activities, vegetation, and agricultural operations. Drought brings several different problems that must be addressed. The quality and quantity of crops, livestock, and other agricultural assets will be affected during a drought. Drought can adversely impact forested areas leading to an increased potential for extremely destructive forest and woodland fires that could threaten residential, commercial, and recreational structures.
Drought conditions are often accompanied by extreme heat, which is defined as temperatures that hover 10°F or more above the average high for the area and last for several weeks. Extreme heat can occur in humid conditions when high atmospheric pressure traps the damp air near the ground or in dry conditions, which often provoke dust storms.

The Palmer Drought Severity Index (PDSI), developed by W.C. Palmer in 1965, is a soil moisture algorithm utilized by most federal and state government agencies to trigger drought relief programs and responses. The PDSI—shown in the table below—is based on the supply-and-demand concept of the water balance equation, considering more than just the precipitation deficit at specific locations. The objective of the PDSI is to provide standardized measurements of moisture, so that comparisons can be made between locations and periods of time—usually

months. The PDSI is designed so that a -4.0 in 95 South Carolina has the same meaning in terms of the moisture departure from a climatological normal as a -4.0 does in Ohio.

Figure 12: Natural Climate Variability



Sequence of drought occurrence and impacts for commonly accepted drought types. All droughts originate from a deficiency of precipitation or meteorological drought but other types of drought and impacts cascade from this deficiency. (Source: National Drought Mitigation Center, University of Nebraska-Lincoln, U.S.A.)

Table 49: Palmer Drought Severity Classifications

Classification Rating	Classification Description
4.0 or greater	Extremely Wet
3.0 to 3.99	Very Wet
2.0 to 2.99	Moderately Wet
1.0 to 1.99	Slightly Wet
0.5 to 0.99	Incipient Wet Spell
0.49 to -0.49	Near Normal
-0.5 to -0.99	Incipient Dry Spell
-1.0 to -1.99	Mild Drought
-2.0 to -2.99	Moderate Drought
-3.0 to -3.99	Severe Drought
-4.0 or less	Extreme Drought

Previous Occurrences for Drought Hazard

The NCEI database reported 316 drought events that affected Ohio, including 2 in Hamilton County, see below, since 1994 listed in Table 48. These events occurred over the course of 15

separate days (there were not 316 separate droughts) and impacted a total of 82 County/Zone areas. The table below defines Hamilton (Zone) as portions of Hamilton County that were affected by drought hazard.

Table 50: Hamilton County Drought Occurrences – 5 Year	
Location	Date
Hamilton (Zone)	7/1/1999
Hamilton (Zone)	8/1/1999

In 2005, the National Drought Mitigation Center (NDMC) began development of a comprehensive drought impact database, the Drought Impact Reporter (DIR). According to the DIR, Hamilton County is particularly vulnerable to eight categories of drought impacts. The category information for Hamilton County is no longer available through the National Drought Mitigation Center (NDMC). However, the table below lists the intensity of drought hazards as explained in the U.S. Drought Monitor Scale.

Table 51: U. S Drought Monitor Scale[79]	
Intensity	
D0	Abnormally Dry
D1	Moderate Drought
D2	Severe Drought
D3	Extreme Drought
D4	Exceptional Drought

The following table depicts drought events in Hamilton County from 2017-2023.

Table 52: Hamilton County Drought Activity 2017-2023 Drought Conditions (Percent Area)						
Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
1/3/2023	36.08	63.92	0.00	0.00	0.00	0.00
12/27/2022	0.00	100.00	63.93	0.00	0.00	0.00
12/20/2022	0.07	99.93	41.74	0.00	0.00	0.00
12/13/2022	0.54	99.46	49.97	0.00	0.00	0.00
12/6/2022	0.00	100.00	76.00	0.00	0.00	0.00
11/29/2022	0.00	100.00	74.50	0.00	0.00	0.00
11/22/2022	0.00	100.00	100.00	0.00	0.00	0.00
11/15/2022	0.00	100.00	100.00	0.00	0.00	0.00
11/8/2022	0.00	100.00	100.00	0.00	0.00	0.00
11/1/2022	0.00	100.00	100.00	0.00	0.00	0.00
10/25/2022	0.00	100.00	100.00	0.00	0.00	0.00
10/18/2022	0.00	100.00	0.00	0.00	0.00	0.00
10/11/2022	24.01	75.99	0.00	0.00	0.00	0.00

[79] National Integrated Drought Information System.(2023).U.S Drought Monitor Conditions Retrieved from National Current Conditions | Drought.gov.

Table 52: Hamilton County Drought Activity 2017-2023 Drought Conditions (Percent Area)						
Week	**None**	**D0-D4**	**D1-D4**	**D2-D4**	**D3-D4**	**D4**
10/4/2022	97.89	2.11	0.00	0.00	0.00	0.00
7/26/2022	39.80	60.20	0.00	0.00	0.00	0.00
7/19/2022	34.75	65.25	0.00	0.00	0.00	0.00
7/12/2022	34.35	65.65	0.00	0.00	0.00	0.00
10/5/2021	90.34	9.66	0.00	0.00	0.00	0.00
9/28/2021	90.34	9.66	0.00	0.00	0.00	0.00
9/21/2021	90.34	9.66	0.00	0.00	0.00	0.00
9/14/2021	90.34	9.66	0.00	0.00	0.00	0.00
9/7/2021	90.34	9.66	0.00	0.00	0.00	0.00
8/31/2021	24.67	75.33	0.00	0.00	0.00	0.00
8/24/2021	4.38	95.62	0.00	0.00	0.00	0.00
8/17/2021	4.41	95.59	0.00	0.00	0.00	0.00
8/10/2021	41.71	58.29	0.00	0.00	0.00	0.00
4/27/2021	3.49	96.51	0.00	0.00	0.00	0.00
10/20/2020	59.90	40.10	0.00	0.00	0.00	0.00
10/13/2020	0.51	99.49	0.00	0.00	0.00	0.00
10/6/2020	0.51	99.49	0.00	0.00	0.00	0.00
9/29/2020	5.39	94.61	0.00	0.00	0.00	0.00
9/22/2020	94.74	5.26	0.00	0.00	0.00	0.00
8/4/2020	99.10	0.90	0.00	0.00	0.00	0.00
7/28/2020	99.10	0.90	0.00	0.00	0.00	0.00
7/21/2020	99.10	0.90	0.00	0.00	0.00	0.00
6/23/2020	85.46	14.54	0.00	0.00	0.00	0.00
6/16/2020	85.46	14.54	0.00	0.00	0.00	0.00
11/5/2019	66.71	33.29	0.00	0.00	0.00	0.00
10/29/2019	0.00	100.00	32.27	0.00	0.00	0.00
10/22/2019	0.00	100.00	100.00	0.00	0.00	0.00
10/15/2019	0.00	100.00	100.00	0.00	0.00	0.00
10/8/2019	0.00	100.00	51.28	0.00	0.00	0.00
10/1/2019	0.00	100.00	51.33	0.00	0.00	0.00
9/24/2019	0.00	100.00	0.00	0.00	0.00	0.00
8/27/2019	95.89	4.11	0.00	0.00	0.00	0.00
8/20/2019	95.89	4.11	0.00	0.00	0.00	0.00
6/13/2017	74.32	25.68	0.00	0.00	0.00	0.00
2/28/2017	38.60	61.40	0.00	0.00	0.00	0.00

Probability for Drought Hazard

This hazard is considered to be of “Low Probability" because this hazard was determined to be extremely rare with little to no documented history of significant occurrences or events. While it is possible that low impact events may occur on occasion, the hazard's overall impact to the County and participating jurisdictions would be very minor.

Geographic Location for Drought Hazard

Droughts are regional in nature. All areas of the United States are vulnerable to the risk of drought.

Hazard Extent for Drought

Droughts can be widespread or localized events. The extent of droughts varies both in terms of the extent of the heat and range of precipitation.

Table 53: Drought Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Drought	County-wide	0	D4 (Exceptional Drought)	Exceptional drought conditions were recorded from August 2007 to October 2007.

Analysis of Community Development Trends

Because droughts are regional in nature, future development will be impacted across the county. Although urban and rural areas are equally vulnerable to this hazard, those living in urban areas may have a greater risk from the effects of a prolonged heat wave, which may accompany prolonged drought conditions. According to FEMA, the atmospheric conditions that create extreme heat tend to trap pollutants in urban areas, adding contaminated air to the excessively hot temperatures and creating increased health problems. Furthermore, asphalt and concrete store heat longer, gradually releasing it at night and producing high nighttime temperatures. This phenomenon is known as the "urban heat island effect". Local officials should address drought hazards by educating the public on steps to take before and during the event—for example, temporary window reflectors to direct heat back outside, staying indoors as much as possible, and avoiding strenuous work during the warmest part of the day.

Previous Changes in Development

No significant or notable developmental (construction, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. However, the worlds' temperatures are trending higher due to climate change. As a result, the likeliness, severity, and frequency are increasing because the surface water levels are reducing resulting in drier soil and vegetation for prolonged periods of time.

Vulnerability to Future Assets/Infrastructure for Drought Hazard

Future development will remain vulnerable to these events. Typically, some urban and rural areas are more susceptible than others. For example, urban areas are subject to water shortages during periods of drought. Excessive demands of the populated area place a limit on water resources. In rural areas, crops and livestock may suffer from extended periods of heat and drought. Dry conditions can lead to the ignition of wildfires that could threaten residential, commercial, and recreational areas.

Vulnerability Analysis for Drought Hazard

Drought impacts can be an equally distributed threat across the entire jurisdiction; therefore, the county is vulnerable to this hazard and can expect similar impacts within the affected area. The entire population and all buildings have been identified as at risk.

Impact to Hamilton County Residents

The risk to the lives of Hamilton County residents from a drought event is low. In Crosby Township, there are four major farms that are vulnerable to drought. Similarly, a drought would greatly impact the township with its large agricultural economy in Whitewater Township. Possible loss of human life from a drought event is often largely due to secondary effects such as heat, fire, and other health-related problems such as increased pollutant concentrations in surface water. If precipitation deficiencies continue, then people dependent on other sources of water will begin to feel the effects of the shortage. Those vulnerable occupational groups: residents who work in the agriculture sector of the economy may be impacted severely. While a true food shortage resulting from drought or famine is unlikely in the near future, significant food price spikes caused by agricultural disruptions could place food beyond the financial reach of many residents, especially lower income households.

Impact to Essential Facilities and Other Property

All essential facilities are vulnerable to drought. An essential facility will encounter many of the same impacts as any other building within the jurisdiction, which should involve only minor damage. These impacts include water shortages, fires as a result of drought conditions, and residents in need of medical care from the heat and dry weather. Building Inventory: No structural damage to existing building stock is expected due to drought, however the buildings within the county can all expect water shortages and increased risk of fires because of drought conditions.

Impact to Critical Infrastructure

Critical infrastructure will be minimally impacted by drought. Most impacts, if any, would be secondary in nature.

Impact to Environment

When no rain or only a very small amount of rain falls, soil can dry out and plants can die. When rainfall is less than normal for several weeks, months, or years, the flow of streams and rivers decline and the water levels in lakes, reservoirs, and wells fall. Reduced crops, rangeland, and forest productivity as well as damage to wildlife and fish habitats are all impacts of drought events. Droughts are also associated with increases in insect infestations, plant disease, and wind erosion. These can impact forests and reduce growth. The incidence of wildfires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk.

Although no data demonstrates the economic impact of past drought events on Hamilton County, the most significant economic effect of drought is on agriculture. Noted below is the market value of total crop sales with a total value of $14,001,000.

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Figure 13: Market Value of Agriculture Products Sold[80]

	Sales ($1,000)
Total	**23,037**
Crops	**14,001**
Grains, oilseeds, dry beans, dry peas	2,095
Tobacco	-
Cotton and cottonseed	-
Vegetables, melons, potatoes, sweet potatoes	1,162
Fruits, tree nuts, berries	(D)
Nursery, greenhouse, floriculture, sod	10,271
Cultivated Christmas trees, short rotation woody crops	(D)
Other crops and hay	292
Livestock, poultry, and products	**9,036**
Poultry and eggs	(D)
Cattle and calves	306
Milk from cows	(D)
Hogs and pigs	8
Sheep, goats, wool, mohair, milk	31
Horses, ponies, mules, burros, donkeys	306
Aquaculture	(D)
Other animals and animal products	139

Climate change is expected to change the frequency and intensity of drought patterns. Drought can affect agriculture, critical infrastructure, and various public services and create competition for water resources between urban, rural, and industrial needs. As temperatures climb, evaporation rates increase. Severe droughts can threaten drinking water supplies and disrupt agriculture.

Impact to Operations

Most first responder operations should experience relatively little interruption during a drought event. Medical facilities may experience an increase in residents in need of medical care from the heat and dry weather, but this would only be true in extreme cases. In extreme cases, fire operations may have limited access to water due to drought conditions.

Public Confidence in the Jurisdiction's Governance

Public confidence in the jurisdiction's governance is not normally impacted by droughts. If the droughts are severe enough to impact fire operations, there may be limited loss of public confidence in the jurisdiction's governance.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

[80] Census of Agriculture. (2017). Hamilton County Profile. Retrieved from cp39061.pdf (usda.gov).

Table 54: Jurisdiction-Specific Hazard Impact/Vulnerability for Drought	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Mariemont – Village	The "South 80" area is located in the village. Contractors farm next to the Little Miami River.
Crosby – Township	There are four major farms that are vulnerable to drought.
Whitewater – Township	A drought would greatly impact the township with its large agricultural economy.

Summary Vulnerability Assessment

Droughts affect mostly humans, particularly special needs populations, and animals. For this planning effort, it was not possible to analyze the number of lives or amount of property exposed to the impacts of drought. Property damage and losses were not calculated for this hazard due to the lack of historical and local data.

Table 55: Drought Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Drought	1	4	9	18	31	**19**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

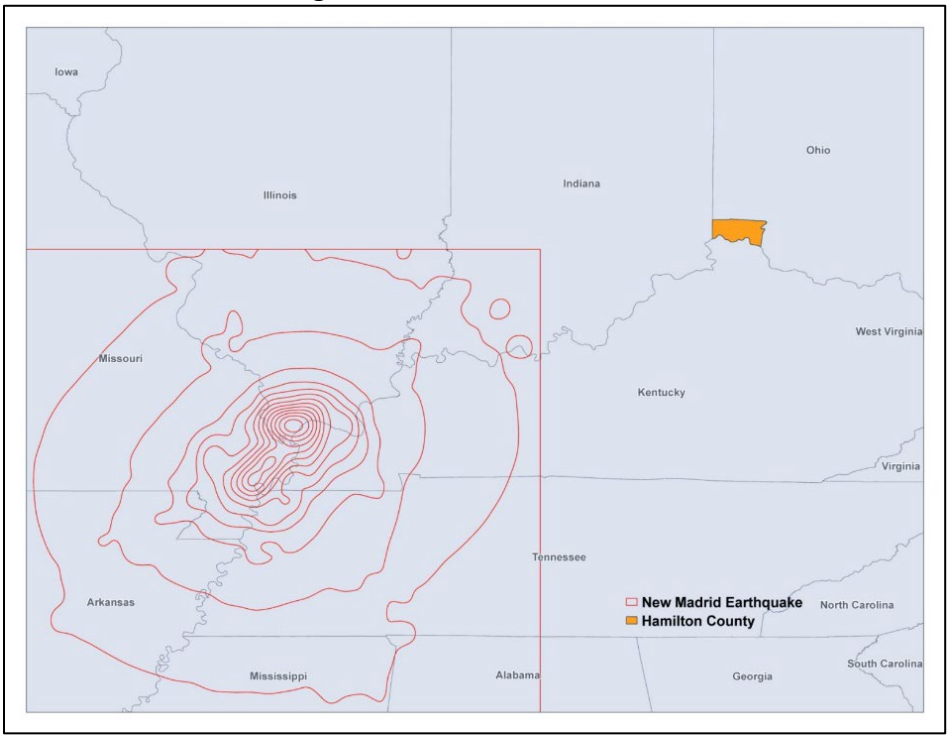
Earthquake

Total Risk Score: 33

Earth has three major regions: the core, mantel, and crust. The core is the center, inner layer of the Earth and the mantel is the middle layer. Most earthquakes occur along the crust which is the outer most layer and made up of tectonic plates. The tectonic plates are always in constant motion. For hundreds of millions of years, the forces of plate tectonics have shaped Earth as the huge plates that form the Earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free, causing seismic waves to move through Earth's rock and the ground to shake.

Although, most earthquakes occur at the boundaries where the plates meet, some earthquakes occur in the middle of plates, as is the case for seismic zones in the Midwestern United States. The most seismically active area in the Midwest is referred to as the New Madrid Seismic Zone.

Figure 14: New Madrid Zone



However, this zone is not of particular concern to Ohio. Ohio geologically contains both fault and rift zones.[81]

Fault zone

An area where there are closely spaced faults or fractures between two blocks of rock.

[81] Ohio Emergency Management Agency.(2019).State of Ohio Enhanced Hazard Mitigation Plan. Retrieved from https://www.ema.ohio.gov/static/mip/links/2019_sohmp-FullCopy.pdf.

Rift zone

Areas of weakness in a volcano that allow magma to travel underground from the core region, with successive eruptions. [82] Ground shaking from strong earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill and other unstable soil, and trailers or homes not tied to their foundations are at risk because they can be shaken off their mountings during an earthquake. When an earthquake occurs in a populated area, it may cause deaths, injuries, and extensive property damage.

The possibility of the occurrence of a catastrophic earthquake in the central and eastern United States is real, as evidenced by history and described throughout this section. The impacts of significant earthquakes affect large areas, terminating public services and systems needed to aid the suffering and displaced. These impaired systems are interrelated in the hardest struck zones. Power lines, water and sanitary lines, and public communication may be lost; and highways, railways, rivers, and ports may not allow transportation to the affected region. Furthermore, essential facilities, such as fire and police departments and hospitals, may be disrupted if not previously improved to resist earthquakes.

Mass relocation may be necessary, but the residents who are suffering from the earthquake can neither leave the heavily impacted areas nor receive aid or even communication in the aftermath of a significant event.

Magnitude, which is determined from measurements on seismographs, measures the energy released at the source of the earthquake. Intensity measures the strength of shaking produced by the earthquake at a certain location and is determined from effects on people, human structures, and the natural environment. Tables 54 and 55 define earthquake magnitudes and their corresponding intensities.

Table 56: Abbreviated Modified Mercalli Intensity Scale

Mercalli Intensity	Description
I	Not felt except by a very few under especially favorable conditions.
II	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.

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Table 56: Abbreviated Modified Mercalli Intensity Scale	
Mercalli Intensity	**Description**
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Table 57: Earthquake Magnitude vs. Modified Mercalli Intensity Scale[83]	
Earthquake Magnitude	**Typical Maximum Modified Mercalli Intensity**
1.0 – 3.0	I
3.0 – 3.9	II – III
4.0 – 4.9	IV – V
5.0 – 5.9	VI – VII
6.0 – 6.9	VII – IX
7.0 and higher	VIII or higher

Previous Occurrences for Earthquake Hazard

Since 1950, Ohio has experienced 233 earthquakes. [84]Earthquakes in Ohio have happened continually and there is a clear precedent to expect them to regularly continue for the foreseeable future. Southeastern Ohio, specifically, has been the site of at least 12 felt earthquakes since 1776. Of the two most earthquake prone areas of Ohio, the Northeastern Ohio Seismic Zone is the closest to Hamilton County.

The most recent earthquake recorded in Hamilton County specifically was on October 17, 1937. The earthquake had a magnitude of 2.9 and had a felt area of only 150 square km.

On December 31, 2011, an earthquake centered on Youngstown measured 4.0 in magnitude. Approximately 4,700 individuals submitted felt reports to the United States Geological Survey (USGS) and minor damage occurred in the form of cracked plaster on buildings and glassware falling off shelves. This was the eleventh earthquake in a sequence that began at Youngstown on March 17, 2011. According to the Ohio Department of Natural Resources (DNR), the series of quakes resulted from hydraulic injection of gas drilling wastewater into the earth.

The most damaging earthquake in Ohio occurred on March 8, 1937, in western Ohio near the town of Anna and measured 5.4 in magnitude. In Anna—where most of the damage occurred—chimneys 69 toppled, foundations and plaster cracked, water wells were disturbed, and cemetery monuments were rotated. The earthquake caused building damage as far away as Fort Wayne, Indiana and was reportedly felt in Indiana, Illinois, Kentucky, Michigan, Missouri, West Virginia, Pennsylvania, and Southern Canada.

[83] https://earthquake.usgs.gov/learn/topics/mag_vs_int.php

[84] Ohio Emergency Management Agency. (2019). State of Ohio Enhanced Hazard Mitigation Plan. Retrieved from 2019_sohmp-FullCopy.pdf (ohio.gov).

One earthquake which impacted the state from outside the boundary region occurred on August 23, 2011, when a magnitude 5.8 earthquake in Virginia was felt across most of Ohio. Damages were reported in the epicentral region; however, none were identified in Ohio. Additionally, a set of 4.5 magnitude twin shocks occurring 12 seconds apart on December 9, 2003, in central Virginia were felt as far away as Marietta, though little physical damage was reported.[85][86]

Table 58: Earthquakes Impacting Hamilton County			
Location	Date	Magnitude	Lat/Long
Sidney, Ohio	06/18/1875	4.7	40.2N 84.0W
Lima, Ohio	09/19/1884	4.8	40.7N 84.1W
Portsmouth, Ohio	05/17/1901	4.3	38.7N 82.9W
Meigs County, Ohio	11/05/1926	3.6	39.1N 82.1W
Anna, Ohio	09/30/1930	4.2	40.3N 84.3W
Shelby County, Ohio	09/20/1931	4.7	40.4N 84.2W
Anna, Ohio	03/02/1937	4.9	40.4N 84.2W
Anna, Ohio	03/08/1937	5.4	40.4N 84.2W
Lake County, Ohio	01/31/1986	5.0	41.6N 81.1W
St. Marys, Ohio	07/12/1986	4.5	40.5N 84.3W
Ashtabula, Ohio	01/25/2001	4.5	41.8N 80.7W

According to the Ohio Department of Natural Resources, there have been five earthquakes recorded with an epicenter in Cincinnati, Hamilton County. The table below lists the details of each.

Table 59: Earthquake History of Hamilton County[87]					
Date	Magnitude	Magnitude Type	Modified Mercalli Intensity	Felt Area (km)	Notes
05/04/1925	2.5	MMI	II		Earthquake near Cincinnati
10/08/1936	3.3	Felt area	III	1.8	Slight earthquake felt by many in downtown areas of Cincinnati and Middletown. Plates and chairs were moved by the vibration, which lasted approx. 5 seconds
12/26/1936	2.9	MMI	III		Houses in Cincinnati area were shaken by a slight earthquake. Tremor lasted 10-15 seconds and vibrated chairs. It was accompanied by a rumbling noise
12/26/1936	2.9	MMI	III		A second shock very similar to the one above was felt by residents in the area.
10/17/1937	2.9	Felt area	III	0.15	Shock felt by many people in the suburbs of the area.
01/12/1983	2	NF	II		

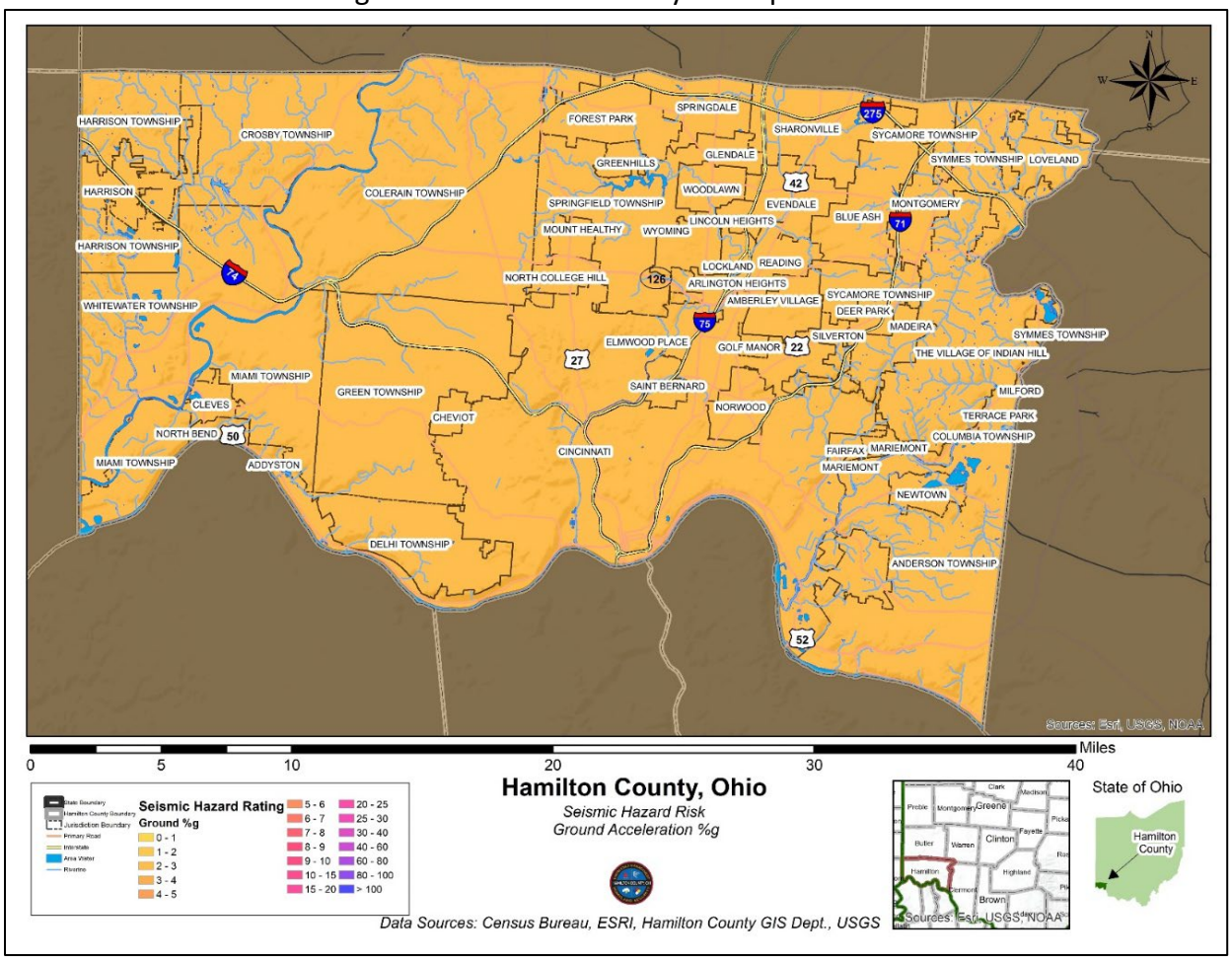
There has been no record of major earthquakes since the last update.

[85] Earthquakes in Ohio, Educational Leaflet No. 9, Revised Edition 2015
[86] http://geosurvey.ohiodnr.gov/earthquakes-ohioseis/quakes-felt-in-ohio/catalog-of-past-ohio-quakes/20-quakes-by-year/1950-to-1999
[87] https://gis.ohiodnr.gov/MapViewer/?config=earthquakes

Probability for Earthquake Hazard

This hazard is considered to be of "Low Probability" because it was determined to be extremely rare. While it is possible that low-impact events may occur on occasion, the hazard's overall impact to the County and participating jurisdictions would be very minor.

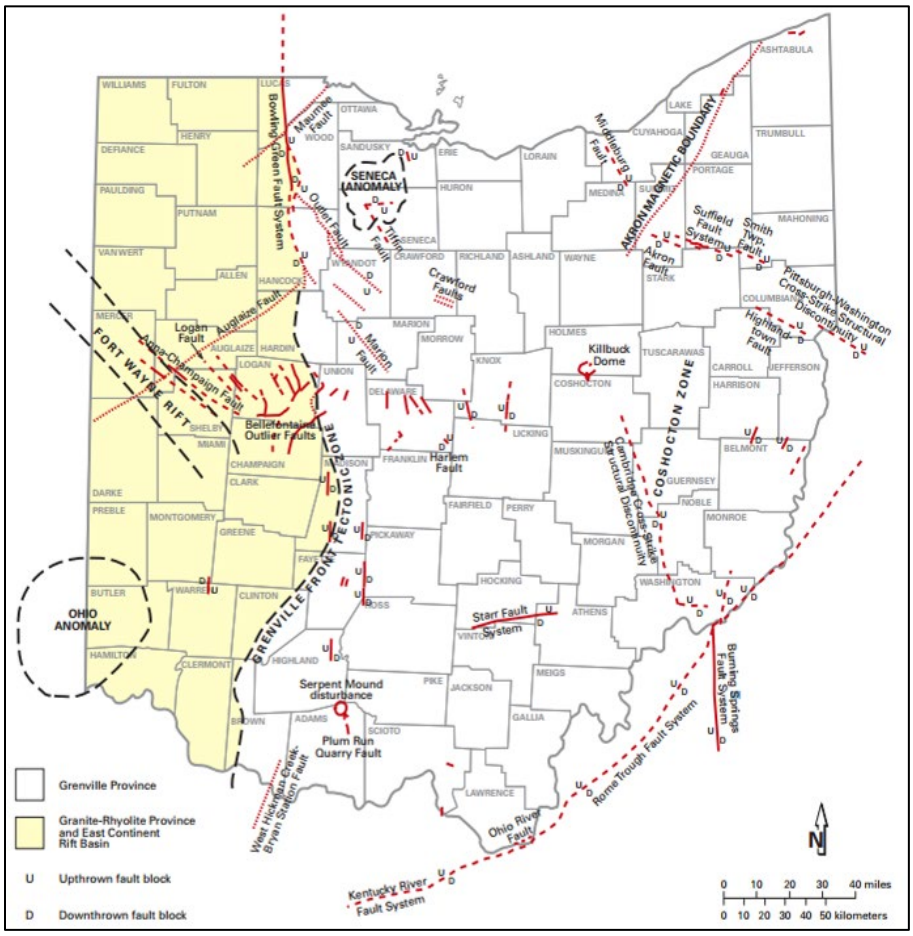
Figure 15: Hamilton County Earthquake Risk



Geographic Location for Earthquake Hazard

Ohio earthquakes are shallow-focus events, occurring in the upper portion of the crust at depths of about 3 to 6 miles, in crystalline rocks of Precambrian age. According to the Ohio Division of Geological Survey, three areas of Ohio appear to be particularly susceptible to earthquake activity: Shelby County and surrounding counties in the west; Lake County and offshore in Lake Erie in the northeast, and; Meigs and Portsmouth Counties in the south. Five earthquake events have occurred with epicenters in Hamilton County—one in 1925, three in 1936, and one in 1937—ranging in magnitude from 2.5 to 3.3.

Figure 16: Ohio Faults[88]



Hazard Extent for Earthquake

The extent of an earthquake is countywide. One of the most critical sources of information that is required for accurate assessment of earthquake risk is soils data. Soils along rivers and other bodies of water have higher water tables and higher sand content. As a result, these areas are more susceptible to liquefaction and land shaking. Liquefaction is a phenomenon in which the strength and stiffness of a soil is reduced by earthquake shaking as a result of water filling the space between individual soil particles. This can cause buildings to tilt or sink into the ground, slope failures, lateral spreading, surface subsidence, ground cracking, and sand blows.

Table 60: Earthquake Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Earthquake	County-wide	0M	3.3M	In 1936, a small 3.3 magnitude earthquake was felt by many in downtown areas of Cincinnati and Middletown.

[88]Ohio Department of Natural Resources. (2023).Retrieved from http://geosurvey.ohiodnr.gov/earthquakes-ohioseis/maps-charts/ohios-deep-structures.

Analysis of Community Development Trends

All future structures will also have the potential to experience an earthquake, however due to the usual frequency and magnitude of earthquakes in Hamilton County, no property damage is anticipated.

Previous Changes in Development

No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. It should be noted that there has been a slight increase of population from 2018 to 2022, but this increase represents about a 1% change. An aging infrastructure continues to be an issue and may be exacerbated in an earthquake. These issues have been well documented and do not necessarily reflect a change from the last iteration of the plan.

Vulnerability to Future Asset/Infrastructure for Earthquake Hazard

All future structures will also have the potential to experience an earthquake. However, given that new structures must meet current building codes and given the expected magnitude of earthquakes in Hamilton County, structural loss should not be severe.

Vulnerability Analysis for Earthquake Hazard

This hazard could impact the entire jurisdiction equally; therefore, the entire county's population and all buildings are vulnerable to an earthquake and can expect the same impacts within the affected area. To accommodate this risk, this plan will consider all buildings within the county as vulnerable.

Impact to Hamilton County Residents

All residential housing units are equally at risk of experiencing an earthquake. However, in a mild earthquake of the magnitude typically experienced in Ohio, no structural damage is anticipated. In other cases, damage is expected to be limited - examples of anticipated damage are heavy falling objects, such as bookcases, cabinets, and heating units. In these instances, people may be injured, displaced, or evacuated during the emergency phase of the disaster.

Impact to Essential Facilities and Other Property

All essential facilities are vulnerable to earthquakes or aftershocks. An essential facility would encounter many of the same impacts as any other building within the county. These impacts include structural failure and loss of facility functionality (e.g., a damaged police station will no longer be able to serve the community). Building Inventory: Impacts similar to those discussed for essential facilities can be expected for the buildings within the county. These impacts include structural failure and loss of building function that could result in indirect impacts (e.g., damaged homes will no longer be habitable, causing residents to seek shelter). As mentioned previously, areas along rivers or other bodies of water are more susceptible to liquefaction and land shaking which can cause buildings to tilt or sink into the ground.

Impact to Critical Infrastructure

During an earthquake, the types of infrastructure that could be impacted include roadways, utility lines/pipes, water/wastewater treatment facilities and assets, railroads, and bridges. Because an extensive inventory of the infrastructure is not available to this plan, it is important to emphasize that any number of these structures could become damaged in the event of an earthquake. The impacts to these structures include broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); and railway failure from broken or impassable railways. Bridges also could fail or become impassable, causing traffic risks. Typical scenarios are described to gauge the anticipated impacts of earthquakes in the county in terms of numbers and types of buildings and infrastructure.

Impact to Environment

Mild earthquakes may cause little environmental damage. The exact nature and extent of this impact still needs to be studied and fully understood as it pertains to climate change. Significant land and vegetation deformation is likely to occur in the event of a major earthquake, however. During such an event, it is likely that gas, water, and fuel pipelines would all be damaged and cause significant pollution into the environment. Damage to other infrastructure is also likely to release fumes into the atmosphere.

Impact to Operations

Most mild earthquakes will have very little impact on first responder operations. In the unlikely event of a severe earthquake, it is possible that a massive amount of stress could be placed on the operations of the County. Police, fire response, and emergency medical personnel would likely all be needed in full force during an extreme earthquake event. As previously stated, such a serious event is unlikely given Hamilton County's history.

Public Confidence in the Jurisdiction's Governance

The public's confidence in the jurisdiction's governance will be largely determined by how effectively the jurisdiction responds to an earthquake incident. Extended interruptions to public services will erode the public's confidence, especially for an event that has a low likelihood of occurrence of significant magnitude.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 61: Jurisdiction-Specific Hazard Impact/Vulnerability for Earthquake

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Forest Park – City	A moderate earthquake represents a major concern. Buildings and structures are not built for seismic incidents and will affect all groups with long-term displacement and health issues. It will also cause infrastructure failure.
Madeira – City	While this is a county-wide risk, seismic activity poses a threat to the cell tower at McDonalds Commons.
Norwood – City	The aging building stock in the city presents a unique concern to the city for seismic activity.

Table 61: Jurisdiction-Specific Hazard Impact/Vulnerability for Earthquake	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
The Village of Indian Hill – City	Mining activity may cause seismic concerns in the area.
St. Bernard – Village	There is a slight risk for earthquakes.
Terrace Park – Village	Mining activity may cause seismic concerns in the area.
Delhi – Township	Most structures in Delhi Township are not designed to withstand a significant earthquake. Residential impact would be significant based on building age and design. The jurisdiction would have a long recovery phase in returning to normal operations.
Whitewater – Township	There are five to seven active mines within Whitewater Township, which have the potential to create localized tremors.

Summary Vulnerability Assessment

To determine potential and likely losses from an earthquake, a 5.0 magnitude probabilistic scenario for Hamilton County was created using Hazus-MH. See *Appendix C – Additional Hazard Analysis Documentation*

Hazus-MH estimates that approximately 2,919 buildings will be at least moderately damaged. This is more than 21% of the total number of buildings in the region. It is estimated that 31 buildings will be damaged beyond repair. The total building-related losses totaled $275 million; 29% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies, which made up more than 52% of the total loss.

Hazus-MH estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodation in temporary public shelters. The model estimates 195 households to be displaced due to the earthquake. Of these, 125 people (out of a total population of 802,374) will seek temporary shelter in public shelters.

Table 62: Earthquake Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Earthquake	1	8	16	34	58	**33**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Extreme Cold Incident

Total Risk Score: 68

What constitutes an extreme cold event, and its effects, varies across different regions across the United States. In areas unaccustomed to winter weather, near freezing temperatures are considered "extreme cold." Extreme cold temperatures are typically characterized by the ambient air temperature dropping to approximately 0 degrees Fahrenheit or below.

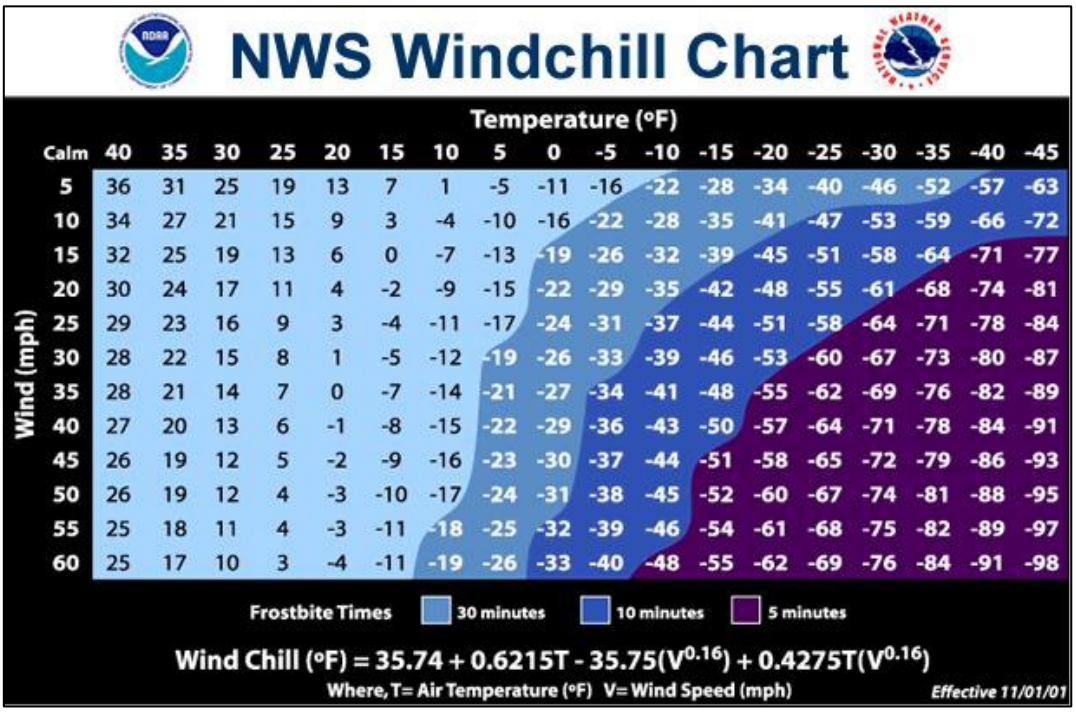
Exposure to cold temperatures—indoors or outdoors—can lead to serious or life-threatening health problems, including hypothermia, cold stress, frostbite or freezing of the exposed extremities, such as fingers, toes, nose, and earlobes. Certain populations—such as seniors age 65 or older, infants and young children under five years of age, individuals who are homeless or stranded, or those who live in a 91 home that is poorly insulated or without heat (such as mobile homes)—are at greater risk to the effects of extreme cold.

Extremely cold temperatures often accompany a winter storm, so individuals may also have to cope with power failures and icy roads. Although staying indoors can help reduce the risk of vehicle accidents and falls on the ice, individuals are susceptible to indoor hazards. Homes may become too cold due to power failures or inadequate heating systems. The use of space heaters and fireplaces to keep warm increases the risk of household fires, as well as carbon monoxide poisoning. The magnitude of extreme cold temperatures is generally measured through the Wind Chill Temperature (WCT) Index. Wind Chill Temperature is the temperature that is felt when outside and is based on the rate of heat loss from exposed skin by the effects of wind and cold. As the wind increases, the body is cooled at a faster rate causing the skin's temperature to drop.

In 2001, the NWS implemented a new WCT Index, designed to more accurately calculate how cold air feels on human skin. The index, shown in the following figure, includes a frostbite indicator, showing points where temperature, wind speed, and exposure time will produce frostbite in humans. Each National Weather Service Forecast Office may issue the following wind chill-related products as conditions warrant:

- **Wind Chill Watch:** Issued when there is a chance that wind chill temperatures will decrease to at least 24° F below zero in the next 24-48 hours
- **Wind Chill Advisory:** Issued when the wind chill could be life threatening if action is not taken. The criteria for this advisory are expected wind chill readings of 15° F to 24° F below zero
- **Wind Chill Warning:** Issued when wind chill readings are life threatening. Wind chill readings of 25° F below zero or lower are expected.

Figure 17: NWS Wind Chill Temperature Index



Previous Occurrences for Extreme Cold Incident Hazard

There have not been many extremely significant events recorded for Hamilton from 1950 - December 31, 2022. (data recording is inconsistent for some time periods and regions). However, significant events have occurred. For example, a Cold/Wind Chill event on February 1, 1996, caused $400,000 in property damage. The table below defines Hamilton (Zone) as portions of Hamilton County that were affected by extreme cold incident hazard.

Table 63: Extreme Cold Hazard Event

Location	Date	Type	Death	Property Damage
Hamilton (Zone)	02/01/1996	Cold/ Wind Chill	0	400.00K
Hamilton (Zone)	01/15/2009	Extreme Cold/ Wind Chill	1	0.00K
Hamilton (Zone)	01/30/2019	Extreme Cold/ Wind Chill	0	0.00K
Hamilton (Zone)	12/22/2022	Extreme Cold/ Wind Chill	0	0.00K
Totals:			**1**	**400.00K**

Probability for Extreme Cold Incident Hazard

Although extremely significant occurrences of this hazard have happened on only a few occasions, lower-impact events occur with regularity. Residents of Hamilton County should be prepared for such an event in any given year. Therefore, this hazard is considered to have a "Medium Probability" for the purposes of this Plan.

Geographic Location for Extreme Cold Incident Hazard

Extreme cold events are regional in nature. All areas of the state are vulnerable to the risk of excessive cold.

Hazard Extent for Extreme Cold Incident

Extreme cold events typically occur in the winter months. The extent of extreme cold varies in terms of the Wind Chill Temperature and duration of the event.

Table 64: Extreme Cold Incident Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Extreme Cold Incident	County-wide	-25°F	N/A	-25°F was recorded in 1977.

Analysis of Community Development Trends

Because this event is likely to be county wide, there is no area of the county that is more vulnerable than others. Future developments in the county need to continue to ensure adequate heating systems and consider backup generators, but no extra precautions are needed in any particular place in the county.

Previous Changes in Development

According to the Greater Cincinnati Coalition for the Homeless, the homeless population in the region has increased by 150 percent in the last 15 years. This subgroup of the population represents one of the most vulnerable groups to extreme cold incidents.

Vulnerability to Future Assets/Infrastructure for Extreme Cold Incident Hazard

It is unlikely that future buildings or infrastructure will be exposed to damage due to extreme heat. However, because structures that are older are more likely to have thinner insulation or older heating systems, newer construction may be more resilient to this hazard.

Vulnerability Analysis for Extreme Cold Incident Hazard

Extreme cold can result in damage to buildings, utilities, and infrastructure, due to the strong winds that often accompany these events. Additionally, extreme cold events often lead to severe short and long-term health conditions, or even death. Extreme cold events can occur within any area in the county; therefore, the entire county population and all buildings are vulnerable to extreme cold hazards.

Impact to Hamilton County Residents

As previously mentioned, extreme cold exposure can lead to serious health problems for Hamilton County residents. These include hypothermia, cold stress, and frostbite or freezing of extremities. Those who are seniors, young children, homeless, or who live in poorly insulated housing are at a greater risk of the effects of extreme cold. As of 2021, approximately 5.3% of Hamilton County residents were 65 or older and 6.4% were 5 or under. As of 2021, approximately 917 people in Hamilton County slept on the street or some other place not meant for human habitation, a 10% decrease from 2020[89]. Extreme cold can also cause residential pipelines to crack, causing flooding. During such events vehicles can often fail to start or run properly as well.

[89] Strategies to End Homelessness. (2021). 2021 Cincinnati Homeless Data. Retrieved from https://www.strategiestoendhomelessness.org/2021-cincinnati-homelessness-data/

Impact to Essential Facilities and Other Property

During an extreme cold event, hospitals and clinics would likely see an increase in hypothermia, frostbite, and other cold-related illnesses. Schools and transportation services may be closed due to safety concerns. Nursing homes, homeless shelters and other vulnerable populations would need to have the resources available to ensure the safety of the residents. The impact on the actual facilities would be limited to freezing pipes. Building Inventory: No existing buildings are exposed to major damage due to extreme cold.

Impact to Critical Infrastructure

Water mains, household pipes, and fire sprinkler lines are at risk of freezing and rupture. Local distribution companies would also be essential in repairing lines and providing enough resources to supply an increased demand for heat.

Impact to Environment

Rapid freezing of lakes or ponds can damage aquatic life populations in the short term. Additionally, crops and livestock have the potential to be heavily impacted by sudden, extreme cold events.

Impact to Operations

Extreme cold can impact first responders in the same way that it impacts other residents. Extreme cold events are usually county wide, so any impacts to the population would likely need to be addressed by local and regional first responders throughout the county. Provided that proper precautions are in place, this hazard is unlikely to significantly hinder normal emergency operations. One exception would likely be the hospitals that encounter a sudden spike in cold event related medical cases. Bus systems may also be forced to close because it is too cold for people to be outdoors.

Public Confidence in the Jurisdiction's Governance

An extreme cold incident would have limited impacts in the public's confidence in the jurisdiction's governance. Larger losses of life among residents due to extreme cold may erode public confidence, particularly if the public does not feel the jurisdiction has provided enough resources to residents who lose heat during an extreme cold incident.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Table 65: Jurisdiction-Specific Hazard Impact/Vulnerability for Extreme Cold Incident

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cheviot – City	The city also has two nursing homes, which may be more vulnerable to the hazards that impact the city. There is a nursing home on North Bend and another on Bridgetown.
Cincinnati – City	Periods of extreme cold occur in the city. Primary impact is to human health in low income and sensitive populations.
Deer Park – City	Assistance will be needed at retirement and nursing homes in the event of power/heat failure. If the City were to lose power, residential retirement communities, and nursing homes will all be in need of assistance.
Forest Park – City	Extreme cold events, in addition to power failure, will cause people to use unapproved heating.
Madeira – City	Although this is a county-wide risk, the city has designated municipal buildings that are designated shelters for extreme cold events.

Table 65: Jurisdiction-Specific Hazard Impact/Vulnerability for Extreme Cold Incident	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
North College Hill – City	The city has a high population that depends on walking and public transportation for food, school, and jobs.
Golf Manor – Village	Low-income residents who cannot pay their utility bills may need to shelter in municipal buildings (Pleasant Ridge Community Center) during extreme cold events.
Lincoln Heights – Village	The population consists of a significant number of elderly people residing in substandard housing with limited access to transportation and other resources. While the village attempts to know who and where these residents reside, the village would be depleted of resources if a major disaster situation occurred.
Silverton – Village	The village will need to give assistance to the retirement community and nursing home in the event of power/heat failure. Residents with special needs will also be of concern.
Terrace Park – Village	A segment of the population is elderly, thus making transportation and living conditions difficult in extreme temperatures. Some of the buildings and homes are extremely old making them vulnerable, as well.
Note: Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.	

Summary Vulnerability Assessment

Excessive cold affects mostly humans, particularly special needs populations, and animals. These events may be exacerbated by power loss. For this planning effort, it was not possible to analyze the number of lives impacted or amount of property exposed/damaged to the impacts of extreme cold due to the lack of local data, and because this hazard has traditionally not been too severe.

Table 66: Extreme Cold Incident Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Extreme Cold Incident	3	4	12	28	44	68

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Extreme Heat Incident

Total Risk Score: 65

Temperatures that hover 10 degrees Fahrenheit or more above the average high temperature for a region, and last for several weeks, constitute an extreme heat event (EHE). An extended period of extreme heat of three or more consecutive days is typically referred to as a heat wave. Most summers see EHEs in one or more parts of the U.S. East of the Rocky Mountains, they tend to combine both high temperatures and high humidity, although some of the worst heat waves have been catastrophically dry.

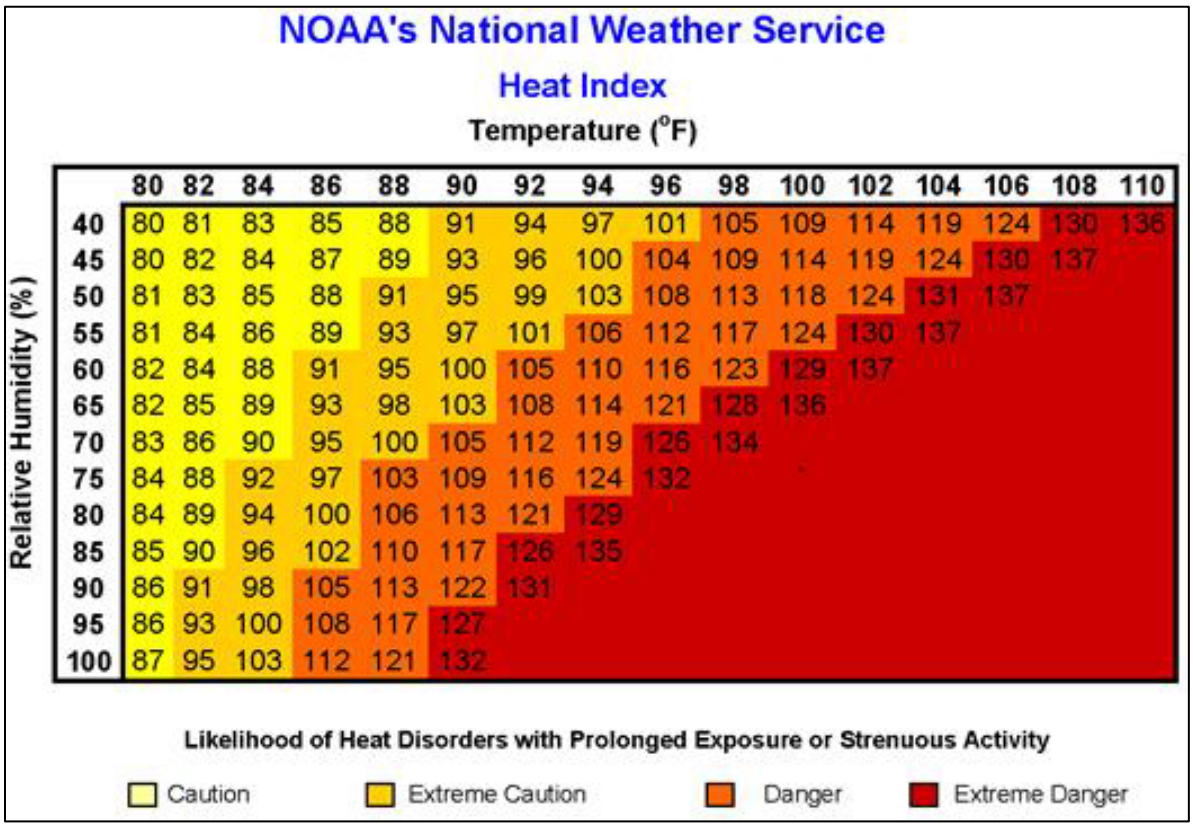
Extreme heat is the number one cause of weather-related fatalities in the US, with hundreds occurring each year. In the U.S. the 10-year fatality average (2012-2021) is 105 deaths, and the 30-year average (1992-2021) is 148 deaths.

Prolonged exposure to extreme heat may lead to serious health problems, including heat stroke or heat exhaustion. Certain populations—such as seniors aged 65 or older, infants and young children under five years of age, pregnant women, the homeless or poor, the overweight, and people with mental illnesses, disabilities, and chronic diseases—are at greater risk to the effects of extreme heat. Depending on severity, duration, and location, EHEs can also trigger secondary hazards, including dust storms, droughts, wildfires, water shortages, and power outages.

Criteria for EHE typically shift by location and time of year and are dependent on the interaction of multiple meteorological variables (i.e., temperature, humidity, cloud cover). While this makes it difficult to define EHEs using absolute, specific measures, there are ways to identify conditions. Some locations evaluate current and forecast weather to identify conditions with specific, weather-based mortality algorithms. Others identify and forecast conditions based on statistical comparison to historical meteorological baselines, e.g., the criterion for EHE conditions could be an actual or forecast temperature that is equal to or exceeds the 95th percentile value from a historical distribution for a defined period.

Heat alert procedures are based primarily on Heat Index Values. The Heat Index—given in degrees Fahrenheit—is often referred to as the apparent temperature and is a measure of how hot it really feels when the relative humidity is factored with the actual air temperature. The National Weather Service Heat Index Chart can be seen below.

Figure 18: National Weather Service Heat Index[90]



Each National Weather Service Forecast Office may issue the following heat-related products as conditions warrant:

- **Excessive Heat Outlooks** – Issued when the potential exists for an EHE in the next 3-7 days. An Outlook provides information to those who need considerable lead time to prepare for the event, such as public utility staff, emergency managers, and public health officials.

- **Excessive Heat Watches** – Issued when conditions are favorable for an EHE in the next 24 to 72 hours. A Watch is used when the risk of a heat wave has increased but its occurrence and timing is still uncertain. A Watch provides enough lead time so that those who need to prepare can do so, such as city officials who have excessive heat mitigation plans.

- **Excessive Heat Warning/Advisories** – Issued when an EHE is expected in the next 36 hours. These products are issued when an excessive heat event is occurring, is imminent, or has a very high probability of occurring. The warning is used for conditions posing a threat to life or property. An advisory is for less serious conditions that cause significant discomfort or inconvenience and, if caution is not taken, could lead to a threat to life and/or property.

[90] http://www.nws.noaa.gov/os/heat/index.shtml#heat_hazards

Previous Occurrences for Extreme Heat Incident

Although the NCEI database does not include any significant reported past occurrences of heat or excessive heat, residents of Hamilton County should be prepared for such an event in any given year. According to a public health study published by Kanghyun Lee and Robert D. Brown, there were a total of 29,270 heat-related EMS incidents during the warm season (2016–2020) in Cincinnati, OH. Daily heat-related EMS incidents ranged from 17 to 65, with an average of 39.9 (incidents/day).[91] The table below defines Hamilton (Zone) as portions of Hamilton County that were affected by Extreme Heat.

Table 67: Extreme Heat Incidents

Location	Date	Type
Hamilton (Zone)	07/20/1999	Heat
Hamilton (Zone)	08/06/2007	Excessive Heat
Hamilton (Zone)	08/22/2007	Excessive Heat
Hamilton (Zone)	06/28/2012	Heat
Hamilton (Zone)	07/01/2012	Heat
Hamilton (Zone)	07/19/2019	Excessive Heat
Hamilton (Zone)	07/20/2019	Excessive Heat
Hamilton (Zone)	07/21/2019	Excessive Heat

Additional occurrences not listed in the NCEI:

- **Late July 1999** – Temperatures averaged 90s most days and there were a few days over 100. There were 10 deaths in the Cincinnati metro area and 3 in the Dayton metro area.

- **Summer of 1988** – Extreme resulted in 16 deaths in Hamilton County.

Probability for Extreme Heat Incident Hazard

This hazard is considered to have a "Medium Probability" "" because although extremely significant occurrences of this hazard have happened on only a few occasions, events with the potential to inflict a lower impact occur with regularity.

Geographic Location for Extreme Heat Incident Hazard

Excessive heat events are regional in nature. All areas of the state are vulnerable to the risk of excessive heat. The urban areas of Hamilton County are susceptible to the Urban Heat Island effect. The term "heat island" describes built up areas that are hotter than nearby rural areas. The annual mean air temperature of a city with 1 million people or more can be 1.8-5.4°F (1-3°C) warmer than its surroundings. In the evening, the difference can be as high as 22°F (12°C).

Hazard Extent for Extreme Heat Incident

[91] Kanghyun Lee and Robert D. Brown. (2022). Effects of Urban Landscape and Sociodemographic Characteristics on Heat-Related Health Using Emergency Medical Service Incidents. Retrieved from Effects of Urban Landscape and Sociodemographic Characteristics on Heat-Related Health Using Emergency Medical Service Incidents - PMC (nih.gov).

Excessive heat events typically occur in the summer months. The extent of EHEs varies in terms of the Heat Index and duration of the event.

Table 68: Extreme Heat Incident Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Extreme Heat Incident	County-wide	N/A	107°F	107°F was recorded in 1934.
	Cincinnati	N/A	N/A	Due to the urban nature of the City of Cincinnati, certain areas within the city are impacted by the urban heat island effect.

Analysis of Community Development Trends

Because this event is likely to be county wide, there is no area of the county that is more vulnerable than others with the exception of the City of Cincinnati. Due to the urban nature of the City of Cincinnati, certain areas within the city are impacted by the urban heat island effect. Future development for the city will need to address how the urban heat island effect can be mitigated. Future developments in the county need to continue to ensure adequate air conditioning systems or perhaps structures providing shade near open, high activity areas (parks, playgrounds, etc.).

Previous Changes in Development

Historically, residents and businesses have been moving from downtown to the first ring suburbs and then to the outer ring suburbs consuming land, reducing density. Recent efforts have been made through incremental strategic investments in the central City (downtown Cincinnati), and, for the first time, a reverse migration of population and businesses from the suburbs to the central City is occurring. An increased population in the urban core could make more residents susceptible to extreme heat due to the urban heat island effect.

Vulnerability to Future Assets/Infrastructure for Extreme Heat Incident Hazard

It is unlikely that future buildings or infrastructure will be exposed to damage due to extreme heat. However, because structures that are older are more likely to have thinner insulation or older cooling systems, newer construction may be more resilient to this hazard.

Vulnerability Analysis for Extreme Heat Incident Hazard

Unlike other natural hazard events, extreme heat events leave little to no physical damage to communities; however, they can lead to severe short and long-term health conditions, or even death. Extreme heat events can also impact environmental and economic vulnerabilities as a result of water shortages and drought.

Impact to Hamilton County Residents

As previously mentioned, extreme heat exposure can lead to serious health problems for Hamilton County residents. These include heatstroke, heat exhaustion, dehydration, or sunburn. Those who are seniors, young children, pregnant women, homeless, impoverished, mentally ill, disabled, or who have a chronic disease are at a greater risk to the effects of extreme heat.

As of 2021, approximately 15.49% of Hamilton County residents were 65 or older and 6.4% were 5 or under. As of 2021, approximately 6,062 people in Hamilton County slept on the street and in shelters[92].

Impact to Essential Facilities and Other Property

During an extreme heat event it is likely that local hospitals would be vulnerable due to increased cases of heat stroke and heat exhaustion and other extreme temperature health-related illness cases. Building Inventory: No existing buildings are exposed to damage due to extreme heat.

Impact to Critical Infrastructure

Extreme heat places high demands on electrical power supplies that can lead to blackouts or brownouts. Local utility companies would be essential for providing enough resources to supply an increased demand for power (increased demand for air conditioning).

Impact to Environment

Extreme heat is often accompanied by drought and can have hazardous effects on livestock, agricultural crops and energy demands and is associated with wildfires. If the severity of the extreme heat is significant enough to cause a drought, state and federal assistance could be available. Agricultural services and departments such as the Farm Bureau Agency and the U.S. Department of Agriculture will be the most likely type of agencies to provide assistance and aid.

Changes in the number of heat waves, or extreme heat events, are a notable impact of climate change. Over the past 60 years, heat waves have increased in duration, frequency, and intensity and research shows that the trend toward longer and more intense heat waves will continue[93]. Historically, underserved, and marginalized communities may experience more severe impacts from extreme heat than other populations, both in terms of infrastructure impacts and health impacts. Research also shows correlations between income level, race, and intra-urban heat islands[94].

Impact to Operations

Extreme heat can impact first responders in the same ways that it impacts other residents. Extreme heat events are usually county wide, so any impacts to the population would likely need to be addressed by first responders throughout the county. Provided that proper precautions are in place, this hazard is unlikely to significantly hinder normal emergency operations. One exception could potentially be hospitals who encounter a sudden spike in heat event related medical cases.

Public Confidence in the Jurisdiction's Governance

An extreme heat incident would have limited impacts in the public's confidence in the jurisdiction's governance. Larger losses of life among residents due to extreme heat may erode

[92] Strategies to End Homelessness. (2021). 2021 Cincinnati Homeless Data. Retrieved from https://www.strategiestoendhomelessness.org/2021-cincinnati-homelessness-data/

[93] EPA. (2023). Climate Change Indicators: Heat Waves. Retrieved from https://www.epa.gov/climate-indicators/climate-change-indicators-heat-waves.

[94] EPA. (2023). Heat Islands and Equity. Retrieved from https://www.epa.gov/heatislands/heat-islands-and-equity.

public confidence, particularly if the public does not feel the jurisdiction has provided enough resources to residents without access to cooling during an extreme heat incident.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Table 69: Jurisdiction-Specific Hazard Impact/Vulnerability for Extreme Heat Incident	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Cheviot – City	The city also has two nursing homes, which may be more vulnerable to the hazards that impact the city. There is a nursing home on North Bend and another on Bridgetown.
Cincinnati – City	Cincinnati is a heat island. Periods of extreme heat do occur. Primary impact is to human health in low income and sensitive populations.
Deer Park – City	Assistance will be needed at retirement and nursing homes in the event of power/AC failure. Specifically, Brookdale Retirement Community and Wexford Retirement Community will need assistance in the event of an extreme heat incident.
Forest Park – City	Extreme heat incidents may necessitate cooling shelters for the elderly or sick individuals. Power failure will exacerbate this issue.
Madeira – City	Although this is a county-wide risk, the city has designated municipal buildings that are designated shelters for extreme heat events.
Golf Manor – Village	Low income residents who do not have A/C, may need to shelter in municipal buildings (Pleasant Ridge Community Center) during extreme heat events.
Lincoln Heights – Village	The population consists of a significant number of elderly people residing in substandard housing with limited access to transportation and other resources. While the village attempts to know who and where these residents reside, the village would be depleted of resources if a major disaster situation occurred.
Silverton – Village	The village will need to give assistance to the retirement and nursing homes in the event of power/AC unit failure. Residents with special needs will also be of concern.
Note: Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.	

Summary Vulnerability Assessment

Excessive heat affects mostly humans, particularly special needs populations, and animals. These events may be exacerbated by power loss. For this planning effort, it was not possible to analyze the number of lives or amount of property exposed to the impacts of extreme heat. Future updates of this Plan should consider additional anecdotal sources to better gauge the direct and indirect impacts of extreme heat. Local subject matter experts indicated this hazard could have a far greater impact than what is currently shown. Future updates should also better capture the "urban heat island" effect in the urban areas of Hamilton County. The estimated potential dollar loss annually in Hamilton County due to structural damage from extreme heat is zero.

Table 70: Extreme Heat Incident Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Extreme Heat Incident	3	4	12	26	42	**65**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Flood (Flash and Riverine)

Flooding is a significant natural hazard throughout the United States. The type, magnitude, and severity of flooding are functions of the amount and distribution of precipitation over a given area, the rate at which precipitation infiltrates the ground, the geometry of the catchment, and flow dynamics and conditions in and along the river channel. There are several types of flooding, and it is the most frequent occurring natural hazard in Ohio. Flash floods and riverine flooding are the most common in Hamilton County. Floods can be classified as one of two types: upstream floods or downstream floods. Both types of floods are common in Ohio.

Total Risk Score: 71

Flash flood

Flash floods, also categorized as upstream floods, generally occur in the upper parts of drainage basins and are generally characterized by periods of intense rainfall over a short duration. These floods arise with very little warning and often result in locally intense damage, and sometimes loss of life, due to the high energy of the flowing water. Flood waters can snap trees, topple buildings, and easily move large boulders or other structures. Six inches of rushing water can upend a person; another 18 inches might carry off a car. Generally, upstream floods cause damage over relatively localized areas, but they can be quite severe in the areas in which they occur. Urban flooding is a type of upstream flood. Urban flooding involves the overflow of storm drain systems and can be the result of inadequate drainage combined with heavy rainfall or rapid snowmelt. Upstream or flash floods can occur at any time of the year in Ohio, but they are most common in the spring and summer months.

Total Risk Score: 39

Riverine flood

Riverine floods, also categorized as downstream floods, , refer to floods on large rivers at locations with large upstream catchments. Downstream floods are typically associated with precipitation events that are of relatively long duration and occur over large areas. Flooding on small tributary streams may be limited, but the contribution of increased runoff may result in a large flood downstream. The lag time between precipitation and time of the flood peak is much longer for downstream floods than for upstream floods, generally providing ample warning for people to move to safe locations and, to some extent, secure some property against damage. Riverine flooding on the large rivers of Ohio generally occurs during either the spring or summer.

Previous Occurrences for Flood Hazard

There were six flash flood events that caused property damage between 2018 and 2021 with no declared flood disasters. The most severe flood that occurred during this period was the incident on July 15, 2019. A total of four inches of rain was reported in less than a two-hour period,

resulting in fifty-thousand dollars' worth of property damage as shown below. The table below includes the events that have incurred property damage over fifteen-thousand dollars.

Table 71: Flood Hazard Events		
Location	Date	Property Damage
Cincinnati	9/5/2018	$30,000
North Bend	9/5/2018	$30,000
Cincinnati	6/16/2019	$15,000
Cummingsville, Cincinnati	6/16/2019	$15,000
Mack, Green & Maimi Township	7/15/2019	$50,000
Cummingsville, Cincinnati	6/30/2021	$20,000
Total:		**$160,000**

In the last 50 years, the NCEI database has reported 240 flood and flash flood events from 1996 to August 2023 with property damages totaling $19,141,600 and $0 in crop damages. The only such event that resulted in casualties was the flash flooding incident that occurred on July 17, 2001, with a total of three deaths. The table below solely depicts the incidents in the past 50 years that have incurred property damage exceeding $15,000. The table below defines Hamilton (Zone) as portions of Hamilton County that were affected by flooding.

Table 72: Flood Hazard Events – 50 Years			
Location	Date	Type	Property Damage
Countywide	1/17/1996	Flood	$50,000
Hamilton (Zone)	1/23/1996	Flood	$2,000,000
Hamilton (Zone)	3/2/1997	Flood	$4,000,000
Countywide	6/8/1997	Flash Flood	$20,000
Countywide	4/16/1998	Flash Flood	$4,000,000
Countywide	1/3/2000	Flash Flood	$20,000
Hamilton (Zone)	2/20/2000	Flood	$100,000
Countywide	7/17/2001	Flash Flood	$3,570,000
Cleves	7/18/2001	Flash Flood	$400,000
Hamilton (Zone)	9/27/2002	Flood	$25,000
Delhi	5/10/2003	Flash Flood	$100,000
Miamitown	6/15/2003	Flash Flood	$50,000
Hamilton (Zone)	1/5/2005	Flood	$20,000
Miamitown	1/5/2005	Flash Flood	$20,000
Glendale	7/6/2013	Flash Flood	$20,000
Golf Manor	5/29/2014	Flash Flood	$20,000
Ambereley	5/29/2014	Flash Flood	$50,000
Evendale	8/28/2016	Flash Flood	$50,000
Elmwood Place	8/28/2016	Flash Flood	$3,500,000
Cincinnati	3/1/2017	Flood	$1,000,000
Delhi	4/16/2017	Flash Flood	$25,000
Cincinnati	11/6/2017	Flash Flood	$100,000
Cincinnati	9/5/2018	Flash Flood	$30,000
North Bend	9/5/2018	Flash Flood	$30,000
Cincinnati	6/16/2019	Flash Flood	$15,000

Table 72: Flood Hazard Events – 50 Years			
Location	Date	Type	Property Damage
Cummingsville, Cincinnati	6/30/2021	Flash Flood	$20,000
Total:			**$19,235,000**

Probability for Flood Hazard

Flood (Riverine): This hazard is considered to have a "Medium" probability because significant occurrences of this hazard have happened on occasion, with numerous lower-impact events occurring regularly.

Flood (Flash): Similar to Riverine Flooding, Flash Flooding is also considered to be a hazard with a “Medium” probability. Significant occurrences of this hazard have occasionally impacted the County and will likely occur again in the future. Isolated and lower-impact events occur with recurrent regularity.

Repetitive Loss Properties

FEMA defines a repetitive loss structure as an NFIP-insured structure that has had at least two paid flood losses of more than $1,000 each in any 10-year period since 1978.

For a list of Hamilton County jurisdictions participating in the NFIP and NFIP Community Designees see section NFIP, Table 24.

Severe Repetitive Loss Building

Defined by FEMA as any building that: (1) Is covered under a Standard Flood Insurance Policy made available under this title. (2) Has incurred flood damage for which: (a) Four or more separate claim payments have been made under a Standard Flood Insurance Policy issued pursuant to this title, with the amount of each such claim exceeding $5,000 and with the cumulative amount of such claims payments exceeding $20,000; or (b) At least two separate claims payments have been made under a Standard Flood Insurance Policy, with the cumulative amount of such claim payments exceeding the fair market value of the insured building on the day before each loss.

Severe Repetitive Loss Property

Either a severe repetitive loss building or the contents within a severe repetitive loss building, or both.

The table below summarizes FEMA repetitive loss and severe repetitive loss properties in all jurisdictions..

Table 73: Hamilton County Repetitive Loss & Severe Repetitive Loss Properties Summary[95]			
Jurisdiction Name / Loss Type / Structure Type	Number of Properties	Number of Losses	Total Payment
HAMILTON COUNTY			
Repetitive Loss			
BUSI-NONRES	1	3	$118,927.85
OTHER RESID	2	5	$56,762.67
OTHR-NONRES	6	13	$646,537.02
SINGLE FAMILY	28	83	$847,139.87
UNKNOWN	1	2	$3,204.96
Severe Repetitive Loss			
BUSI-NONRES	1	4	$84,456.85
OTHER RESID	2	7	$49,776.74
SINGLE FAMILY	6	40	$851,249.17
ADDYSTON, VILLAGE OF			
Repetitive Loss			
Single Family	1	3	$68,214.85
AMBERLEY, VILLAGE OF			
Repetitive Loss			
Single Family	2	8	$95,975.02
UNKNOWN	1	4	$13,387.40
CINCINNATI, CITY OF			
Repetitive Loss			
Busi-Nonres	5	15	$1,346,369.63
Other Resid	5	16	$195,053.92
Othr-Nonres	16	41	$1,377,908.10
Single Family	29	76	$537,874.09
Unknown	1	3	$14,644.32
Severe Repetitive Loss			
Busi-Nonres	6	46	$6,342,897.99
Othr-Nonres	3	13	$358,130.68
Single Family	3	10	$129,520.92
Unknown	1	5	$165,618.32
CLEVES, VILLAGE OF			
Repetitive Loss			
OTHR-NONRES	1	4	$38,486.25
EVENDALE, VILLAGE OF			
Repetitive Loss			
OTHR-NONRES	1	3	$156,587.97
Severe Repetitive Loss			
BUSI-NONRES	1	5	$252,806.12
OTHR-NONRES	1	7	$392,796.99
FAIRFAX, VILLAGE OF			
Repetitive Loss			

[95] Data supplied by the Ohio Emergency Management Agency, (2023).

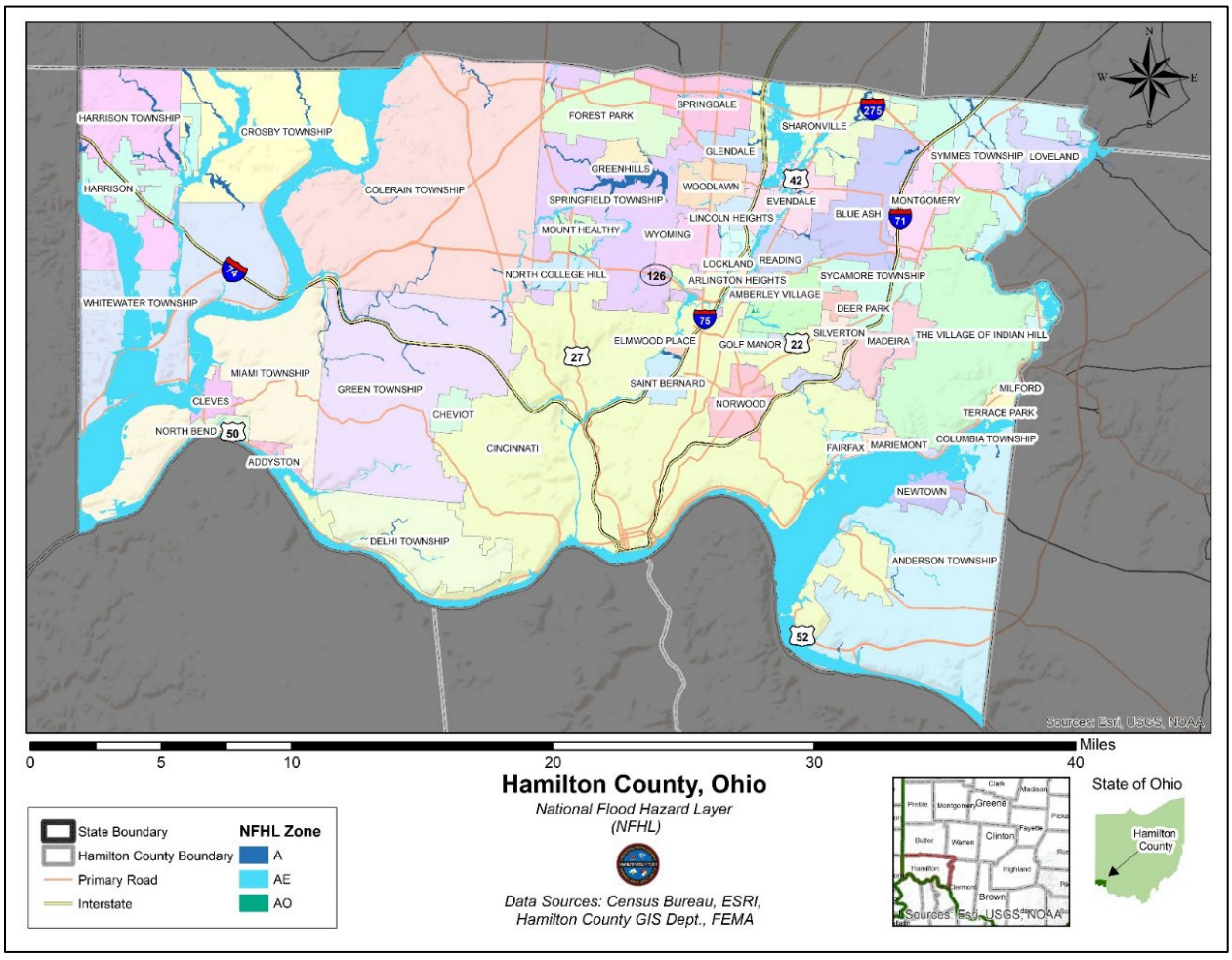
Table 73: Hamilton County Repetitive Loss & Severe Repetitive Loss Properties Summary[95]			
Jurisdiction Name Loss Type Structure Type	Number of Properties	Number of Losses	Total Payment
BUSI-NONRES	1	2	$82,576.95
OTHR-NONRES	1	2	$41,648.52
SINGLE FAMILY	5	13	$98,552.94
Severe Repetitive Loss			
OTHR-NONRES	1	4	$244,210.04
GLENDALE, VILLAGE OF			
Repetitive Loss			
SINGLE FAMILY	1	2	$7,115.50
GREENHILLS, VILLAGE OF			
Repetitive Loss			
SINGLE FAMILY	3	11	$58,312.43
INDIAN HILL, CITY OF			
Repetitive Loss			
SINGLE FAMILY	1	3	$52,328.58
LOVELAND, CITY OF			
Repetitive Loss			
BUSI-NONRES	1	3	$35,083.53
OTHER RESID	1	2	$10,268.25
SINGLE FAMILY	1	3	$12,496.38
MONTGOMERY, CITY OF			
Repetitive Loss			
SINGLE FAMILY	1	2	$10,845.61
NEWTOWN, VILLAGE OF			
Repetitive Loss			
OTHR-NONRES	1	2	$13,677.99
SINGLE FAMILY	1	3	$59,072.17
NORTH COLLEGE HILL, CITY OF			
Repetitive Loss			
OTHER RESID	1	2	$4,406.48
SINGLE FAMILY	2	4	$14,594.45
SHARONVILLE, CITY OF			
Repetitive Loss			
2-4 FAMILY	1	2	$4,099.01
BUSI-NONRES	4	9	$741,772.84
OTHR-NONRES	1	2	$15,009.12
SINGLE FAMILY	3	9	$51,244.62
Severe Repetitive Loss			
BUSI-NONRES	1	4	$1,129,449.42
SPRINGDALE, CITY OF			
Repetitive Loss			
OTHR-NONRES	2	4	$52,298.40
TERRACE PARK, VILLAGE OF			
Repetitive Loss			
OTHR-NONRES	1	2	$5,879.78
SINGLE FAMILY	1	2	$31,573.64
WOODLAWN, VILLAGE OF			
Repetitive Loss			

Table 73: Hamilton County Repetitive Loss & Severe Repetitive Loss Properties Summary[95]			
Jurisdiction Name Loss Type Structure Type	Number of Properties	Number of Losses	Total Payment
OTHR-NONRES	1	3	$65,927.44
WYOMING, CITY OF			
Repetitive Loss			
SINGLE FAMILY	1	2	$23,181.35
Grand Total	**164**	**518**	**$17,060,564.78**

Geographic Location for Flood Hazard

Most river flooding occurs in the spring and is the result of excessive rainfall and/or the combination of rainfall and snowmelt. Severe thunderstorms may cause flooding during the summer or fall but tend to be localized. Flash floods, brief heavy flows in small streams or normally dry creek beds, also occur within the county. Flash flooding is typically characterized by high-velocity water, often carrying large amounts of debris. Urban flooding involves the overflow of storm drain systems and is typically the result of inadequate drainage following heavy rainfall or rapid snowmelt. DFIRM was used in the analysis to identify specific stream reaches for analysis.

Figure 19: Hamilton County 100-year Floodplain



Hazard Extent for Flood

The Hazus-MH flood model is designed to generate a flood depth grid and flood boundary polygon by deriving hydrologic and hydraulic information based on user-provided elevation data or by incorporating selected output from other flood models. Hazus-MH also has the ability to clip a Digital Elevation Model (DEM) with a user-provided flood boundary, thus creating a flood depth grid. For Hamilton County, Hazus-MH was used to extract flood depth by clipping the DEM with the DFIRMs Base Flood Elevation (BFE) boundary.

The BFE is defined as the area that has a 1% chance of flooding in any given year. Flood hazard scenarios were modeled using GIS analysis and Hazus-MH. The flood hazard modeling was based on historical occurrences and current threats. Existing flood maps were used to identify the areas of study. These digital files, although not official FIRMs, provided the boundary which was the basis for this analysis. Core Planning Team input and a review of historical information provided additional information on specific flood events.

Table 74: Flood (Riverine and Flash) Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Flood (Riverine)	Jurisdictions near rivers, streams, and waterways	0-feet	80-feet crest	In 1937, the Ohio River crested at 80-feet, flooding a fifth of Cincinnati and impacted many other communities.
Flood (Flash)	County-wide	0 inches of rain	5.21 inches	In March 1964, 5.21 inches of rain fell in one day.

Analysis of Community Development Trends

Developments in the nearest vicinity to water sources are the most at risk of riverine flooding. All future developments may be vulnerable to urban flooding, however, due to water control infrastructure that could back up or fail during extreme flood events.

Previous Changes in Development

Weather patterns, including the frequency and severity of floods, are constantly changing due to global warming. No other significant or notable development = (construction, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. An aging infrastructure continues to be an issue and may exacerbate urban flooding concerns in the County. These issues have been well documented and do not necessarily reflect a change from the last iteration of the plan.

Vulnerability to Future Assets/Infrastructure for Flood Hazard

Any future assets and/or infrastructure built in the floodplain will be susceptible to flooding.

Vulnerability Analysis for Flood Hazard

As mentioned previously in this plan, Hamilton County is bounded on the south by the Ohio River and Kentucky and on the west by Indiana. Lakes within Hamilton County include Lake Isabella, Miami Whitewater Forest Lake, Sharon Woods Lake, and Winton Lake. The county also crosses

five HUC 8 watersheds. Due to this, Hamilton County is at risk of riverine and flash flooding. The consequences of flooding can vary greatly, however, depending on the location, depth, speed, value of the environment, and extent of flooding.

Impact to Hamilton County Residents

Damage to housing, vehicles, land, crops, or livestock from flood events can be very high during riverine or flash floods. It is possible that flooding can often cause deaths to occur if flood waters become deep/swift enough to sweep away people or vehicles. Floodwater and standing water can be dangerous and can make you vulnerable to waterborne infectious diseases, chemical hazards, and injuries. It is possible that select vulnerable populations: the sick, disabled, or elderly may not be mobile enough to escape rising flood waters and may become trapped in their houses. For many, the psychological impact of major floods can be intense. Loss of loved ones, homes, and livelihoods can obviously create intense psychological and social disruption. Sewage backup during flooding can also impact residents.

Impact to Essential Facilities and Other Property

An essential facility will encounter many of the same impacts as other buildings within the flood boundary. These impacts can include structural failure, extensive water damage to the facility and loss of facility functionality (e.g., a damaged police station will no longer be able to serve the community). A complete list of all the critical facilities, including replacement costs, is included in Part 3, Appendix C. Additional Hazard Analysis Documentation.

The following essential and critical facilities may be impacted: 27 hospitals, 323 schools, 97 fire stations, 60 police stations, and 1 EOC. Building Inventory: Hazus-MH estimates that 286, 201 buildings are located in the 100-year floodplain with a $153, 873 million replacement value.

Table 75: 100-year Flood Expected Damage to Essential Facilities

Classification	# of Facilities			
	Total	At least Moderate	At least substantial	Loss of Use
Emergency Operations Center	1	0	0	0
Fire Stations	97	0	0	0
Hospitals	27	0	0	0
Police Stations	60	0	0	0
Schools	323	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.
(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results

Impact to Critical Infrastructure

Impacts to critical infrastructure, such as roads and bridges, may include structural failure and extensive water damage, resulting in a loss of functionality and costly repairs.

Impact to Environment

Flooded fields can lead to loss of topsoil as well as damage to crops. Intense flooding can create pollution and disease problems, as well as displace entire ecosystems of local flora and fauna.

Due to Climate Change, more frequent and intense rains are leading to more severe flooding. Heavy rain can trigger flash flooding and make rivers overflow. Saturated soil also creates ideal conditions for landslides and mudslides.

Table 76: Future Climate Indicators for Hamilton County[96]

Indicator	**Modeled History** (1976-2005)	**Early Century** (2015-2044)		**Mid Century** (2035-2064)		**Late Century** (2070-2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min-Max	Min-Max	Min-Max	Min-Max	Min-Max	Min-Max	Min-Max
Precipitation:							
Average Annual Total Precipitation	38.4”	37.3”	36.7”	36.1”	37.1”	36”	37.4”
	41.5”	46.5”	45.1”	47.5”	46.5”	49.7”	49.2”
Days Per Year with Precipitation (Wet Days)	180 days	168 days	169 days	166 days	162 days	169 days	147 days
	190 days	194 days	192 days	195 days	193 days	190 days	199 days
Annual days with:							
Annual days with Total Precipitation > 1 inch	4 days	4 days	4 days	3 days	4 days	4 days	4 days
	4 days	6 days	6 days	6 days	7 days	7 days	8 days
Annual days with Total Precipitation > 3 inch	0 days	0 days	0 days	0 days	0 days	0 days	0 days
	0 days	0 days	0 days	0 days	0 days	0 days	0 days
Annual days that exceed 99th percentile Precipitation	5 days	6 days	6 days	6 days	7 days	6 days	8 days
	6 days	8 days	8 days	8 days	9 days	8 days	10 days

Impact to Operations

Flooding events can impact emergency personnel in Hamilton County in all the same ways as other residents. In addition, flooding events can require a substantial number of resources and assistance from multiple agencies and departments; these include local emergency response departments, as well as state, federal and nongovernmental agencies such as the American Red Cross. A depth of 0.9-1.2m (2.9-3.9 ft) is the maximum depth for rapid access of large emergency vehicles. Flood depths exceeding this may result in first responders being unable to quickly access areas in need of assistance. If critical infrastructure or essential facilities are damaged, first responders may be unable to effectively carry out emergency operations.

Public Confidence in the Jurisdiction’s Governance

[96] Climate Mapping For Resilience and Adaptation v1.1.0. (2023). Flooding Hazard Report for Hamilton County. Retrieved from https://cmra-reports.s3.amazonaws.com/county/39061.html.

Public confidence in the jurisdiction's governance is not normally lessened for riverine floods as natural hazards. Flash floods in Hamilton County may be the result of a significant precipitation event that overwhelms the stormwater infrastructure, which may result in some loss in public confidence and the inability to make infrastructure improvements in time to address the events.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 77: Jurisdiction-Specific Hazard Impact/Vulnerability for Flood (Riverine)

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cincinnati – City	Riverine flooding affects low lying Cincinnati neighborhoods along the Ohio River. Flash flooding affects development in and along historic stream channels and in low lying areas without natural outlets. Flooding causes sewer backups and property damage.
Harrison – City	Flooding of Whitewater River may impact the area's central infrastructure/businesses and residents.
Loveland – City	The city is bisected by the Little Miami River (LMR). The LMR and major tributaries have identified floodplains, including the city's downtown area.
Norwood – City	There is potential for major flooding in areas south of Norwood.
Sharonville – City	Mill Creek, Canal Rd, Mosteller at Kemper, and Reading at Kemper are subject to flooding.
The Village of Indian Hill – City	The Livingston Lodge area has experienced flooding. The last flood occurred in 2001.
Arlington Heights – Village	Mill Creek is susceptible to flooding.
Cleves – Village	Flooding of the Ohio River and Miami River has the potential to close off several neighborhoods, which have a high elderly population.
Elmwood Place – Village	Mill Creek to the western border of the village presents a flood risk to the village. Flooding in years past has affected the community. Past incidents have damaged roads and property; and required additional fire responses (i.e. such as last year's flash flooding that also affected the communities of St. Bernard and Norwood).
Mariemont – Village	The "South 80" area is located in the village. Contractors farm next to the Little Miami River.
Newtown – Village	The village experienced flooding (water backup) in 1997. The flooding of the Little Miami River and McCullough's Run are of concern to the village. The Village also experienced flooding in the spring of 2018. Multiple homes and businesses were damaged.
St. Bernard – Village	The Mill Creek flows through the jurisdiction but is electronically controlled.
Terrace Park – Village	Flooding at the Little Miami River is a concern for the village.
Anderson – Township	Due to the Township's location near the Ohio River, Kellogg Avenue floods periodically effecting the interstate and several major roads and businesses.
Colerain – Township	The Great Miami River is subject to flooding.
Columbia – Township	Flooding occurs at the Little Miami River between Mariemont and Terrace Park.
Crosby – Township	Flooding from the Great Miami River is a risk for the township.
Harrison – Township	Flooding of Whitewater River may impact the area's central infrastructure/businesses and residents.
Miami – Township	Homes and roadways along East Miami River Rd are at risk of flooding.
Symmes – Township	The Little Miami River is susceptible to flooding.

Table 77: Jurisdiction-Specific Hazard Impact/Vulnerability for Flood (Riverine)	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Whitewater – Township	Flooding from the Whitewater River is a concern for the township. Lawrenceburg Rd closes annually due to flooding. Green Acres Canoe and Kayak rental is the largest canoe rental in Ohio, and the business is negatively impacted by riverine flooding.

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 78: Jurisdiction-Specific Hazard Impact/Vulnerability for Flood (Flash)	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Cincinnati – City	Flash flooding affects development in and along historic stream channels and in low lying areas without natural outlets. Flooding causes sewer backups and property damage.
Deer Park – City	Blue Ash and Redmont Avenue are prone to urban flooding. Residential basement flooding is also a concern with urban/flash flooding. Urban/flash flooding may impact city storm sewers causing streets to flood.
Harrison – City	The following roadways (Lynees Avenue, Biddle, Iliff, Broadway, Campbell, and West) are subject to flooding during extended or heavy rain.
Loveland – City	Street flooding on Riverside Drive and Karl Brown Way occurs due to high water in the Little Miami River. Flooding of streets in the Heights area has occurred due to urban flooding and insufficient storm sewer system.
Madeira – City	Urban flooding occasionally occurs in the city. In 2001, a 500-year incident occurred. Urban flooding would result in damage to existing structures.
North College Hill – City	The city has experienced intermittent basement flooding in limited areas.
Norwood – City	The city suffered major flash flooding in 2016. The incident overwhelmed fire/police as well as the dispatch center. Norwood is seeking to improve capabilities to better manage flooding concerns.
Reading – City	Flash flooding occurs in the valley area along the Millcreek. Flooding also occurs on the south end of Reading (Reading Rd).
Sharonville – City	Businesses along Mill Creek are susceptible to urban/flash flooding.
The Village of Indian Hill – City	Urban/flash flooding occurs at the intersections of Graves/Sorrel Area, Spooky Hollow at Loveland Madeira Road (July 2001) and Kroger Farm.
Wyoming – City	1) The city has experienced many issues with basement flooding due to sewer backup issues with MSD, including the areas of Wyoming, Stout and Barney, Waverly, and Grove. 2) North Park Avenue is vulnerable to flooding due to Mill Creek.
Addyston – Village	The culvert at Mistletoe Alley and US 50 has flooded twice. The culvert on US 50 near North Bend Corp sees more runoff due to new buildings located above the area. The detention system (North) near 43 Main St. near Meadow's Banquet Hall is also vulnerable to flooding.
Amberley – Village	Secondary road flooding on Fair Oaks and on Willowbrook are issues for the village.
Cleves – Village	A stream that intersects the village could potentially isolate several village neighborhoods.
Elmwood Place – Village	Mill Creek to the western border of the village presents a flood risk to the village. Flooding in years past has affected the community. Past incidents have damaged roads and property; and required additional fire responses (i.e. such as last year's flash flooding that also affected the communities of St. Bernard and Norwood).

Table 78: Jurisdiction-Specific Hazard Impact/Vulnerability for Flood (Flash)	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Evendale – Village	Flooding is possible at Millcreek and Cooper Creek. Exon Avenue and Evendale Drive are areas prone to flooding.
Fairfax – Village	Little Duck Creek floodplain is potentially vulnerable to flooding. Lower Simpson, Bancroft, Lower Germania, S. Whetzel, Fair Lane/Ford Circle, Lower Watterson, and Bedford Nightingale Court are also locations with potential street flooding.
Glendale – Village	The village has experienced street flooding on Greenville Ave, Troy Ave, Sharon Rd, Little Creek, Ward, and the I-75 south entrance from Sharon Rd. Flash flooding on railroad tracks has also occurred. Flooding has also caused erosion on the Coral Avenue bridge.
Golf Manor – Village	Older MSO lines and storm runoff cause flooding in basements throughout village. Chuck Harman Way, Stover Ave., and Rosedale Ave. are areas potentially vulnerable to flooding. A location on Losantiville Ave has flooded in the past (2017) and required rescue.
Greenhills – Village	Storm water flow is overwhelmed in heavy rains. During concentrated periods of heavy rain, streets and storm sewer systems may become overwhelmed and flood both public and private property. Additionally, the Greenhills Golf Course has a detention basin/swale, which controls storm water runoff in periods of heavy rain.
Lincoln Heights – Village	Due to the lack of maintenance and upgrades to the catch basins and storm water drains, the village frequently experiences street flooding, basement flooding, etc.
Lockland – Village	Wyoming and Elm (railroad track) and West Forrer (200 block) are areas vulnerable to flooding.
Mariemont – Village	Several homes flooded on Homewood Road in 2013. There are a couple sections of the village that are susceptible to roadway flooding. These include Settle Rd, Wooster Pike, Rt. 50 (in between Oak St. and Plainville Rd), as well as the municipal building that houses village administration, police and fire departments.
Newtown – Village	Flash flooding from McCullough's Run is a concern to the village.
North Bend – Village	River Road (US 50), between Shady Lane and St. Anne's, is susceptible to flash flooding. The sidewalks on US 50 are deteriorating because of runoff from the hills, which is constant. The corner of St. Anne's and US 50 has a dangerous gully and could result in accidents. ODOT will be contacted to address this issue.
Silverton – Village	Stewart and the ramp on I-71 is susceptible to flooding. Residential basement flooding is also a concern during flooding events. MSD Sewer at Diehl and 6700 Montgomery are specific areas of concern.
St. Bernard – Village	The Village had a "catastrophic" flood in 2016 due to a "storm of the century." The recent severe flash flooding demonstrates how vulnerable St. Bernard is to this hazard.
Terrace Park – Village	Urban flooding occurs at Indian Hill Road (at Old Indian Hill).
Woodlawn – Village	Waverly Ave (6-feet pipe with a grate over it) has experienced flooding. The train underpass is potentially vulnerable to flooding. Glendale-Milford is another area in the village that is vulnerable to flooding. The Woodlawn Flood Study is a priority for the village.
Colerain – Township	Areas prone to urban flooding include Groesbeck, Royal Heights Dr., Blanchetta, Sheldon, Northbrook, Ridgemore, Amarillo, Taylor Creek, Harrison Ave., Blue Creek (between Flick and Lockwood), Westfork of the Millcreek, and Coogan Dr. (Orangeburg).
Columbia – Township	Urban/flash flooding impacts housing at the bottom of hillsides. Overland run-off water occurs in several areas, such as: Madison Place, Ehrling Road, and Old Wooster Pike between Newtown and Terrace Park.
Crosby – Township	Howard Creek and Dry Fork Creek may cause urban/flash flooding.
Delhi – Township	Most flash flooding would be localized in nature. Flooding would impact road and bridge integrity, and some residential and commercial structures.

Table 78: Jurisdiction-Specific Hazard Impact/Vulnerability for Flood (Flash)	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Green – Township	Reemelin Rd. to Haft Rd. by Taylor Creek: Experiences frequent overland flooding during high rain events requiring rescues for residents who attempt to drive over flooded roads. Harrison Ave. near Springdale Dr.: Experiences frequent flooding from Taylor Creek. The culvert near I-74 often cannot handle water. Recent engineering work was completed in the area, but it is unknown if the issue has been resolved. Homes along Muddy Creek Rd. (and the Muddy Creek) regularly experience basement flooding during high rain events. Residents have requested the County purchase their homes.
Harrison – Township	The following areas are prone to flash flooding. They include: 5750-5670 Rapid Run Road, 1000-1100 Devils Back Bone, and 6150 Bender Road. All these areas are prone to flash flood conditions that flood/block access to roadways and adjoining residential and commercial structures.
Miami – Township	Wesselman Road and Jordan Road are at risk of flash flooding.
Springfield – Township	*Population group from 5300-5750 Rapid Run Road are repetitive risk concerns for flooding.
Sycamore – Township	Reemelin Rd. to Haft Rd. by Taylor Creek: Experiences frequent overland flooding during high rain events requiring rescues for residents who attempt to drive over flooded roads.
Symmes – Township	Camp Dennison/Cunningham, Morganstrace, Walnut Ridge, and Kemper from Bentley Pass to Loveland Madeira are all areas prone to flooding.
Whitewater – Township	Harrison Ave. near Springdale Dr.: Experiences frequent flooding from Taylor Creek. The culvert near I-74 often cannot handle water. Recent engineering work was completed in the area, but it is unknown if the issue has been resolved.

Summary Vulnerability Assessment

Hazus-MH was used to show the vulnerability and impacts from a flood incident impacting the county. Various locations and their impacts are shown to demonstrate the potential damage from a flood in various geographic locations throughout the county. Hazus-MH generated the flood depth grid for a 100-year and 500-year return period and made calculations by clipping the digital elevation model (DEM) to the DFIRM boundary. Next, Hazus-MH utilized a user defined analysis of Hamilton County with site-specific parcel data provided by the county. Note: The modeled scenarios did not include critical facilities' building losses because assessor values were not available.

Figure 20: Hamilton County Flood Study Area

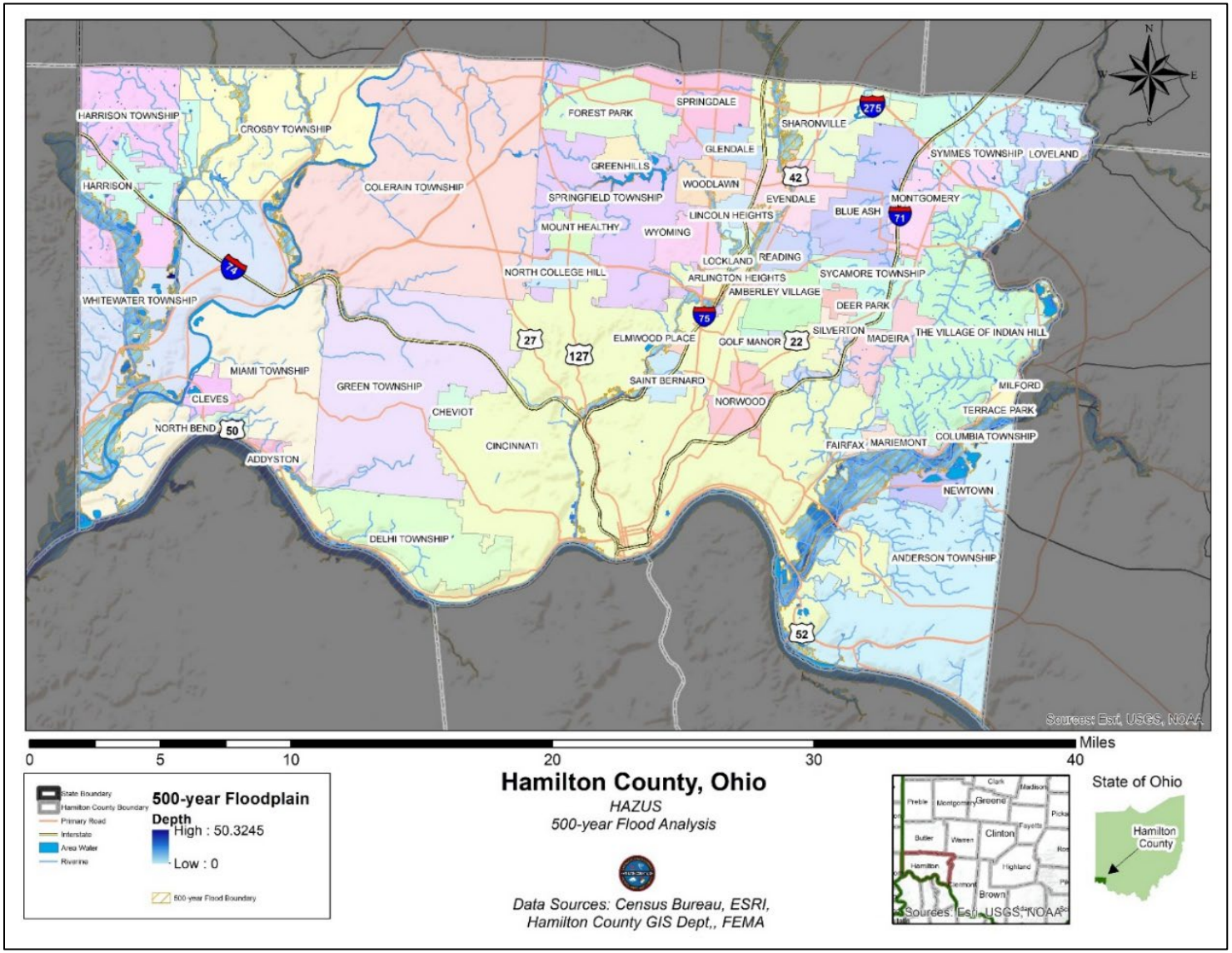


Table 79: Estimated Numbers of Buildings Damaged by Flooding by Occupancy Type			
Occupancy	Damage Zone		
	100 yr.	500 yr.	TOTAL
Agricultural	69	7	76
Mineral Land	-	-	0
Industrial	1417	117	1,534
Commercial	1715	263	1,978
Residential	6298	1087	7,385
Exempt	1214	167	1,381
Special	-	-	0
Utilities	54	5	59
TOTAL	10,768	1,646	**12,414**

Table 80: Estimated Building Losses by Flooding by Occupancy Type			
Occupancy	Damage Zone		
	100 yr.	**500 yr.**	**TOTAL**
Agricultural	$14,359,440	$2,712,160	$17,071,600
Mineral Land	-	-	$0
Industrial	$528,214,934	$49,154,430	$577,369,364
Commercial	$871,369,344	$155,003,850	$1,026,373,194
Residential	$411,735,387	$68,032,990	$479,768,377
Exempt	$455,669,350	$77,920,830	$533,590,180
Special	-	-	$0
Utilities	$300,100	-	$300,100
TOTAL	2,281,648,555	$352,824,260	**$2,634,472,815**

Table 81: Estimated Essential and Critical Facilities Affected by Flooding			
Occupancy	Damage Zone		
	100 yr.	**500 yr.**	**Total**
Airport	1	-	1
Cell Tower	134	11	145
Church	33	8	41
College	37	4	41
Daycare	-	-	0
Fire Station	6	-	6
Hospital	20	4	24
Nursing Home	13	1	14
Outdoor Warning Siren	7	4	11
Police Station	-	-	0
Power Plant	2	-	2
Power Substation	6	-	6
SARA Title III Facility	2	-	2
School	9	3	12
TOTAL	270	35	**305**

Potential Dollar Losses for Flood Hazard

To determine dollar losses for a flood hazard, the available NCEI hazard information was condensed to include only flood incidents that occurred since 1996. In total, Hamilton County has had 240 recorded flood and flash events with a total property damage of $19,141,600 and $0 in crop damages from 1996 – August 2023.

Most years in the data have low losses and a few years have extremely high losses. As a result, the average potential dollar losses for a future event estimate to $79,756.66.

The available FEMA National Risk Index (NRI)was referenced to calculate the expected annual loss of $3,235,627.

Table 82: Flood Expected Annual Loss for Hamilton County

FEMA National Risk Index

Jurisdiction	Population Equivalence	Building Value	Agriculture Value	Total Expected Annual Loss	Expected Annual Loss Score	Rating
Hamilton County	$31,658,048.99	$35,385,773.92	$593,978.38	$3,235,627	89.8	Relatively Moderate

Expected annual loss scores are calculated utilizing an equation that combines values for exposure, annualized frequency, and historic loss ratios (Expected Annual Loss = Exposure x Annualized Frequency x Historic Loss Ratio).

Table 83: Flood (Riverine and Flash) Hazard Evaluation and Impact/Consequence Assessment

Hazard Event	Probability	Consequence				Total Risk
	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Flash Flood	3	7	11	28	46	**71**
Riverine Flood	2	4	6	25	35	**39**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Hazardous Material Incident

Total Risk Score: 72

The State of Ohio has numerous active transportation lines that run through many of its counties. Active railways transport harmful and volatile substances between our borders every day. The transportation of chemicals and substances along interstate routes and railroads is commonplace in Ohio. The rural areas of Ohio have considerable agricultural commerce, creating a demand for fertilizers, herbicides, and pesticides to be transported along rural roads. Finally, Ohio is bordered by the Ohio River to the south and Lake Erie to the north. Barges transport chemicals and substances along these waterways daily. These factors increase the chance of hazardous material releases and spills and radiological incidents throughout the State of Ohio. The release or spill of certain substances can cause an explosion. Explosions result from the ignition of volatile products such as petroleum products, natural and other flammable gases, hazardous materials/chemicals, dust, and bombs. An explosion potentially can cause death, injury, and property damage. In addition, a fire routinely follows an explosion, which may cause further damage and inhibit emergency response. Emergency response may require fire, safety/law enforcement, search and rescue, and hazardous materials units.

Radiological Incident

Radiation is a natural form of energy that is present all around and people are exposed to small amounts of radiation every day, from both naturally occurring and man-made sources. Natural sources include elements in the soil or rays from the sun. Man-made sources include some electronic equipment, medical sources such as x-rays, certain diagnostic tests, and treatments, and nuclear weapons testing.

The amount of radiation which people are exposed to regularly is usually very small. Exposure to radiation occurs when radiation energy penetrates the body. When a person has an x-ray, the individual is exposed to radiation, but they are not radioactive. However, a radiation emergency event could potentially expose people to a small or large dose of radiation.

Radioactive contamination and radiation exposure can occur if radioactive materials are released into the environment as the result of an accident, an event in nature, or an act of terrorism. Such a release could expose people and contaminate their surroundings and personal property. A person exposed to radiation is not necessarily contaminated with radioactive material; a person who has been exposed to radiation has had radioactive waves or particles penetrate the body. For a person to be contaminated, the radioactive material must be on or inside the person's body. A contaminated person is exposed to radiation by the radioactive material that is on their body. An uncontaminated person can be exposed by being too close to radioactive material or a contaminated person, place, or thing. Internal contamination refers to radioactive material that is taken into the body through inhalation, ingestion, or open wounds.

A radiation emergency could be the result of an intentional or unintentional event. A radiological weapon or radiological dispersion device (RDD) is any weapon that is used to spread radioactive material with the intent to kill or cause disruption upon a city or nation.

Intentional

- Contamination of food/water with radioactive material
- Spreading radioactive material into the environment
    - Using conventional explosives (e.g. dynamite) – this is called a dirty bomb
    - Using wind currents or natural traffic patterns
- Bombing or destroying a nuclear reactor
- Causing a truck/train carrying nuclear material to spill its load
- Exploding a nuclear weapon

Unintentional or Unplanned

- Dirty Bombs
- Nuclear Blast
- Nuclear Reactor Accidents
- Transportation Accidents (unintentional spill of radioactive material from a truck or train)

Radiation could also be spread from person to person. People who are externally contaminated with radioactive material can contaminate other people or surfaces that they touch. Contaminants can easily fall from clothing and contaminate other surfaces. Homes can also become contaminated with radioactive materials in body fluids from internally contaminated people. Internally contaminated people can expose others around them to radiation from the radioactive material inside their bodies. Body fluids such as blood, sweat, or urine of an internally contaminated person can contain radioactive materials. Coming in contact with these bodily fluids can result in contamination and/or exposure. Minimizing contact between individuals who have been exposed to or contaminated with radiation will help reduce the spread of the hazard.

Previous Occurrences for Hazardous Materials Incident Hazard

Hamilton County has not experienced a large-scale hazardous material incident at a fixed site or during transport that resulted in multiple deaths or serious injuries, although there have been many releases that have put local firefighters, hazardous materials teams, emergency management, and local law enforcement into action to try to stabilize these incidents and prevent or lessen harm to Hamilton County residents. The most notable incident of the last five years was occurred in March 2014, when both the U.S. and Ohio EPA were required to assist in response to a 21,000-gallon oil pipeline release within the Oak Glen Nature Preserve in Hamilton County.

According to the Hamilton County Local Emergency Planning Commission (LEPC), 531 spills or releases were reported to the agency between January 1, 2013, and March 22, 2023.

Table 84: Hazardous Material Spills or Releases, 2013 – 2023 YTD

Year	Reported Spills or Releases	Year	Reported Spills or Releases
2013	16	**2019**	76
2014	26	**2020**	63
2015	19	**2021**	68
2016	38	**2022**	83
2017	51	**2023 (YTD)**	16
2018	75		

Table 85: Hazardous Material Spills or Releases, 2018 - 2023 - YTD		
Year	Reporting SARA Title III Facilities	Reported Spills or Releases
2018	590	75
2019	639	76
2020	649	63
2021	657	68
2022	650	83
2023 (YTD)	630	16

In addition to data provided by the Hamilton County LEPC, the United States Coast Guard's National Response Center (NRC) also tracks oil and chemical spills and releases. For the same period as noted above, the NRC tracked 259 incidents.

Table 86: Oil and Chemical Spills	
Years	Reported Spills or Releases
2013	45
2014	50
2015	48
2016	59
2017	51
2018 YTD	6

- In December 2015, the U.S. Department of Energy informed the Ohio Department of Health that potentially radiologically contaminated (plutonium) equipment had been shipped from the State of Washington to a facility in Blue Ash. No detectable contamination was found.
- In 2008, a resident in Harrison purchased an auction lot which included a piece of furniture containing watch pieces with radium-dials. The furniture was determined to have low-level radium contamination. U.S. EPA was requested to assist in removing and disposing of the contaminated materials.

There are numerous radiation accidents and other radiological events that have occurred throughout history. They range from civilian nuclear incidents, military nuclear incidents, to crimes involving radioactive substances. Below are just a few examples of some noteworthy events in radiation events.

August 6, 1945 (Hiroshima) - On August 6, 1945, an atomic bomb was dropped on Hiroshima by the United States Army Air Force. Measuring over 10 feet long and almost 30 inches across, it weighed close to 5 tons and had the explosive force of 20,000 tons of TNT. When the bomb exploded, it instantly killed 80,000 to 140,000 people and seriously injured 100,000 more. Within a second, the fireball expanded to 900 feet and the blast wave shattered windows for ten miles and was felt as far away as 37 miles. Over two-thirds of the buildings in Hiroshima were demolished. About half an hour after the explosion, heavy rain began falling in areas to the northwest of the city. This heavy black rain was full of dirt, dust, soot, and highly radioactive particles causing contamination even in areas that were remote from the explosion. Many survivors noticed the effects of exposure to the bomb's radiation. Their symptoms ranged from nausea, bleeding and loss of hair to death. In 1958, the population of Hiroshima reached 410,000, finally exceeding what it was before the bombing and currently it is a major urban center with a population of 1.12 million people.

August 9, 1945 (Nagasaki)- On August 9, 1945, a plutonium bomb exploded at 1,840 feet above Nagasaki and approximately 500 feet south of the Mitsubishi Steel and Armament Works with an estimated force of 22,000 tons of TNT. Although there was no firestorm at Nagasaki, the blast was more destructive to the immediate area, due to the topography and power of the plutonium bomb. However, the hilly topography limited the area of destruction to less than that of Hiroshima. The exact number of casualties was impossible to determine and the number of individuals who could be verified set the official estimate at 23,753 killed, 1,927 missing, and 23,345 wounded. According to the U.S. Strategic Bombing Survey figures, these numbers were much higher, but still less than those for Hiroshima. More than forty percent of the city was destroyed. Major hospitals were destroyed making care for the injured impossible. Schools, churches, and homes also disappeared and transportation was impossible. Two years after the bombing plants growing at ground zero produced 33 percent more seeds but 90 percent of them were sterile. For decades, there was an abnormally high number of cancer, birth defects, and tumors among the victims.

March 28, 1979 (Three Mile Island Accident) - The accident at the Three Mile Island Unit 2 (TMI-2) nuclear power plant near Middletown, Pa., on March 28, 1979, was the most serious in U.S. commercial nuclear power plant operating history. The accident was the result of failure in the secondary, non-nuclear section of the plant. Due to a lack of adequate cooling, the nuclear fuel overheated to the point at which the long metal tubes which hold the nuclear fuel pellets ruptured and the fuel pellets began to melt.

There were no deaths or injuries to plant workers or members of the nearby community. However, the accident brought changes involving emergency response planning, reactor operator training, human factors engineering, radiation protection, and many other areas of nuclear power plant operations. It also caused the U.S. Nuclear Regulatory Commission to tighten and heighten its regulatory oversight. The Three Mile Accident had the effect of enhancing safety in the nuclear power industry.

April 26, 1986 (Chernobyl reactor accident) - On April 26, 1986, an accident occurred at a nuclear power station at Chernobyl, Ukraine, in the former USSR. The accident, caused by a sudden surge of power, destroyed the reactor and released massive amounts of radioactive material into the environment. It was the result of a flawed reactor design that was operated with inadequately trained personnel. The resulting steam explosion and fires released at least 5% of the radioactive reactor core into the atmosphere and downwind.

The Chernobyl reactor accident caused many severe radiation effects almost immediately. Two workers died within hours of the reactor explosion and 134 received high radiation doses and suffered from acute radiation sickness. Of the 134 workers, 28 died within the first four months after the accident. Another 200,000 recovery workers involved in the initial cleanup work of 1986-1987 were also exposed to doses of radiation. About 600,000 workers were involved in cleanup activities at Chernobyl, but only a small fraction of these workers was exposed to dangerous levels of radiation.

The Chernobyl accident also resulted in contamination in areas of Belarus, the Russian Federation, and Ukraine which is inhabited by millions of residents. Radiation exposure to residents evacuated from areas heavily contaminated by radioactive material from the Chernobyl accident also has been a concern. The health of these residents has been monitored since 1986, and to date there is no strong evidence for radiation-induced increases of leukemia or solid cancer (other than thyroid cancer).

An exception is a large number of children and adolescents who received substantial radiation doses in the thyroid after drinking milk contaminated with radioactive iodine in 1986. To date, about 4,000 thyroid cancer cases have been detected among these children. Apart from the increase in thyroid cancer after childhood exposure, no increase in overall cancer or non-cancer diseases have been observed that can be attributed to the Chernobyl accident and exposure to radiation. However, it is estimated that radiation-related cancer deaths may eventually

be attributed to the Chernobyl accident over the lifetime of the emergency workers, evacuees, and residents living in the most contaminated areas.

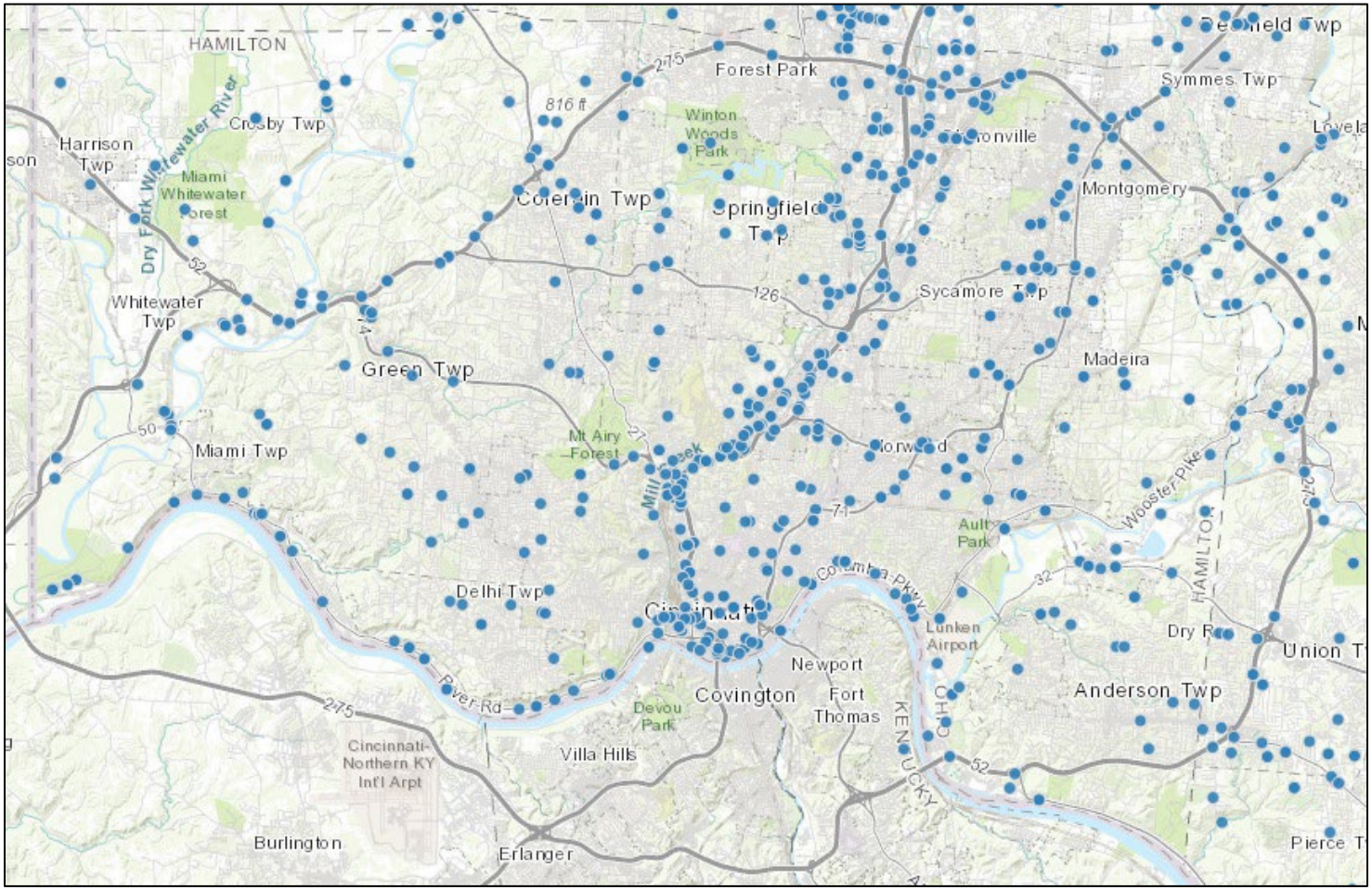
Probability for Hazardous Materials Incident Hazard

This hazard is considered to be of "Medium Probability" because significant occurrences of this hazard have occasionally occurred in the County and will likely occur again in the future. Isolated and low-impact events occur with recurrent regularity.

Geographic Location for Hazardous Materials Incident Hazard

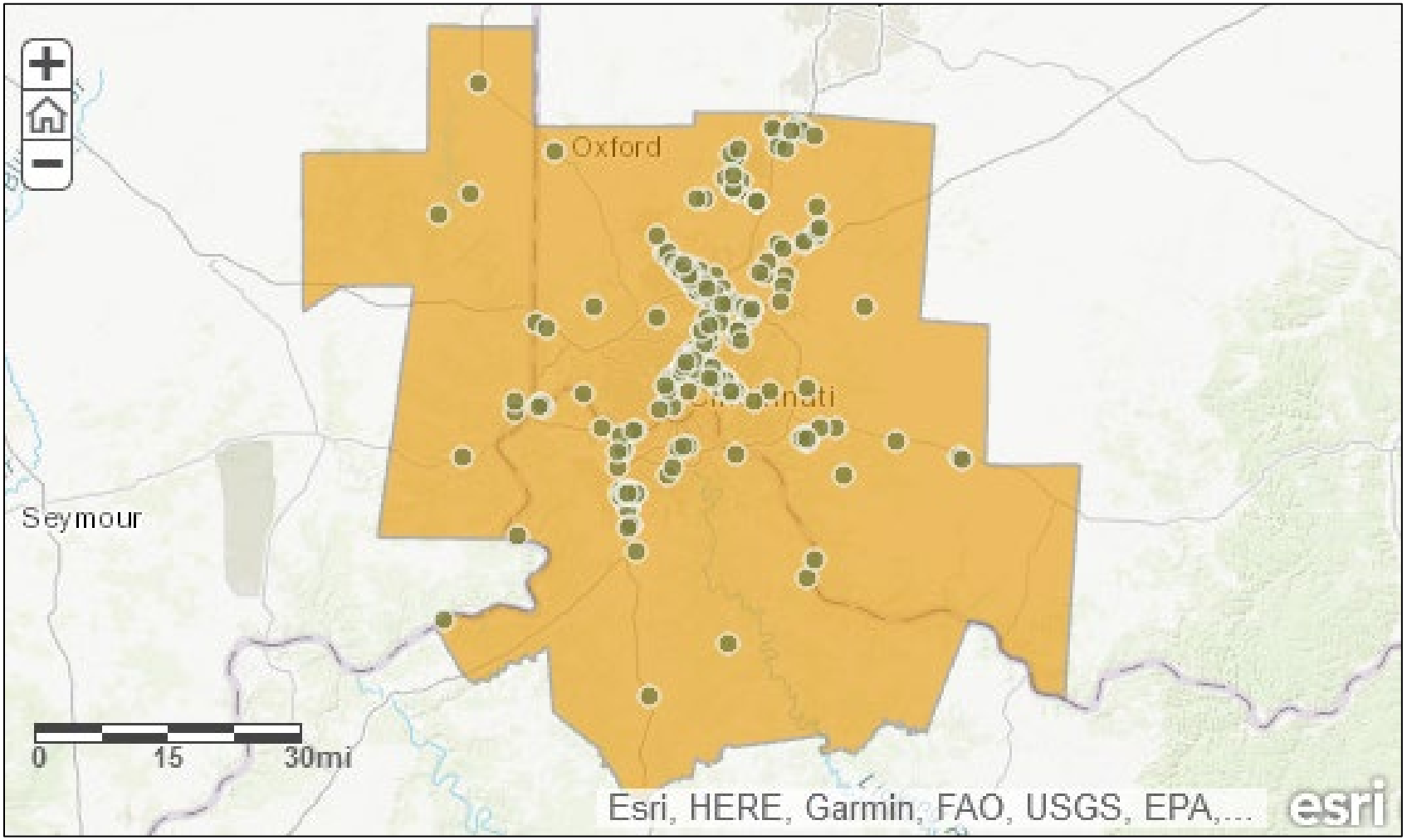
The hazardous material hazards are countywide and primarily are associated with the transport of materials by highway, railroad, and/or river barge. As of March 2023, 630 facilities within Hamilton County were required to report hazardous substances stored on site per the Emergency Planning and Community Right-to-Know Act (EPCRA). There are 7 U.S. routes and 5 Interstates that run through the county. In addition, there are 4 railways and 5 pipeline operators within the county. The food and fiber farms in the county, which store large amounts of fertilizer and pesticides, could result in a spill if a tornado or flood were to occur. Radiological incidents are more likely to occur in the area surrounding a nuclear power plant or another location that uses large amounts of radiological material. However, during a large radiological incident, like Chernobyl, radiation can travel large distances. There are two nuclear power reactors operating in Ohio: Davis-Besse (21 miles east-southeast of Toledo), and Fermi 2 (25 miles northeast of Toledo. The Toxics Release Inventory (TRI) records the toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. In 2021, there were 81 TRI facilities in Hamilton County and 206 in the Cincinnati Metropolitan Area. The TRI facilities in Hamilton County released 2.4 million pounds of toxic chemicals and the Cincinnati Metropolitan area released a combined total of 6 million pounds of toxic chemicals.

Figure 21: Map of Spills and Releases[97] in Hamilton County, May 2017 – June 2023



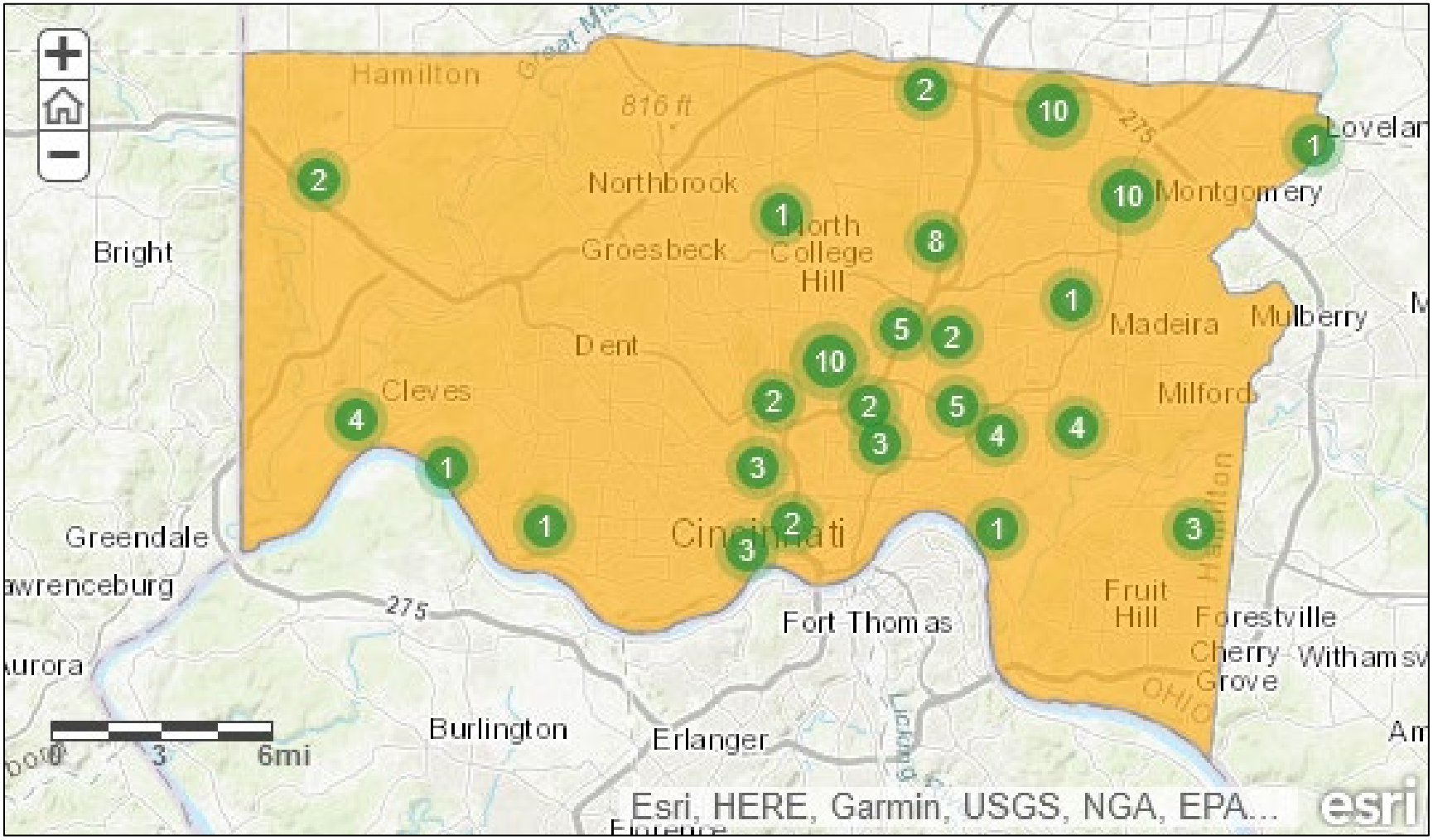
[97] Ohio Environmental Protection Agency, Retrieved June 20, 2023. https://data-oepa.opendata.arcgis.com/datasets/5684b8ecaf014901be58e8fca593050c/explore?location=39.159162%2C-84.499874%2C11.00

Figure 22: Toxic Release Inventory (TRI) Map [98]for the Cincinnati Metropolitan Area, May 2023



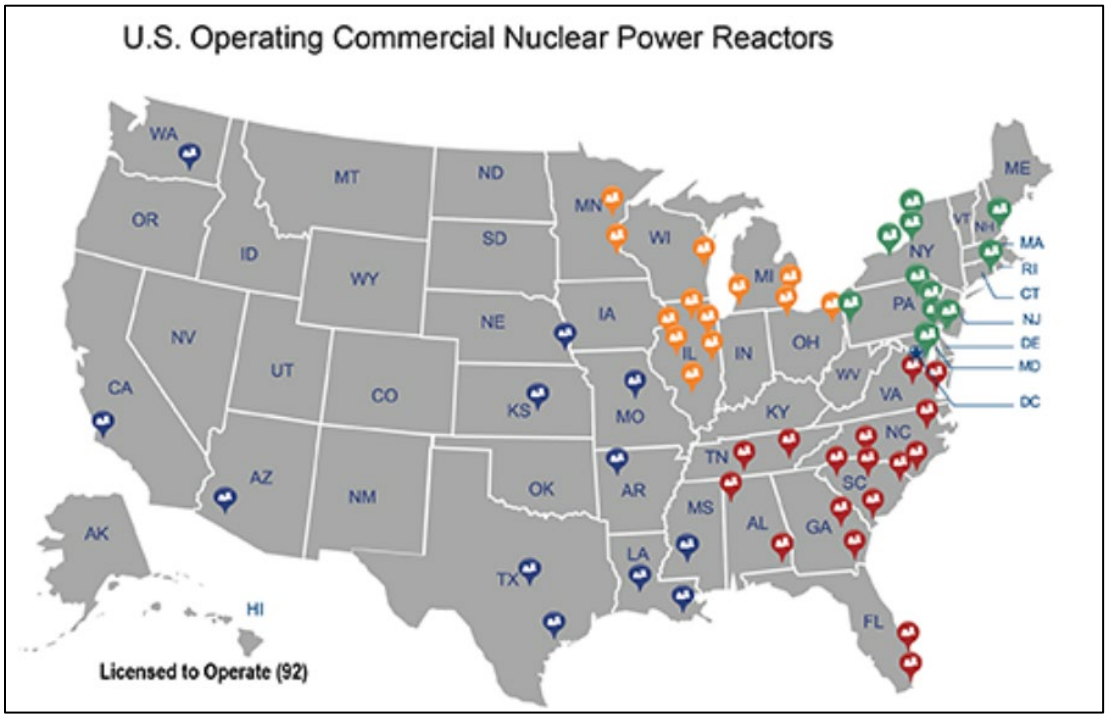
[98] *U.S. Environmental Protection Agency, TRI Factsheet: Metropolitan Areas – Cincinnati, OH-KY-IN. Retrieved June 20, 2023. https://enviro.epa.gov/triexplorer/msa.html?pYear=2021&pLoc=871&pParent=NAT*

Figure 23: Toxic Release Inventory (TRI) Map [99]for Hamilton County, May 2023



[99] *U.S. Environmental Protection Agency, TRI Factsheet: Metropolitan Areas – Cincinnati, OH-KY-IN. Retrieved June 20, 2023. https://enviro.epa.gov/triexplorer/msa.html?pYear=2021&pLoc=871&pParent=NAT*

Figure 24: U.S. Operating Commercial Nuclear Power Reactors in the United States [100]



Hazard Extent for Hazardous Materials Incident

The extent of the hazardous material incident hazard varies in terms of the quantity of material being transported as well as the specific content of the container. The frequency of a radiation emergency is unpredictable. However, some natural hazards such as earthquakes can serve as a catalyst for radiological emergencies. In such cases, a release of radioactive materials can be anticipated, and protective measures can be taken to implement a response plan. The extent of each radiation emergency is dependent on the amount of radioactivity released and the specifics of the emergency. For example, the specific conditions at each site, unique geographical features of the area, and demographic information, all contribute to understanding the true extent of the incident. Since radiation cannot be seen, smelled, felt, or tasted, people at the site of an incident will not know whether radioactive materials were involved. Also, a genetic effect is another concern attributed to radiation exposure. Genetic effects are the result of a mutation produced in the reproductive cells of an exposed individual that can be passed on to their offspring. These effects may appear in the exposed person's direct offspring, or even several generations later. This often makes it difficult to determine the true extent of an incident.

Table 87: Hazardous Materials Incident Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Hazardous Materials Incident	County-wide	Minor spill/release	Rail tanker(s) explosion or explosion at fixed facility	The maximum extent represents a

[100] U.S. Nuclear Regulatory Commission. Retrieved June 20, 2023. https://www.nrc.gov/reactors/operating/map-power-reactors.html

Table 87: Hazardous Materials Incident Hazard Extent				
Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
			releasing heavy plumes of toxic chemicals	hypothetical, but realistic, scenario.
Radiological Incident	County-wide	Disposing of low-level radium contamination	Accident (rail, truck) and subsequent release of radiological materials	The maximum extent represents a hypothetical, but realistic scenario.

Analysis for Community Development Trends

As the County's population increases, the likelihood of more significant HAZMAT incidents is likely to increase.

Table 88: Reporting Facilities and Release Trends				
Year	Reported SARA Title III Facilities	Year-to-Year Change	Reported Releases/Spills	Year-to-Year Change
2009	507	N/A	34	N/A
2010	501	-1.20%	42	+23.50%
2011	497	-0.80%	36	-14.30%
2012	489	-1.60%	15	-58.40%
2013	476	-2.70%	16	+6.60%
2014	499	+4.80%	26	+62.50%
2015	533	+6.80%	19	-26.90%
2016	615	+15.40%	38	+100%
2017	615	0.00%	51	+34.20%
2018	590	-4.07%	75	+47.06%
2019	639	+8.31%	76	+1.33%
2020	649	+1.56%	63	-17.11%
2021	657	+1.23%	68	+7.94%
2022	650	-1.07%	83	+22.06%
2023 (YTD)	630	-3.08%	16	-80.72%
Average	**569.8**	**+1.69%**	**44**	**+7.70%**

From 2009 to 2023, the number of SARA Title III facilities reporting has increased an average of 1.69% annually. The lowest point was 476 facilities reporting in 2013, with the highest number being 657 facilities reporting in 2021. For the same period, the average number of reported spills/releases has increased an average of 7.7.9% annually. The lowest number of releases for this period was 15 in 2012, and the highest was 83 in 2022. These numbers indicate that the number of hazardous materials stored in Hamilton County is increasing, which increases the probability for a release or a spill.

Previous Changes in Development

There has been a notable increase in the reported SARA Title III Facilities in the County. In 2013, there were 476 facilities, in 2017, there were 615, and in 2022 there were 650.The increase can partially be attributed to changes in reporting requirements but can also be indicative of a greater number of new facilities housing hazardous materials. No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have

occurred that would change the vulnerability of the County or participating jurisdictions to this hazard.

Vulnerability to Future Assets/Infrastructure for Hazardous Materials Incident Hazard

All future buildings will be exposed to hazardous materials incidents. While direct structural damage may be limited, secondary impacts are a possibility.

Vulnerability Analysis for Hazardous Materials Incident Hazard

Hazardous material impacts are an equally distributed threat across the entire jurisdiction; therefore, the entire county is vulnerable to a hazardous material release and can expect the same impacts within the affected area. The main concern during a release or spill is the population affected. This plan will therefore consider all buildings located within the county as vulnerable.

Impact to Hamilton County Residents

Hazardous material releases and radiation can cause significant short and long-term sickness or injury to Hamilton County residents, depending on the specific substance. In extreme cases, death may occur due to exposure to hazardous substances. These adverse health effects can range from mild effects, such as skin reddening, to serious effects such as cancer and death, depending on the amount of radiation absorbed by the body, type of radiation, route of exposure, and length of time a person was exposed. Exposure to very large doses of radiation may cause death within a few days or months. Exposure to lower doses of radiation may lead to an increased risk of developing cancer or other adverse health effects later in life, years later. It is also possible that explosions due to hazardous materials releases could damage residential or commercial property.

Impact to Essential Facilities and Other Property

All facilities and communities within the county are at risk. During a radiological incident, the essential facility likely to be impacted is the facility holding the radiation. Depending on the severity of the incident, other nearby facilities may need to be evacuated as well. An essential facility will encounter many of the same impacts as any other building within the jurisdiction. These impacts include structural failure due to fire or explosion and loss of function of the facility (e.g., a damaged police station will no longer be able to serve the community).

Building Inventory: All facilities within the county are at risk. While actual structural damage to the facility is not likely, secondary hazards and access to those buildings may be adversely affected.

Impact to Critical Infrastructure

During a hazardous material release, the types of infrastructure that could be impacted include roadways, utility lines/pipes, water/wastewater assets, railroads, bridges, and ports. The impacts to these structures include broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); and railway failure from broken or impassable railways. Bridges could fail or become impassable, causing risk to traffic.

In terms of numbers and types of buildings and infrastructure, typical scenarios are described to gauge the anticipated impacts of hazardous material release events in the county Following a radiological incident there could be minimal secondary impacts to critical infrastructure.

Impact to Environment

Hazardous materials releases can often have a devastating effect on the local air and land. Although low amounts of radiation are naturally found in nature, excess amounts can be devastating to the environment. Besides human injury caused by these releases, wildlife and their habitat can often be damaged long term. Certain releases can spark fires that damage the landscape. A hazardous substance released onto the land or water can severely contaminate and impact both land and marine-based ecosystems.

Impact to Operations

A hazardous materials and radiological release can often require the deployment of special units to deal with the incident. Depending on the location and severity of the event, entire areas may need to be evacuated or quarantined, potentially shutting down operations along key roads, railroads, or city blocks. Medical personnel may be required to respond to any injuries that may have occurred. In the event of a hazardous materials explosion or massive leak, strain on first responders may become significant.

Public Confidence in the Jurisdiction's Governance

Recent events in the State of Ohio have shown the importance of strong crisis communications during hazardous materials incidents. The failure of the jurisdiction to communicate the impacts and potential consequences for hazardous materials incidents may result in a significant decrease in public confidence in the jurisdiction's ability to govern effectively.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Table 89: Jurisdiction-Specific Hazard Impact/Vulnerability for Hazardous Materials Incident

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Blue Ash – City	Blue Ash is bordered by SR-126, IR-71, and IR-275. A major crash on any of these routes could affect traffic in the region. Also, a wide variety of HAZMAT access these roadways.
Cincinnati – City	The city has industrial areas that are vulnerable to hazmat incidents that could impact nearby populations.
Deer Park – City	Railways and roadways are prime locations for hazardous materials release. Potential threats include fuel tankers, railroad, and gasoline delivery to gas stations.
Forest Park – City	Traffic on I-275, as well as outside storage areas in business parks throughout the city, are vulnerable to HAZMAT-related incidents.
Harrison – City	Interstate 74 from 0.0 mm to 3.5 mm are especially susceptible to HAZMAT incidents.
Loveland – City	Vulnerable areas include Industrial Park located off Union Cemetery. An active railroad track runs through the center of the city and downtown area.
Madeira – City	There are several locations that are vulnerable to hazardous materials release. They include: Madeira Swimming Club, Kenwood Hills Cabana Club, and other locations.
Montgomery – City	Proximity to I-71 and I-275 has potential for transportation accidents involving hazardous materials.

Table 89: Jurisdiction-Specific Hazard Impact/Vulnerability for Hazardous Materials Incident	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Norwood – City	Two large chemical companies occupy space along Highland Avenue and are located in close proximity to each other. These are both bordered on the south by Highway 562.
Reading – City	I-75 and Ronald Reagan Highway are susceptible to HAZMAT incidents. Train derailments (note: railroad tracks split the city and border the west side of the city) may result in hazardous materials releases.
Sharonville – City	Railroad and chemical plants pose a threat to the city.
Springdale – City	I-275 is the hazardous materials route for Hamilton County and passes through Springdale. Trains that pass-through Springdale also transport hazardous materials.
The Village of Indian Hill – City	Hazardous materials incidents are possible from the rail corridor (Midland Subbranch)
Wyoming – City	The CSX railway, which runs along the east side of town, could potentially be susceptible to hazardous materials release.
Addyston – Village	The Plastics Chemical Plant, located in the village, transports chemical products through the jurisdiction via major highway and rail. This poses a threat of a hazardous materials release.
Arlington Heights – Village	There is potential for chemical spills at Pepsi and JCC.
Cleves – Village	Several locations throughout the village pose an increased risk of hazardous materials incident. Some of these locations include Meier Dairy, Cindus Corporation (1930s fire), Cincinnati Industries (mostly flame retardant), and railroad (Norfolk Southern).
Elmwood Place – Village	A railroad track in the village has the potential to close off several neighborhoods if a derailment or chemical spill were to occur.
Evendale – Village	Trains and semi-truck traffic through the village may be a potential risk for HAZMAT-related incidents. The Village of Elmwood Place has two railways running through the village. One is operated by CSX the other by Norfolk Southern. The railway on the eastern side of the community can see upwards of four trains an hour during peak time. Also, there is major industry to the north, south and western borders of the village that utilize a few chemicals in their production.
Fairfax – Village	Nexco, GE, and Formica may be a potential risk for HAZMAT-related incidents. A transportation-related HAZMAT incident would impact the village's population. Most of the population in the village reside to the east of the major transportation routes (I-75and railways). The winds are primarily from the west, which would push any release toward the heavily populated areas of the village.
Glendale – Village	Rail line along Red Bank Road (Norfolk/Southern Rail) may be a potential risk for HAZMAT-related incidents.
Golf Manor – Village	Many hazardous materials are utilized both rail lines and the interstate. This poses a potential vulnerability and adds risk for hazardous releases. GE and large sulfuric storage areas are also potentially vulnerable to HAZMAT incidents.
Lockland – Village	Wright Brothers (compressed gas company), railroads, and pipelines are susceptible to hazardous materials release.
Mariemont – Village	Railroad, I-75 (North or South), and Pilot Chemical Corporation are all potential concerns for hazardous materials release.
North Bend – Village	The Norfolk Southern Railroad passes through the village.
Silverton – Village	Indiana Railroad and other railroad companies travel through North Bend, which creates an increased risk for hazardous materials accidents and spills.
St. Bernard – Village	HAZMAT is a concern for the village. Railways and roadways, including I-71 and Montgomery Road, pose a unique risk to the village.
Terrace Park – Village	The village has a large industrial and chemical base, increasing the risk of fire and HAZMAT hazards.
Woodlawn – Village	US 50 is susceptible to HAZMAT incidents.

Table 89: Jurisdiction-Specific Hazard Impact/Vulnerability for Hazardous Materials Incident	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Colerain – Township	Transportation, especially on I-275 and I-74, is a concern to the township regarding hazardous materials release. There are three to four petroleum and high-pressure gas lines that transverse the Township. Rupture of a petroleum pipeline occurred in March 2014.
Columbia – Township	Rail traffic along the Little Miami River poses a HAZMAT concern/threat.
Crosby – Township	Chemical companies (i.e., Nease Performance Chemicals) are vulnerable to hazardous materials release.
Harrison – Township	Interstate 74 from 0.0 mm to 3.5 mm are especially susceptible to HAZMAT incidents.
Miami – Township	Industries near Brower Road are susceptible to HAZMAT incidents.
Springfield – Township	Major roadways (highway and I-75) are especially susceptible to HAZMAT-related incidents.
Sycamore – Township	Lyondell Chemical on Northlake Drive is vulnerable to hazardous materials release.
Whitewater – Township	The township has several locations/chemicals vulnerable to HAZMAT. These include: Baleco International, Inc. pool chemicals (chlorine), Wardway Fuel (two 30,000-gallon propane tanks above ground), Reis Trucking, and a tar plant. There is a jet fuel pipeline that runs through parts of Whitewater Township.

Summary Vulnerability Assessment

Table 90: Hazardous Materials Incident Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Hazardous Material Incident	3	11	11	25	47	**72**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

High Wind and Tornado

Total Risk Score: 80

Tornadoes pose a great risk to the state of Ohio and its citizens. Tornadoes can occur at any time during the day or night. They can also happen during any month of the year. The unpredictability of tornadoes makes them one of Ohio's most dangerous hazards. They are non-spatial hazards, making it difficult to know the exact risk. Their extreme winds are violently destructive when they touch down in the region's developed and populated areas. Current estimates place the maximum expected velocity at about 318 miles per hour. A wind velocity of 200 miles per hour will result in a wind pressure of 102.4 pounds per square foot of surface area—a load that exceeds the tolerance limits of most buildings.

Considering these factors, it is easy to understand why tornadoes can be so devastating for the communities they hit. Tornadoes are defined as violently rotating columns of air extending from thunderstorms to the ground. Funnel clouds are rotating columns of air not in contact with the ground; however, the violently rotating column of air can reach the ground very quickly and become a tornado. If the funnel cloud picks up and blows debris, it has reached the ground and is a tornado. Tornadoes are classified according to the Enhanced Fujita (EF) tornado intensity scale. Originally introduced in 1971, the scale was modified in 2006 to better define the damage and estimated wind scale. The Enhanced Fujita (EF) intensity scale is included in the table below.

Table 91: EF Scale for Tornado Wind Speeds[101]

EF Scale	Estimated Wind Speed	Path Width	Path Length	Description of Destruction
EF0 Gale	65-85 mph	6-17 yards	0.3-0.9 miles	Light damage, some damage to chimneys, branches broken, sign boards damaged, shallow-rooted trees blown over.
EF1 Moderate	86-110 mph	18-55 yards	1.0-3.1 miles	Moderate damage, roof surfaces peeled off, mobile homes pushed off foundations, attached garages damaged.
EF2 Significant	111-135 mph	56-175 yards	3.2-9.9 miles	Considerable damage, entire roofs torn from frame houses, mobile homes demolished, boxcars pushed over, large trees snapped or uprooted.
EF3 Severe	136-165 mph	176-566 yards	10-31 miles	Severe damage, walls torn from well-constructed houses, trains overturned, most trees in forests uprooted, heavy cars thrown about.
EF4 Devastating	166-200 mph	0.3-0.9 miles	32-99 miles	Devastating damage, well-constructed houses leveled, structures with weak foundations blown off for some distance, large missiles generated.
EF5 Incredible	> 200 mph	1.0-3.1 miles	100-315 miles	Incredible damage. Whole towns are destroyed, foundations swept clean, automobiles become missiles and thrown for 100 yards or more, steel-reinforced concrete structures badly damaged.

[101] http://www.srh.noaa.gov

Previous Occurrences for High Wind and Tornado Hazard

The NCEI database reported two EF0 tornadoes, five high winds, and three strong wind events in Hamilton County since January 1, 2018. The largest of these events was an EF0 tornado that touched down in Bevis that did an estimated $100,000 in property damage. The total impact of the ten events was evaluated at $235,000 in property damage and one injury, no crop damage or deaths associated with these events. The table below defines Hamilton (Zone) as portions of Hamilton County that were affected by high wind and tornado hazard events.

Table 92: High Wind and Tornado Hazard Events – 5 Years

Location	Date	Type	Magnitude	Injury	Property Damage
Hamilton (Zone)	10/28/2018	Strong Wind	43 kts. EG	1	5.00K
Hamilton (Zone)	2/24/2019	Strong Wind	44 kts. MG	0	60.00K
Hamilton (Zone)	11/27/2019	High Wind	50 kts. EG	0	0.00K
Hamilton (Zone)	12/30/2019	High Wind	50 kts. EG	0	0.00K
Hamilton (Zone)	1/11/2020	High Wind	50 kts. EG	0	0.00K
Colerain	4/8/2020	Tornado	EF0	0	100.00K
Silverton	4/8/2020	Tornado	EF0	0	45.00K
Hamilton (Zone)	11/15/2020	Strong Wind	46 kts. MG	0	15.00K
Hamilton (Zone)	3/25/2021	High Wind	50 kts. EG	0	10.00K
Hamilton (Zone)	3/30/2022	High Wind	60 kts. MG	0	0.00K
Totals:				**1**	**235.00K**

There have been multiple occurrences of tornadoes, high wind, and strong wind events within Hamilton County during the past few decades. The figure below identifies where high wind events have occurred between 1950 and 2021 and figure 24 identifies where tornados have occurred.

Figure 25: Hamilton County Historic Wind Events

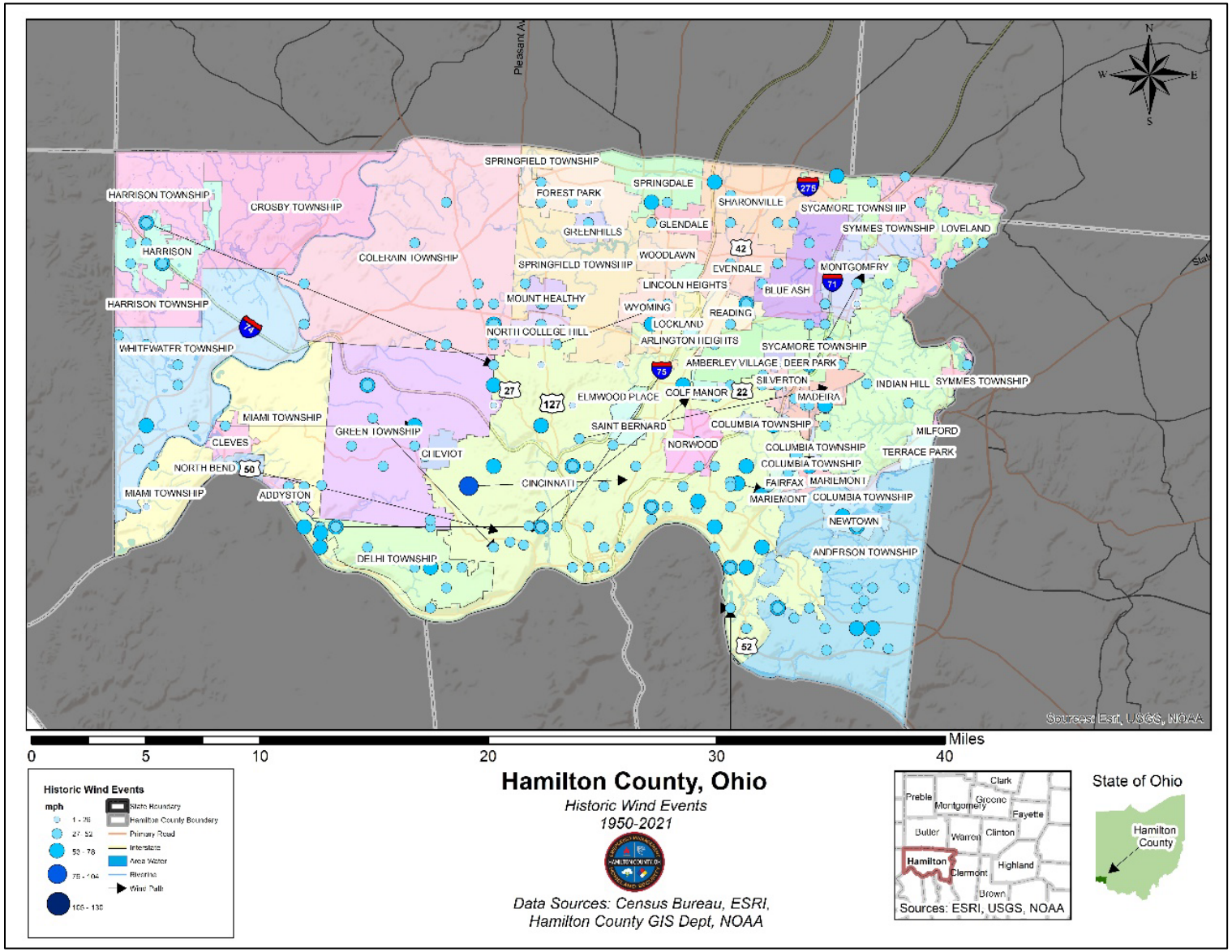
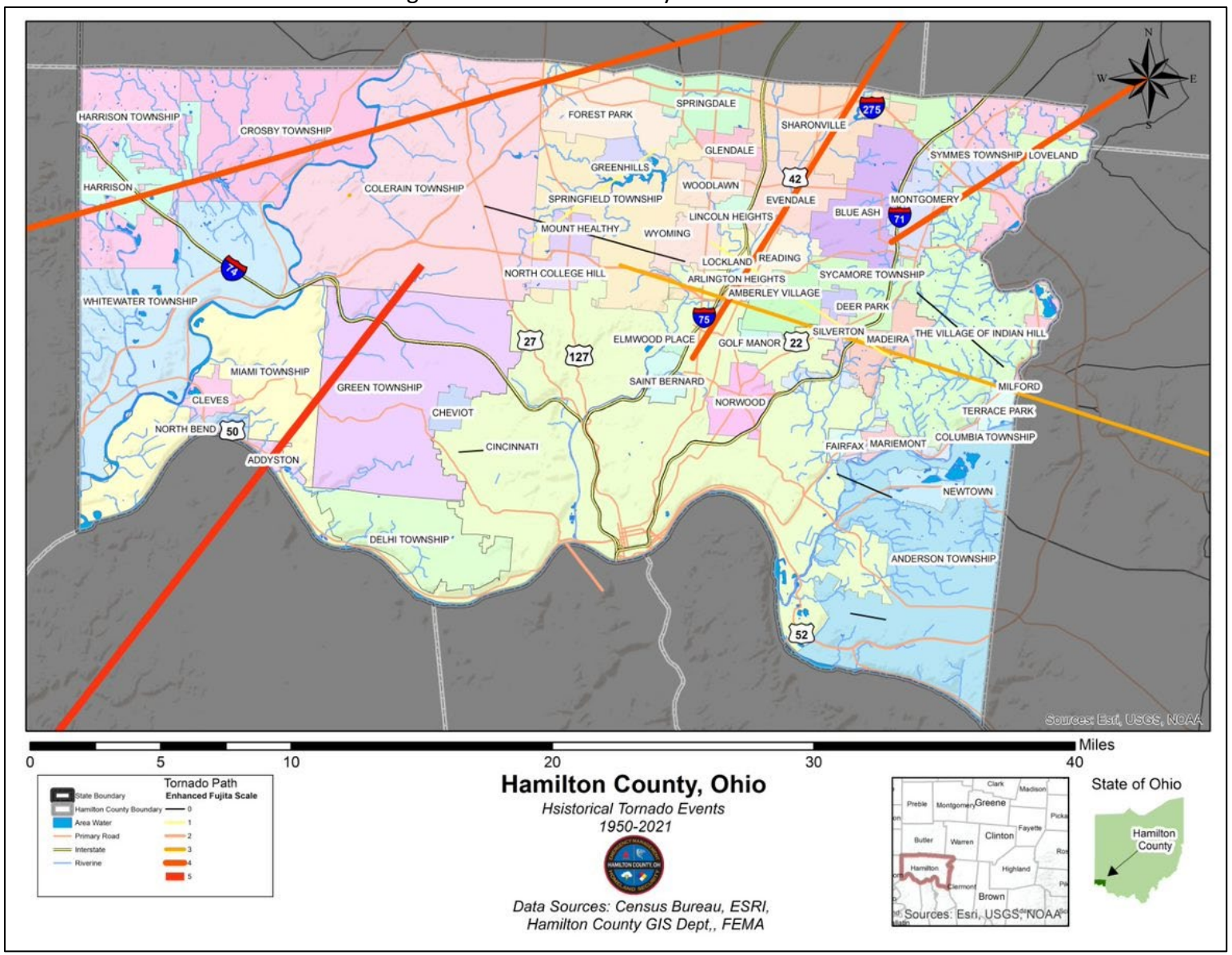


Figure 26: Hamilton County Tornado Events



On September 14, 2008, the remnants of hurricane Ike merged with a frontal boundary across the lower Ohio Valley. Strong winds of 40 – 50 mph were sustained for several hours, with gusts in excess of 70 mph. Widespread power outages and damages occurred across the region that resulted in one (1) death and $581.3 million in property damage. This was the worst tornado Hamilton County has experienced. The NCEI database reported 18 tornadoes, 14 high winds, and 6 strong wind events in Hamilton County since 1950. The table below includes the events that have incurred property damage over fifteen-thousand dollars.

Table 93: High Wind and Tornado Hazard Events – 50 Years

Location	Date	Type	Magnitude	Death	Injury	Property Damage
Hamilton Co.	5/2/1954	Tornado	F1	0	0	250.00K
Hamilton Co.	2/25/1956	Tornado	F2	0	0	250.00K
Hamilton Co.	8/9/1969	Tornado	F3	4	240	2.500M
Hamilton Co.	4/3/1974	Tornado	F4	2	39	250.00K
Hamilton Co.	9/11/1975	Tornado	F1	0	0	250.00K
Hamilton Co.	10/1/1977	Tornado	F3	0	17	2.500M
Hamilton Co.	10/1/1977	Tornado	F1	0	0	250.00K
Hamilton Co.	6/2/1980	Tornado	F1	0	15	25.000M
Hamilton Co.	6/2/1990	Tornado	F4	0	14	25.000M
Addyston	4/9/1999	Tornado	F1	0	0	200.00K
Blue Ash	4/9/1999	Tornado	F4	4	65	82.000M
Hamilton (Zone)	4/28/2002	High Wind	50 kts. E	0	0	15.00K
Red Bank	6/4/2008	Tornado	EF0	0	0	40.00K
Hamilton (Zone)	9/14/2008	High Wind	53 kts. MG	1	0	96.600M
Hamilton (Zone)	4/3/2016	High Wind	55 kts. MG	0	0	20.00K
Covedale	7/13/2016	Tornado	EF0	0	0	15.00K
Mt Washington	3/1/2017	Tornado	EF0	0	0	250.00K
Hamilton (Zone)	2/24/2019	Strong Wind	44 kts. MG	0	0	60.00K
Bevis	4/8/2020	Tornado	EF0	0	0	100.00K
Silverton	4/8/2020	Tornado	EF0	0	0	45.00K
Hamilton (Zone)	11/15/2020	Strong Wind	46 kts. MG	0	0	15.00K
Totals:				**11**	**150**	**235M**

Probability for High Wind and Tornado Hazard

Based on this profile and the process outlined in the Risk Assessment Methodology of this plan, this hazard is considered to have a "Medium Probability" because significant occurrences of this hazard have happened on occasion with lower-impact events also occurring regularly.

Geographic Location for High Wind and Tornado Hazard

The entire county has the same risk for occurrence of tornadoes and high winds. They can occur at any location within the county. The historical tornadoes generally moved from southwest to northeast across the county.

Hazard Extent for High Wind and Tornado Hazard

The extent of the hazard varies in terms of the extent of the path and the wind speed. Extent is addressed at the county level due to the nature of the hazard.

Table 94: High Wind and Tornado Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events) Minimum	Maximum	Comments
Tornado	County-wide	EF0	EF5	Multiple F4 and F5 tornadoes have occurred in the county.
High Wind	County-wide	0 kts	58 kts	

Analysis of Community Development Trends

The International Code Council (ICC) is an organization that develops model codes and standards to design, build and compliance process to construct safe, sustainable, affordable, and resilient structures that can withstand natural hazards that historically damage entire communities. In 2017, the Ohio Building Code adapted the 2015 edition of the "International Building Code" which includes storm shelter requirements in accordance with ICC 500. It also mandated that all critical emergency operations as well as Pre-Kindergarten-12 occupancies with an aggregated occupant load of 50 or more located in the 250-mph wind zone have a storm shelter. As all of Hamilton County is in the 250-mph wind zone, this regulation applies to applicable schools, 911 call stations, emergency operations centers, and fire, rescue, ambulance, and police stations within the county. The 2018 edition of the "International Residential Code" was used as a basis for the 2019 Residential Code of Ohio. In Section 301, all buildings shall be designed to withstand wind speeds up to 115 mph.

Previous Changes in Development

No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. It should be noted that there has been a slight increase of population from 2018 to 2022, but this increase represents about a 1% change. The updated Ohio Building Code requiring storm shelters will further ensure the safety of residents.

Vulnerability to Future Assets/Infrastructure

Since tornados can occur anywhere in the county, any future development will have to be made with this hazard in mind. Mobile home parks, campgrounds, or any other facility without a secure foundation or basement will always be particularly vulnerable. Any future structures have the same potential for exposure to a tornado or high winds as this hazard does not occur in specific locations. Future buildings will be slightly more resistant to the effects of a tornado or high winds as they will meet the most current building code requirements for bracing and roof design.

Vulnerability Analysis for High Wind and Tornado Hazard

Since tornadoes can occur within any area in the county, the entire county population and all buildings are vulnerable to tornadoes. To accommodate this risk, this plan will consider all buildings within the county as vulnerable.

Impact to Hamilton County Residents

A tornado would affect an entire population in the tornado's path most severely, but power outages and street closures have the potential to impact many more. Those most at risk from tornadoes include people living in mobile homes, campgrounds, and other dwellings without secure foundations or basements. People in automobiles are also very vulnerable to tornadoes. The elderly, very young, and the physically and mentally handicapped are most vulnerable because of the lack of mobility to escape the path of destruction. Currently, approximately 6.4% and 2.0% of Hamilton County residents are under 5 or over 85 years of age, respectively. People who may not understand watches and warnings due to language barriers are also at risk. Approximately 7.4% of Hamilton County residents 5 and over speak a language at home other than English, although basic familiarity with English is likely. As of 2021, approximately 5,603 people resided in an emergency shelter[102].

Impact to Essential Facilities and Other Property

All essential facilities are vulnerable to tornadoes. An essential facility will encounter many of the same impacts as any other building within the jurisdiction. These impacts will vary based on the magnitude of the tornado, but can include structural failure, damaging debris (trees or limbs), roofs blown off, windows broken by debris, hail, high winds, and loss of facility functionality (e.g., a damaged police station will no longer be able to serve the community).

Building Inventory: The same impacts to buildings within the county can be expected. The impacts are similar to those discussed for critical facilities and include structural failure, damaging debris (trees or limbs), roofs blown off, windows broken by debris, hail, or high winds, and loss of building function (e.g., damaged home will no longer be habitable, causing residents to seek shelter).

Impact to Critical Infrastructure

During a tornado, the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads, and bridges. Because the county's entire infrastructure is equally vulnerable, it is important to emphasize that any number of these structures could become damaged during a tornado. The impacts to these structures include broken, failed, or impassable roadways, broken or failed utility lines (e.g., loss of power or gas to community), and railway failure from broken or impassable railways. Bridges could fail or become impassable, causing risk to traffic.

Impact to Environment

Tornadoes and high wind events can destroy trees, buildings, and other important infrastructure. Tornados have been known to kill animals, damage farmland, and disrupt the food chain. Tornados can also cause water contamination, impacting local flora and fauna, not to mention humans. If a high wind or tornado hits power lines or causes gas leaks, fires or contamination can also result.

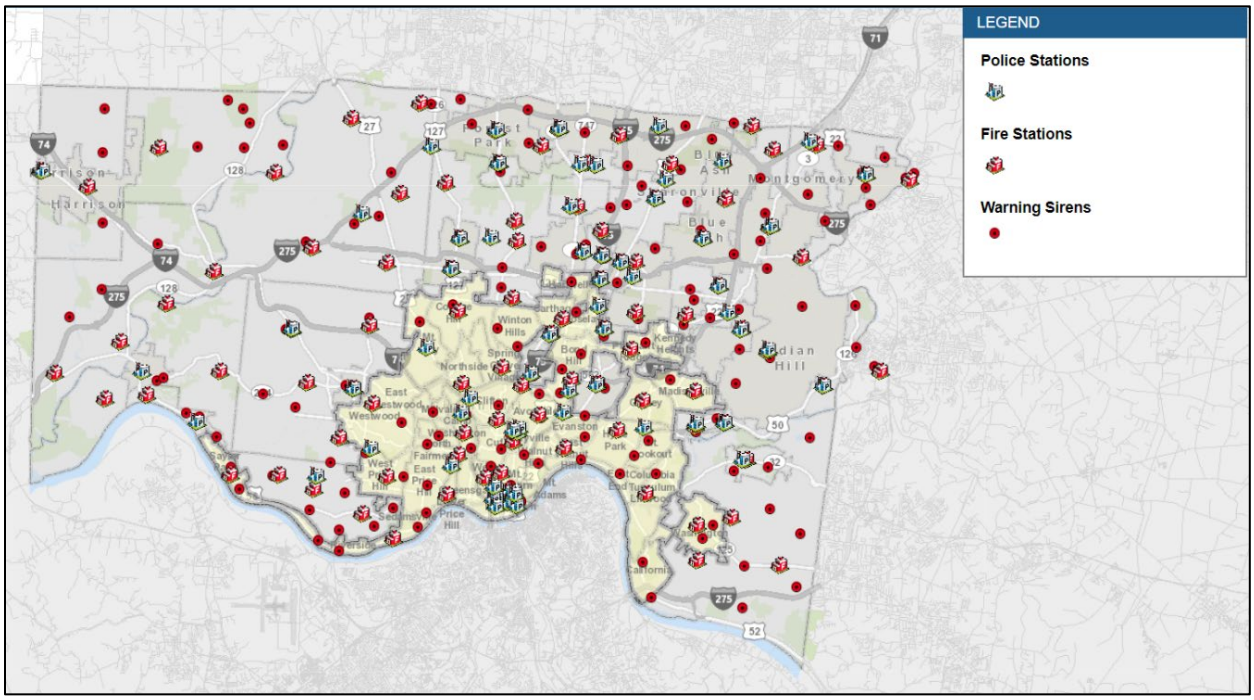
[102] Strategies to End Homelessness. (2021). 2021 Cincinnati Homeless Data. Retrieved from https://www.strategiestoendhomelessness.org/2021-cincinnati-homelessness-data/

As global temperatures rise, the hotter atmosphere is able to hold more moisture. This increases atmospheric instability, a vital supercell ingredient that produces tornadoes. On the other hand, as the planet warms, wind shear (another vital ingredient) is likely to decrease. These two forces work against each other, and it is difficult to anticipate which might have a greater impact on tornado formation. The fourth National Climate Assessment[103] summarizes the complicated relationship between tornadoes and climate change: "Some types of extreme weather (e.g., Rainfall and extreme heat) can be directly attributed to global warming. Other types of extreme weather, such as Tornadoes, are also exhibiting changes which may be linked to climate change, but scientific understanding isn't detailed enough to project direction and magnitude of future change." In other words, there is still a lot to learn about how climate change might affect tornadoes.

Impact to Operations

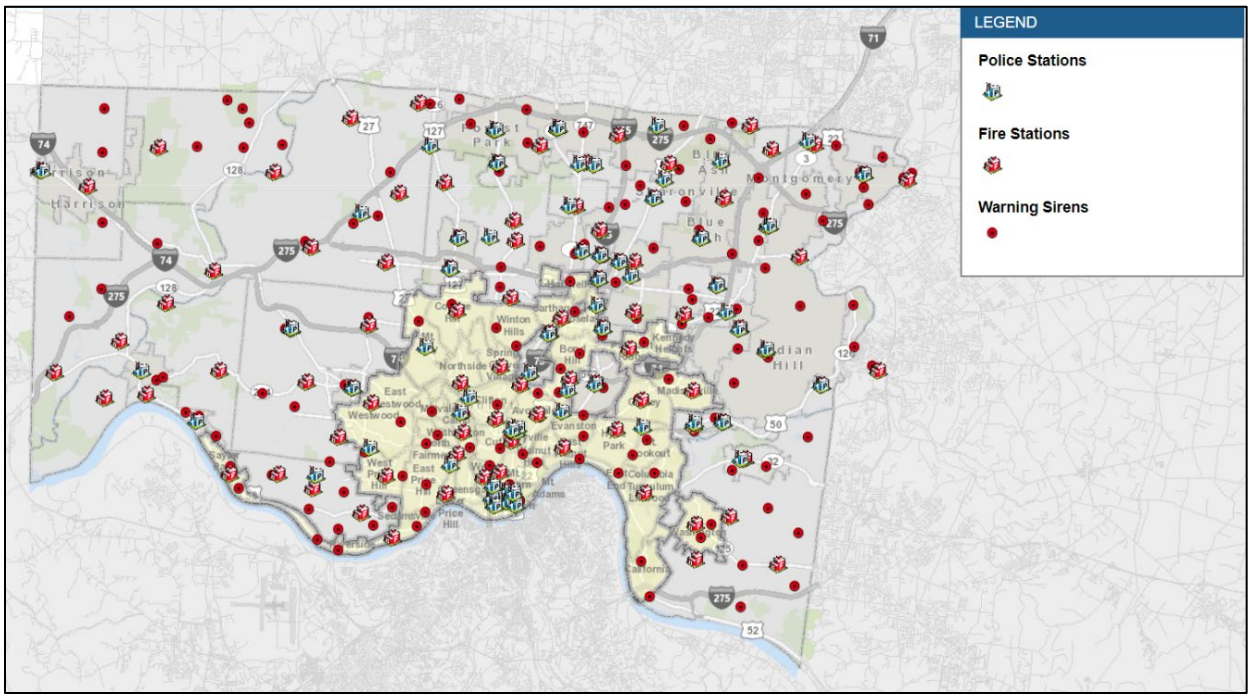
Vulnerabilities associated with tornadoes include the warning siren systems and police/fire/emergency medical facilities, including any staff active during the initial impact of a tornado. All personnel in vehicles are particularly vulnerable during a tornado. Should a tornado make roads impassable or disable communication lines, breakdowns or delays in all potential operations are possible. Private or public urban tree removal services are also vulnerable to tornadoes.

Figure 27: Police Stations, Fire Stations, and Outdoor Warning Sirens in Hamilton County



[103] National Geographic Society. (2022). Tornadoes and Climate Change. Retrieved from https://education.nationalgeographic.org/resource/tornadoes-and-climate-change/.

Figure 28: Police Stations, Fire Stations, and Outdoor Warning Sirens in Hamilton County



Public Confidence in the Jurisdiction's Governance

A high wind or tornado incident is unlikely to significantly decrease the public's confidence in the jurisdiction's governance unless there is a failure to provide timely information about the hazards. A failure to activate the outdoor warning sirens in Hamilton County for a tornado may result in a slight lessening of the public's confidence in some aspects of the jurisdiction's governance.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 95: Jurisdiction-Specific Hazard Impact/Vulnerability for High Wind and Tornado

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cincinnati – City	Utilities and property are vulnerable to severe storm related impacts that can be wide spread due to the urban density of the city.
Forest Park – City	Notification of the community during a tornado or high wind incident will be critical. Homes built on concrete slabs will especially need saferooms/wind shelters. Apartments in the City may also need these safety accommodations. Promoting safe rooms is a much need mitigation activity for the area.
Madeira – City	Madeira Mobile Home Park is a location vulnerable to damages from tornados and high winds.
Wyoming – City	Big and old trees are vulnerable to damage during tornado or high wind incidents. These events could also cause downed powerlines causing utility damage and damage to private property.
Elmwood Place – Village	High wind incidents are of particular concern to the village.
Glendale – Village	Many old, large trees throughout village pose a threat during tornado/high wind incidents.

Table 95: Jurisdiction-Specific Hazard Impact/Vulnerability for High Wind and Tornado	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Golf Manor – Village	There is potential for tornadoes and high winds throughout village. A safe room for first responders is needed.
Greenhills – Village	Power failures/communication loss between village and community (no backup power) are causes of concern involving tornado and high winds.
North Bend – Village	The many dead trees in the village have the potential to do severe property damage, injuries/fatalities, and cause road blockage.
Silverton – Village	The village has substantial urban forest, which increases the risk for tree limb damage to power and phone lines.
Terrace Park - Village	The main impact from a tornado or high wind incident would be from falling trees and power lines. Terrace Park has many old growth trees, some as old as 100 years, and have grown extremely tall.
Colerain – Township	Northern parts of the Township were damaged by a tornado in June 1990 and a high windstorm in September 2008.
Delhi – Township	The jurisdiction would experience a significant loss if a tornado or high wind incident were to occur. Specifically, geriatric housing and extended care facilities would be on backup power or need assistance transferring patients.
Symmes – Township	Overhead transmission lines are vulnerable to tornadoes and high winds. Utility failure during tornado/high wind incident poses a threat to the community.

Summary Vulnerability Assessment

Table 96: High Wind and Tornado Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind/Tornado	3	11	16	26	53	**80**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Infrastructure and Structural Failure

Total Risk Score: 61

Infrastructure Failure

Infrastructure failure refers to the damage or destruction of road infrastructure, water/wastewater systems, and other engineering failures. This hazard can occur somewhat frequently, but the failures are usually small. For example, a road can be damaged due to other hazards (flood, fire, earthquake, etc.) or by normal wear and tear. Failures like these may impact traffic while the damage is repaired, but often do not cause significant issues. However, when infrastructure fails in high profile or high use locations, it can cause serious traffic disruption, injury, and death.

Structural Failure

Structural failures can be sudden and very dangerous. These failures often coincide with construction or repair work. Constructions workers are typically at greatest risk for structural failures that occur during construction or repair. Structural failures can also be a secondary hazard due to fire, earthquakes, sinkholes, landslides, terrorism, and other hazards. During failures due to other hazards, residents and business workers would likely be at greatest risk. Structural failures damage the structure itself that failed and can also damage nearby buildings and infrastructure.

Utility Failure

Utility failure can refer to the loss of power, communications, or other basic utility. The most common concern is power outage. Power outages are typically caused when damage occurs to the electrical infrastructure. Those damages can be caused by high winds, traffic accidents, flooding, and more. Power outages can be an inconvenience for many, but life threatening to those who rely on power for medically necessary services. Downed power lines also pose an additional threat; they can cause fires, injury, and death. If the power outage is caused by an event at the power generating plant, the outage can be far more widespread than if the infrastructure is damaged.

Previous Occurrences for Infrastructure and Structural Failure Hazard

- On February 21, 2023, there was a partial road collapse on West Foster-Maineville Road between Faller Road and Kings Court which triggered a gas leak. The gas leak did not require an evacuation, but the road will be closed for an extended period.
- On September 6, 2022, an abandoned building's roof caved knocking down walls and breaking windows. There were no reported injuries or deaths but there was a temporary road closure. [104]
- On June 16, 2022, a severe summer storm resulted in 717 outages in Hamilton County. The outages affected 56,799 customers in Hamilton County
- On November 5, 2019, a half-built structure collapsed with construction workers inside. Four people were injured and one deceased.
- On October 8, 2017, over 4,000 people in the Greater Cincinnati area lost power due to storms that occurred early that morning.

[104] WCPO Cincinnati. (2022). Building collapse raises questions about ownership, accountability in Addyston. Retrieved from: Building collapse raises questions about ownership, accountability in Addyston (wcpo.com)

- On September 7, 2017, a stone retaining wall on Colerain Ave in Mt. Airy collapsed onto the sidewalk.
- In May 2017, storms hit the Greater Cincinnati area, causing 12,000 power outages.
- On September 5, 2017, there was water main break on Paddock Road. The road was down for a couple days, and one local business remained without water. The extent of damage to the surrounding infrastructure was not determined.
- On March 13, 2016, a balcony collapsed due to a support column giving out. A mother and daughter narrowly escaped the collapse, and the owner of the facility hired an engineer to evaluate the damage and design the rebuilding.
- On January 19, 2015, a man was killed in the Interstate 75 overpass collapse. He died when the Hopple street overpass bridge suffered a "catastrophic pancake" collapse. A semi-truck crashed into the debris and the driver was injured. The old Hopple Street ramp was being prepared for demolition when it collapsed.
- In August 2014, a building in the West End dating back to 1875 collapsed. Two workers were in the building minutes before it collapsed but heard a noise and exited the building shortly before it fell.
- On May 18, 2013, a water main flooded downtown Sharonville and caused considerable damage to the streets and sidewalk. An aging pipe was blamed for the break and more than 20 buildings were without water temporarily.
- In January 2012, the floor collapsed at the construction site of a new casino. One worker was severely injured and at least 13 others sustained injuries as well.
- On March 3, 2011, a broken water main in Spring Grove Village caused several nearby businesses to be closed. Several roads were also shut down and one vehicle became stuck in the water.
- On February 14, 2011, a building partially collapsed in Mt. Auburn. No one was harmed in the incident.
- On August 9, 2010, a water main break in Blue Ash closed Raymond Walters College for one day.
- In September 2008, the remnants of Hurricane Ike resulted in over 782,000 households losing power in Southwest Ohio, including Hamilton County.
- The Northeast Blackout of 2003 affected over 50 million people. It did not directly affect Hamilton County, but parts of Ohio were impacted.
- On May 26, 1989, about 5:25 p.m. eastern daylight time, a 140-foot section of the 556-foot Harrison Road temporary bridge over the Great Miami River fell about 40 feet into the rain-swollen river after a pile bent collapsed. Witnesses reported that a passenger car and a pickup truck fell into the river.
- On June 17, 1979, a wooden balcony collapsed in Mount Adams with around 30 people on it. The fall was between 40-50 feet and 27 people were injured.
- August 31, 1978 an Oregon Street balcony collapsed. Ten people were on it at the time and three were injured.

Probability for Infrastructure and Structural Failure Hazard

This hazard is considered to have a **"**Medium Probability." Although significant occurrences of this hazard have rarely occurred, lower impact events may occur with regularity.

Geographic Location for Infrastructure and Structural Failure Hazard

This hazard can occur anywhere since infrastructure is intertwined throughout the built environment.

Hazard Extent for Infrastructure and Structural Failure

Most road failures are small and do not cause a large impact. However, infrastructure failures in a high profile or high use location can cause serious traffic disruption and many injuries and death.

Table 97: Infrastructure Failure Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Infrastructure Failure	County-wide	Water main break	Bridge Collapse	The maximum extent represents a hypothetical, but realistic scenario. While Hamilton County has experienced minor bridge collapses in the past, the Minneapolis Bridge Collapse of 2007 represents a worst-case scenario, and something similar could occur in the future. This incident resulted in 13 fatalities and 145 injured. It was Minnesota's third busiest bridge.
Structural Failure	County-wide	Unoccupied old home partial collapse	Complete or partial collapse of a multi-story building	The maximum extent represents a hypothetical, but realistic scenario. On July 17, 1981, two suspended walkways through the lobby of the Hyatt Regency in Kansas City, Missouri, collapsed, killing 114 and injuring 200 people
Utility Failure	County-wide	0 households affected	782,000 households affected	In September 2008, the remnants of Hurricane Ike resulted in over 782,000 households losing power.

Analysis of Community Development Trends

The growth of the County, and the aging infrastructure will continue to make the County vulnerable to this hazard. Several major pieces of infrastructure are in need of replacement including the Brent Spence Bridge over the Ohio River and the Western Hills Viaduct in Cincinnati.[105][106]

Previous Changes in Development

No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard.

[105] (2016, November 7). Trump promises Brent Spence Bridge replacement. *Cincinnati Business Courier*. https://www.bizjournals.com/cincinnati/news/2016/11/07/trump-promises-brent-spence-bridge-replacement.html

[106] Wartman, Scott. (2018, March 12). Western Hills Viaduct: The Trump administration just rejected a big grant for it. What's next? *Cincinnati Enquirer*. https://www.cincinnati.com/story/news/2018/03/12/western-hills-viaduct-misses-out-large-federal-grant-how-big-delay/417534002/

Vulnerability to Future Assets/Infrastructure for Infrastructure and Structural Failure Hazard

Construction of newer infrastructure is less likely to fail; however, many failures are the result of damage due to other hazards (flood, landslide, etc.), and this is a possibility for both new and old assets.

Vulnerability Analysis for Infrastructure and Structural Failure Hazard

Hamilton County is home to over 800,000 people and must have the infrastructure to support these residents. Transportation infrastructure is critical for residents as they travel daily to work, school, and other locations. The County also attracts travels from outside the area who come to visit for business and pleasure. To accommodate these needs, the County has an extensive road network. Other failures to the water and wastewater systems, pipelines and other assets pose a risk to the county. These utility failures are brief but have the potential to cause other problems if they remain unresolved too long. For example, typically, power outages are short lived. If the power grid was significantly damaged, however, the risk for additional hazards grows (such as riots, fires due to candle use, etc.).

Impact to Hamilton County Residents

The most likely outcome for a failure in road, bridge, or overpass failure is major inconvenience, travel delays, and traffic congestion. It is very possible, however, that people could be injured or killed if they are in the near proximity of a road, bridge, or overpass collapse. Infrastructure and structural events can be resolved within a day or extended for weeks or months. Utility failure is likely to be limited to short inconveniences, with the most likely scenario being temporary power failure. Continued electrical service, however, is incredibly important in maintaining the health and safety of the public. Electricity is required to heat and cool homes, operate traffic signals, and operate hospitals and emergency services. Power outages can be particularly dangerous during times of extreme heat or cold. In addition, power outages can have a negative impact on the infirm. The number of people impacted by a power outage is highly variable with each event. It is also possible that water or sewage failure can foster unsanitary conditions that may increase the risk for sickness.

The availability of clean drinking water is crucial to the health and safety of the public. Water service interruptions can cause untreated or poorly treated drinking water to enter the water supply, resulting in boil water advisories. The storm water sewer system is of great importance to protecting human health and safety. Flooding which results during system failures, or capacity exceedances, can create safety problems and sewer backups in both combined storm water systems (sanitary and storm water flow) and separated storm water systems, presenting a health concern.

Impact to Essential Facilities and Other Property

Water infrastructure systems play an important role in communities. Water treatment systems, including distribution mechanisms, and wastewater systems serve a critical purpose in sanitation and disease prevention by removing harmful viruses, bacteria, and parasites. Keeping water supplies clean of contaminants results in reduced sickness and associated health care costs, which in turn, contributes to reduced absenteeism in the workforce and increased worker productivity.

Providing sufficient water supplies to industries that rely on pure water for processing, cooling, or product manufacturing means that these systems generate direct economic value across many sectors of the economy across the country. Storage reservoirs and water towers help ensure this continued availability of clean water, providing additional water resources during peak demand time. Building Inventory: Storm water system failures, unlike other critical infrastructure disruptions, have the greatest potential to inflict direct damage to property and buildings. As discussed in the Flood section of this Plan, urban flooding can result in major property damage costs.

Impact to Critical Infrastructure

This hazard is, by definition, impacted critical infrastructure.

Impact to Environment

No infrastructure failure is likely to significantly impact the environment, unless such a failure were to somehow cause hazardous materials to be released into the water, land, or atmosphere.

Impact to Operations

Although first responders and their facilities are likely to be impacted if there is a loss of systems (e.g., data and communications, street and traffic lighting, alarm) and this hazard could require a significant response from emergency personnel and public works. Damage to roads and bridges and power loss can lead to congested roads, severely limit the ability of emergency personnel to respond to emergency situations, and impact business operations and County services.

Public Confidence in the Jurisdiction's Governance

A loss of essential services resulting from infrastructure failure is likely to cause significant disruptions in the public's confidence in the jurisdiction's governance, particularly if the failure was caused by something the public sees as within the jurisdiction's control. If the failure is due to lack of maintenance as opposed to a result of a natural hazard, the public is likely to have less confidence in the jurisdiction's governance. Structural failures are less likely to erode public confidence unless those failures are a result of safety issues that could have otherwise been mitigated through effective building and code enforcement practices.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 98: Jurisdiction-Specific Hazard Impact/Vulnerability for Infrastructure Failure

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cincinnati – City	The city has bridges and levees that are vulnerable that could impact transportation and flooding.
Forest Park – City	Several bridges crossing, I-275 and major roadways through Forest Park, Winton, and Kemper are potentially vulnerable to infrastructure failure.
Harrison – City	City water and wastewater are affected during infrastructure failure incidents.
Loveland – City	The city operates its own drinking water system, including 3 wells, a treatment plant, 7 water storage tanks, and distribution piping. The city has 2 emergency interconnections for water (Clermont Co. and GCWW).

Table 98: Jurisdiction-Specific Hazard Impact/Vulnerability for Infrastructure Failure	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Madeira – City	Camargo Culverts, old watermains, Camargo Bridge at EUCLID, Shawnee Run Bridge, and Miami Culverts are structures that are potentially vulnerable to infrastructure failure. Several utilities are at risk of failure, such as GCWW, Duke, CBT, Spectrum, and Indian Hills Water Works.
Wyoming – City	Wyoming has its own water plant, water tower and wells that are vulnerable to infrastructure failure.
Cleves – Village	If the bridge over the Miami River collapsed, it would close off east/west traffic to Indiana and the City of Cincinnati.
Evendale – Village	Damaged railroad trestles due to flooding/erosion increase the risk of infrastructure failure. Duke's transmission gas lines and Glendale Water Works (Sharon Road) are all vulnerable to failure.
Glendale – Village	The bridge on Sharon Road, scheduled for replacement, is a concern for structural failure. Water mains needing upgrades, could potentially cause infrastructure failure. Older systems need replacement.
Golf Manor – Village	Train trestle, MSO Lines, and the Duke Energy power relay station (located adjacent to the railroad track between Section Road and Losantiville Avenue) are all vulnerable to infrastructure failure.
Greenhills – Village	A series of large water main breaks occurred in the summer of 2017 in the eastern half of the Village of Greenhills. This was due to a failed pressure regulator in a neighboring community. These breaks caused damage to Village streets and curbs, repaired by GCWW.
Lincoln Heights – Village	If I-75 were to be compromised or inaccessible, the village's streets and other infrastructure would be unable to support a significant amount of traffic. This is due to eroding streets, inadequate catch basins and unmanaged storm water runoff. These issues are currently being addressed.
Lockland – Village	The water distribution system is potentially vulnerable to infrastructure failure.
Silverton – Village	There is one known "bridge" culvert on Stewart Road north of I-71 that is a potential risk for structural failure.
Colerain – Township	The Township has experienced infrastructure failure in the past. Exposure of expressway and/or highway bridge piers/columns to vehicle involved accidents resulting in closure of roadway. The Harrison Ave. bridge collapsed in 1989. In 2014, there was an oil pipeline rupture.
Crosby – Township	Texas gas line with compressor station is vulnerable to failure.
Harrison – Township	City water and wastewater are affected during infrastructure failure incidents.
Sycamore – Township	Highpoint Subdivision is a vulnerable community with a main high-pressure natural gas supply substation and termination of a gas line. Various water towers throughout the township are also vulnerable to failure.
Symmes – Township	The township also has wastewater/sewer facilities that would be vulnerable to failure.

Summary Vulnerability Assessment

In Ohio, the infrastructure is aging, and repair or maintenance is required for many roads and bridges. According to the 2019 Report Card for Ohio's Infrastructure[107] published by the American Society of Civil Engineers, bridges were given a C+, which means they require attention, and roads were given a D, they are at risk of infrastructure failure. Ohio experiences a large volume of travelers and congestion costs Ohio drivers about $4.7 billion each year. Drinking water was given a D+ because it is aging and the state experiences greater than 35% water losses and breaks are in the treatment systems and distribution network are expected to increase by 36% over the next 20 years. Wastewater was given a C-, the 2016 Clean Watersheds Needs Survey (CWNS) published survey results and it was determined that $17 billion was required to meet the water quality and human health goals of the Clean Water Act.

Table 99: Infrastructure and Structural Failure Hazard Evaluation and Impact/Consequence Assessment

Hazard Event	Probability	Consequence				Total Risk
	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Infrastructure and Structural Failure	3	8	11	20	39	**61**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

[107] American Society of Civil Engineers. (2019). 2019 Report Card for Ohio's Infrastructure. ASCE Brochure—OH2021.pdf (infrastructurereportcard.org).

Land Loss

Total Risk Score: 19

Land loss results from the occurrence of a geological event. They happen based on environmental conditions and can be long-term or short-term processes. This section will describe the following categories: subsidence, erosion, karst, and sinkholes.

Erosion

Erosion is the geological process by which the surface of the Earth gets worn down and transported by wind or water. Erosion rates vary over time and space. Causes of characteristics of erosion include:

- erodibility of material
- soil slope and composition
- water level fluctuations
- nearshore lakebed shoals and slopes
- storm wave energy and duration
- precipitation
- ground water and soil conditions
- ice cover
- shoreline orientation
- beach composition, width and slope
- shore protection structures

Erosion in areas that are not coastal can be caused by weathering. Weathering is the breakdown of rocks and Earth's surface and is caused by rainwater, extreme temperatures, and biological activity. There are three types of weathering: physical weathering, chemical weathering, and biological weathering.

Physical weathering is caused by the effects of changing temperature on rocks, causing the rock to break apart. One example of this is when water seeps into the cracks of rocks and then freezes. It expands the space and overtime it breaks overtime. When rainwater is slightly acidic, it reacts with mineral grains in rocks to form new minerals (clays) and soluble salts, this process is known as chemical weathering. When living organisms cause rock deterioration, the process is biological weathering. Trees, bacteria, and small animals will grow on or in between of the rocks slowly scrapping away on the rock for nutrients and shelter.

Karst

According to the Ohio Division of Geological Survey, "Karst is a landform that develops on or in limestone, dolomite, or gypsum by dissolution and that is characterized by the presence of characteristic features such as sinkholes, underground (or internal) drainage through solution-enlarged fractures (joints), and caves. While karst landforms and features are commonly striking in appearance and host to some of Ohio's rarest fauna, they also can be a significant geologic hazard. Collapse of an underground cavern or opening of a sinkhole can cause surface subsidence that can severely damage or destroy any overlying structure such as a building, bridge, or highway. Improperly backfilled sinkholes are prone to both gradual and sudden subsidence, and similarly threaten overlying structures.

Sewage, animal wastes, and agricultural, industrial, and ice-control chemicals entering sinkholes as surface drainage are conducted directly and quickly into the ground-water system, thereby posing a severe threat to potable water supplies."[108] Karst terrain is not intrinsically hazardous but can become so if the land near development begin to dissolve. Any future development in Hamilton County will be vulnerable to these events.

Sinkhole

A sinkhole is a hole that forms in the Earth's surface because of the chemical weathering of carbonate rocks like limestone, as well as salt beds or rocks that can be severely weathered as water runs through them and erosion. The process happens through the gradual dissolving process and removal of water. As the rock is removed, caves and open spaces develop under the surface. Once the open spaces become too large to support the weight of the land above them, the surface soil collapses, and a sinkhole is created. The formation of sinkholes often occurs following extreme rainfall, especially after a prolonged dry period. Sinkholes can also occur due to poorly backfilled construction or breaks in underground sewer or water pipes. Sinkholes can be found all over the world. Depending on location, sinkholes are sometimes also called sinks, shake holes, swallow holes, swallets, dolines, or cenotes.

Subsidence

Subsidence is the motion of the Earth's surface as it shifts downward relative to a benchmark (often sea level) of the surrounding terrain. [109]The ground often caves in because of material movement underneath. It is most often caused by the removal of water, oil, natural gas, or mineral resources out of the ground by pumping, fracking, or mining activities. Other factors are earthquakes, soil compaction, erosion, and sinkhole formation. Subsidence is a non-spatial hazard; it can occur in small areas like someone's backyard or large areas like a county or state.

Previous Occurrences for Land Loss Hazard

There is no comprehensive list of erosion, sinkholes karst, or subsidence events in Hamilton County. Erosion is distinct around Lake Erie. The Ohio Division of Natural Resources Geological Survey does maintain a list of naturally occurring sinkholes, but the list is not comprehensive. Sinkhole can occur in remote areas, and the ODNR Geological Survey relies on sinkhole reports to maintain their database. According to the ODNR Geological Survey, "through 2015, the number of karst features – including verified, suspect, and unverified – mapped in Ohio is about 5,700. This number will change as false positives are identified and removed and as unknown sinkholes are located, especially in southern Ohio. Of the 5,700 total suspected or known karst points, 1,800 points have been field verified as karst, along with more than 100 springs."[110]

The following examples were garnered from searching news reports:

- May 24, 2022: A sinkhole 13 feet 3 inches deep opened in a crosswalk at the intersection of East 8th Street and Walnut Street in downtown Cincinnati. It was caused by the partial collapse of an old brick sewer pipe.

[108] https://geosurvey.ohiodnr.gov/portals/geosurvey/PDFs/karst/karstmap.pdf
[109] Ohio Emergency Management Agency. (2019).State of Ohio Enhanced Hazard Mitigation Plan. Retrieved from https://www.ema.ohio.gov/static/mip/links/2019_sohmp-FullCopy.pdf.
[110] http://geosurvey.ohiodnr.gov/portals/geosurvey/PDFs/GeoFacts/geof31.pdf

- Between February 14, 2018 – February 25, 2018, there were storms which resulted in a disaster declaration (DR-4360-OH) for severe Storms, landslides, and mudslides on April 17, 2018. The total public assistance grants obligated was $66,595,216.18.
- May 23, 2013: A 15-foot wide and 30- to 40-foot-deep sinkhole opened on Maple Avenue in Norwood due to a collapsed storm drain. The sinkhole severely damaged a home.
- June 20, 2014: A 10-foot long, 15-foot wide, and 20-foot-deep sinkhole opened on Shield Street in Cincinnati, nearly taking a Metro bus with it. No one was injured. The sinkhole is believed to have been caused by a burst sewer pipe.
- August 28, 2016: A 100-year flood damaged an underground sewer beneath Friendship Park, creating a large sinkhole. Parts of the park were blocked off for months while repair plans were determined.
- April 17, 2017: A sinkhole closed Van Blaricum Road in Green Township due to heavy rain.
- April 25, 2017: issues with roof, plumbing lines, and a collapsing driveway led to the displacement of 59 families in the Eagle Watch Apartments
- June 24, 2017: A sinkhole closed Glendale Milford Road. Rainfall may have been a factor in the development of this sinkhole.
- July 14, 2017: Three inches of rain caused a corrugated metal pipe to rupture, creating a sinkhole on 96th Street.
- August 29, 2017: A sinkhole closed the intersection of Clifton and Amazon Avenues.

Probability for Land Loss Hazard

This hazard is considered to have a "Low Probability" because significant occurrences of this hazard have only rarely occurred alongside occasional lower-impact incidents.

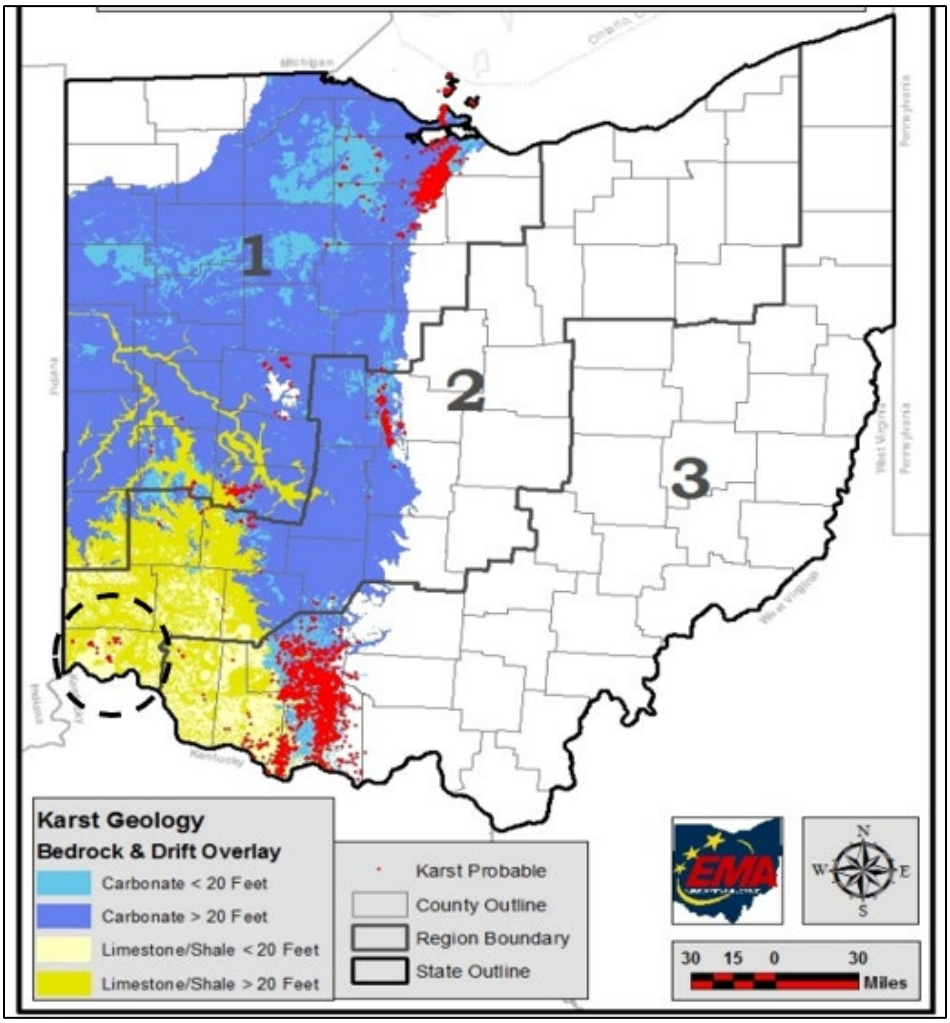
Geographic Location for Land Loss Hazard

Currently, less than 2% of the State of Ohio is karst terrain, however many areas are vulnerable to karst and associated impacts. Hamilton County is a part of the Ordovician Uplands, which is home to "surprisingly well-developed karst terrain despite the large component of shale in local bedrock. Numerous sinkholes are present in Ordovician rocks of Adams, Brown, Clermont, and Hamilton Counties. The carbonate-rich members of the Grant Lake Formation (Bellevue and Mount Auburn), Grant Lake Limestone (Bellevue and Straight Creek), and the upper portion of the Arnheim formation are the Ordovician units most prone to karstification; however, the shale-rich (70 percent shale, 30 percent limestone) Waynesville Formation also has been subjected to a surprising amount of karst development in southeastern Brown and southwestern Adams Counties, just north of the Ohio River."[111]

There are some probable karst areas in Hamilton County. In Figure 27, Hamilton County is indicated by the area within the black dotted circle.

[111] https://geosurvey.ohiodnr.gov/portals/geosurvey/PDFs/karst/karstmap.pdf

Figure 29: Karst Geology Impacted Area by Bedrock and Glacial Drift Overlay



Hazard Extent for Land Loss

Sinkholes can range from small (a few feet in diameter and a few feet deep) to much larger. The largest, recent sinkhole that was gleaned from the news measured 15-foot wide, and 30 to 40-foot deep.

Table 100: Sinkhole/Karst Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Erosion, Sinkhole/Karst, Subsidence	County-wide	0-feet	15-feet wide, and 30 to 40-feet deep	

Analysis of Community Development Trends

Any future developments need to be implemented with the awareness that land loss is a possibility in Hamilton County. Analysis of any future development needs to be undertaken to determine whether the land is particularly vulnerable to land loss, or if there is potential for manmade sinkholes to develop in the future due to aging pipelines.

Due to the aging infrastructure of some pipes in Hamilton County, additional sinkholes may occur. According to Hamilton County Surveyor Kent Ward, "It's something that will happen again on others throughout the County. We know that. We are anticipating it and it's just a matter of time. We try to go in when we have the money and replace certain sections, so we get there before it happens."[112]

Previous Changes in Development

No significant or notable developmental (construction, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. Land loss may occur at a faster rate as a result in changes in the environment due to climate change. Aging pipelines could be compromised and cause more sinkholes and an increase in rainwater could speed up the rate of erosion.

Vulnerability to Future Assets/Infrastructure for Land Loss Hazard

Knowing where sinkhole, karst, and mine subsidence features are located could help community planners, as well as individual landowners, to make decisions on where to build homes and other structures. This information could save communities thousands of dollars in repairs to buildings that are built on unstable terrain. Vulnerability to future building stock and infrastructure cannot be determined until more is known about the hazard in Hamilton County.

Vulnerability Analysis for Land Loss Hazard

Hamilton County is at risk for sinkholes and mine subsidence. They can be caused both by the rupture of aging underground pipes and through naturally occurring processes.

Impact to Hamilton County Residents

Land loss, sinkholes and mine subsidence can damage any property or structure directly above them or in the immediate vicinity. Direct impacts to Hamilton County residents would likely occur via damage to housing, vehicles, land, or any frequently used roadways. In some cases, they are also a direct conduit to the water table and thus are a high risk for pollution. Land degradation can also negatively affect residents with respiratory diseases caused by atmospheric dust from wind erosion and other air pollutants. As well as an increased risk of conflict as community displacement places new pressures on surrounding land and resources, increasing competition and heightening the risk of conflict.

Impact to Essential Facilities and Other Property

Any essential facility can be damaged if there is land loss near or beneath the facility. Building Inventory: Sinkholes and mine subsidence can damage nearby buildings.

Impact to Critical Infrastructure

Land loss can damage any nearby infrastructure. Karst features may pose a threat to current or future infrastructure, including roads, railways, pipelines, foundations, and other structures. Based on recent sinkholes in the county, roads tend to be the most impacted infrastructure.

[112] http://fox59.com/2017/07/14/carmel-sinkhole-could-be-one-of-many-to-come-in-hamilton-county/

However, many of the recent sinkholes have been caused by previously damaged infrastructure (for example, heavy rains damaged an aging pipe, which ruptured and caused the sinkhole).

Impact to Environment

Besides the obvious collapse or deformation of the land, whether it be sinkholes, mine subsidence, karst, or erosion, direct connections between surface water and the water table, potentially facilitating the pollution of the water table. Surface contaminants, such as excess field fertilizer, drain into sinkholes and are often re-expressed at the land surface from springs. It is common to see springs with algae and watercress blooms fed by high concentrations of fertilizer in the water. Houses with a water well in a karst area also have a high risk of surficial contamination from anything that enters a sinkhole, including E. coli (dead deer are commonly disposed of in sinkholes), fertilizer, pesticide, and other waste.

Impact to Operations

Unless there was land loss near an emergency related facility, or a major road or access point, first responder operations should not be heavily impacted by sinkholes.

Public Confidence in the Jurisdiction's Governance

Whether or not the public loses confidence in the jurisdiction's governance related to land loss would largely come down to what caused the land loss and what essential services were impacted. If land loss is a result of poor land use planning or lack of maintenance, or impacts essential services or critical infrastructure, then there will likely be a larger loss of public confidence. If however the event could not have been mitigated, is naturally occurring, or does not impact the daily lives of residents, then it is unlikely to have significant impact on the public's confidence in the jurisdiction's governance.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 101: Jurisdiction-Specific Hazard Impact/Vulnerability for Sinkhole/Karst

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Deer Park – City	Blue Ash Road and Plainfield Road are prone to subsidence.
Norwood – City	The city has experienced a manmade sinkhole incident, which was caused by sewer issues.
Wyoming – City	The old landfill located at Oak Park is vulnerable to subsidence.
Fairfax – Village	Small sinkholes have occurred on residential streets. Some have been due to utility (MSD, CWW line leaks) leaks. There are also unknown causes of sinkholes. In 2015, a sinkhole resulted in water disappearing from the Little Duck Creek at Watterson for about 1 month. Water suddenly reappeared.
Glendale – Village	Failures due to crumbling pipes and lines underground are of concern to the village.
Golf Manor – Village	Subsidence is a possible vulnerability throughout village, particularly the 6000 block of Stover Ave.

Table 101: Jurisdiction-Specific Hazard Impact/Vulnerability for Sinkhole/Karst	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Lincoln Heights – Village	The village has some depressions forming on streets due to lack of maintenance. The village is addressing these as funding becomes available.
North Bend – Village	The village has experienced sinkholes on US 50 between St. Anne's and Shady Lane. The maintenance department and ODOT address these issues, as needed.
St. Bernard – Village	The village has experienced sinkholes in the past.
Anderson – Township	Anderson Township could potentially be impacted by erosion and soil stability.

Summary Vulnerability Assessment

Land loss can cause an immediate and unforeseen hazard. These holes can occur suddenly and cause damage to everything nearby. Recent sinkholes in Hamilton County have damaged infrastructure, vehicles, and houses. Sinkholes can also create direct connections between surface water and the water table, potentially facilitating the pollution of the water table.

Potential structural and/or direct dollar loss due to land loss is estimated to be zero because no historical data is available for losses due to this hazard. Because data regarding existing and past land loss is not available, it is not possible to determine how many buildings would be impacted.

Table 102: Land Loss Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Land Loss	1	4	6	21	31	**19**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Landslide

Total Risk Score: 33

Landslides are a serious geologic hazard common to almost every state in the United States. It is estimated that nationally they cause up to $2 billion in damages and from 25 to 50 deaths annually. Globally, landslides cause billions of dollars in damage and thousands of deaths and injuries each year. The term landslide is a general designation for a variety of downslope movements of earth materials. A mass of soil will come free and move downward and away from the foundation or structure that was being held together. Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly. Gravity is the force driving landslide movement. Factors that allow the force of gravity to overcome the resistance of earth material to landslide movement include saturation by water, steepening of slopes by erosion or construction, alternate freezing or thawing, earthquake shaking, and volcanic eruptions.

There are three main types of landslides that occur in Ohio: 1) rotational slump, 2) earthflow, and 3) rockfall. Rotational slumps are characterized by the movement of a mass of weak rock or sediment as a block unit along a curved slip plane. These slumps are the largest type of landslide in Ohio, commonly involving hundreds of thousands of cubic yards of material and extending for hundreds of feet. Rotational slumps may develop comparatively slowly and commonly require several months or even years to reach stability; however, on occasion, they may move rapidly, achieving stability in only a few hours.

Earthflows involve rock, sediment, or weathered surface materials moving downslope in a mass. While earthflows are the most common form of downslope movement in Ohio, they are smaller than rotational slumps. Characteristically, earthflows involve a weathered mass of rock or sediment that flow downslope as a jumbled mass, forming a hummocky topography of ridges and swales. Earthflows are most common in weathered surface materials and do not necessarily indicate weak rock. The rate of movement of an earthflow is generally quite slow.

Rockfalls are extremely rapid, and potentially dangerous, downslope movement of earth materials. Large blocks of massive bedrock may suddenly become detached from a cliff or steep hillside and travel downslope in a free fall and rolling, bounding, or sliding manner until a position of stability is achieved. Most rockfalls in Ohio involve massive beds of sandstone or limestone. Surface water seeps into joints or cracks in the rock, increasing its weight and causing expansion of joints in freezing temperatures, prying blocks of rock away from the main cliff. Weak and easily eroded clay or shale beneath the massive bed is an important contributing factor to rockfall.

Landslides are typically associated with periods of heavy rainfall or rapid snow melting and tend to worsen the effects of flooding that often accompany these events. In areas burned by forest and brush fires, a lower threshold of precipitation may initiate landslides. Several events or circumstances, many of them human-caused, can trigger landslides, including: [113]

- Vibrations caused from noise pollution, the blasting of a horn from the passing of heavy trucks, the collapse of a structure, or natural events such as earthquakes those from

[113]

human-causes like blasting, the passing of a heavy truck, or from natural events like earthquakes.

- Extremely steep slopes caused by erosion or human construction.
- Increased weight on a slope with no supportive foundation.
- Increase in heavy rains that wash away the sediment.
- Human construction.
- Removal of vegetation and trees and its roots which tend to hold the rock or sediment in place and soak up excess moisture.

Previous Occurrences for Landslide Hazard

Landslides are a significant problem in several areas of Ohio. Hamilton County and the Cincinnati area has one of the highest per-capita costs due to landslide damage of any city in the United States. Landslide occurrences have significantly increased since 2011, especially along the Columbia Parkway. For example, in 2009, there were three reports to the City's Customer Service system of landslides, and one in 2010. By comparison, there were 18 reports of landslides affecting the Columbia Parkway in 2011. Additionally, record rainfalls led to multiple landslides in January and May 2012. On April 17, 2018, the State received a disaster declaration (DR-4360) due to the severe storms, flooding, mudslides, and landslides that struck the southern and southeastern counties of Ohio in February, including Hamilton County. Total public assistance grants obligated totaled $66,595,216.18.

In the 1970's, the catastrophic Mt. Adams landslide led to the construction of a retaining wall in the 80's. On May 3, 2017, the retaining wall in Mount Adams failed, causing a landslide into two homes. The extensive amount of damage caused the Cincinnati Fire Department to order the families to stay out entirely. Damage was done to the first and second floors, endangering several decks as well. No one was injured during this incident. From 1992 to 2003 there were at least 39 significant and costly landslide events in Hamilton County. Over this 12-year span landslides caused at least $6.2 million in damages, averaging out to approximately $522,000 a year. In March 1996 a landslide at a sanitary landfill near Cincinnati caused a 25-acre trash slide. In 1986, a landslide caused one fatality when falling rocks crushed a car on US Highway 52. There have been no new events during the current planning period.

Probability for Landslide Hazard

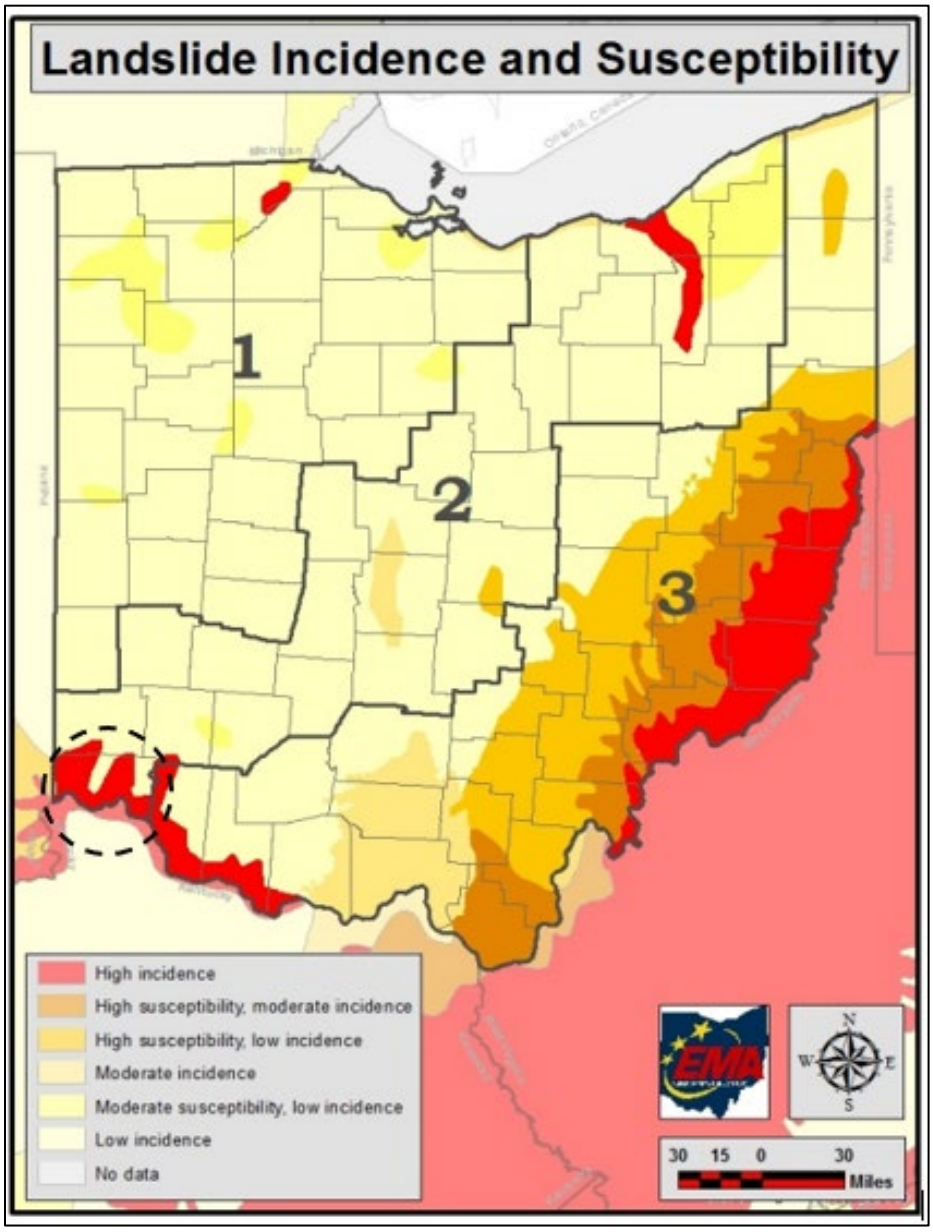
Based on local subject matter expertise and the process outlined in the Risk Assessment Methodology of this plan, this hazard is considered to have a "Low" probability because highly significant occurrences of this hazard have only happened on occasion. This does not mean, however, that small scale landslide events may not occur on a more frequent basis.

Geographic Location for Landslide Hazard

Hamilton County is a region of high landslide susceptibility and hazard potential. The areas susceptible to landslides are located along streams and steep valleys that contain weak silts and clays, and where other unconsolidated glacial sediments are concentrated. Many bedrock slope failures are in the shale-dominated Kope Formation, and to a lesser degree in the Miami town Shale. One example is the slipping hillside about East End Road that has prompted the building of another large retaining wall to protect the critical infrastructure in that area. The following figure

depicts landslide incidence and susceptibility in Ohio, the black dotted circle identifies Hamilton County.

Figure 30: Ohio Landslide Incidence and Susceptibility



Hazard Extent for Landslide

The extent of the landslide hazard is closely related to development near the regions that are at risk. The hazard extent of landslides spread throughout the entire county in various concentrated areas.

Table 103: Landslide Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events) Minimum	Maximum	Comments
Landslides	County-wide	Small Isolated Landslide	Multiple Homes Damaged	Hamilton County is a region of high landslide susceptibility and hazard potential.
	Cincinnati	Small Isolated Landslide	Multiple Homes Damaged	The Cincinnati area has one of the highest per-capita costs due to landslide damage of any city in the United States.

Analysis of Community Development Trends

Core Planning Team discussed mitigation strategies to lessen the impacts of landslides by restricting new development in vulnerable areas. Some of the most vulnerable areas include Huffman Court in Cincinnati and Lawyers Pointe in Anderson Township, as a result of slide in glacial materials. Landslides traveling as long, thin sheets are also a regular occurrence along Columbia Parkway. Mt. Adams is a prominent topographic feature in Cincinnati and is home to one of the most expensive landslide remediation projects in the history of the U.S at a cost of $44.5 million.

Previous Changes in Development

Since the 2018 Hamilton County Multi-Hazard Mitigation Plan, homes are still being developed in landslide-prone areas. The increase in rainfall because of climate change can increase the risk of landslides because as the water to soil concentration increases on hillside, the weight and pressure of structures become unbearable.

Vulnerability to Future Assets/Infrastructure for Landslide Hazard

All future community assets and infrastructure in areas with high susceptibility to landslides will remain vulnerable to damage. In areas with higher levels of population the vulnerability is greater than in open areas with no infrastructure demands.

Vulnerability Analysis for Landslide Hazard

Because of the steep slopes, soil types, and rapid growth within Hamilton County, there is an increased vulnerability to landslides. As vegetation is removed from steep slopes or these slopes are surcharged by development, the threat of landslides or slumps increases proportionally. As a result, the entire population and all buildings in landslide prone areas have been identified as at risk.

Impact to Hamilton County Residents

Because much of Hamilton County is highly susceptible to landslides, the entire county is at risk. However, residents would be impacted primarily if a landslide occurred near a residential or high-traffic area. Landslides could damage housing or roads, making residence or travel unsafe. Elderly people and people with disabilities may require additional assistance. People who care for them or who have large families may need additional assistance in emergency situations.

The health hazards associated with landslides include rapidly moving water and debris that can lead to trauma. Broken electrical, water, gas, and sewage lines that can result in injury or illness; and disrupted roadways and railways that can endanger motorists and disrupt transport and access to health care. Landslides also have the potential to inflict a significant long-term social and psychological impact on residents, as experiencing major landslides has been shown to be a particularly traumatizing experience.

Impact to Essential Facilities and Other Property

An essential or critical facility will encounter many of the same impacts as any other building within the affected area. These impacts include damage ranging from cosmetic to structural. Buildings may sustain minor cracks in walls due to a small amount of settling, while in more severe cases the failure of building foundations causes cracking of critical structural elements. The buildings within areas highly susceptible to landslides can all anticipate the same impacts, like those discussed for critical facilities. These impacts include damage ranging from cosmetic to structural. Buildings may sustain minor cracks in walls due to a small amount of settling, while in more severe cases the failure of building foundations causes cracking of critical structural elements. Building Inventory: The buildings within areas highly susceptible to landslides can all anticipate the same impacts, like those discussed for critical facilities. These impacts include damage ranging from cosmetic to structural. Buildings may sustain minor cracks in walls due to a small amount of settling, while in more severe cases the failure of building foundations causes cracking of critical structural elements.

Impact to Critical Infrastructure

In the areas of Hamilton County that are highly susceptible to landslides, potential impacts to infrastructure include: broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); and railway failure from broken or impassable railways. In addition, bridges could fail or become impassable causing risk to traffic. These impacts may lead to protracted closures and costly repairs. The debris flows from landslides may also disturb natural habitats and ecosystems and accelerate surface erosion and sediment transport in watersheds.

Impact to Environment

Landslides can often enter water courses, increasing turbidity and polluting water supplies. Landslides can also alter river courses, disrupt large amounts of soil, contaminate the air, and cause deforestation. All of these environmental changes can lead to an increased risk of vector borne diseases or bacteria, potentially impacting human health long after the disaster has occurred.

Impact to Operations

Unless key roads and access roads are blocked, or critical medical facilities heavily damaged, disaster recovery operations should be able to respond and communicate effectively. If this does happen, however, first responders may be forced to improvise or seek alternatives.

Public Confidence in the Jurisdiction's Governance

Whether or not the public losses confidence in the jurisdiction's governance related to landslides would largely come down to what essential services or critical infrastructure is impacted. If landslide is a result of poor urban planning or lack of maintenance (i.e., a landslide prone area where vegetation was not planted and retaining walls were not maintained), or impacts essential services or critical infrastructure, then there will likely be a larger loss of public confidence. If however the event could not have been mitigated, is naturally occurring, or does not impact the daily lives of residents, then it is unlikely to have significant impact on the public's confidence in the jurisdiction's governance.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 104: Jurisdiction-Specific Hazard Impact/Vulnerability for Landslide

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cincinnati – City	Cincinnati has local landslide prone areas that can impact transportation, utility, and housing infrastructure.
Loveland – City	Slips have occurred on Broadway St., Riverside Dr., Butterworth Rd., Glen Lake Dr., and Hidden Creek Park.
Madeira – City	There are several areas that are at risk of landslides. These areas include Camargo Canyon, Madeira Pines, West end of Vista Ridge, south end of Maple Ridge, and OAR Vista.
The Village of Indian Hill – City	Landslides continue to be a concern for the village due to the soil type in certain areas.
Wyoming – City	The 400 block of Galbraith has had issues with landslides and is an area of concern.
Cleves – Village	Homes behind Mariemont Prominade (on Wooster Pike and Mariemont Crescent) are susceptible to landslides due to the natural springs.
Evendale – Village	A location on Bender Road is a repetitive risk because of flash flooding and is a landslide threat. There have been multiple events where rocks and natural debris (1-2 feet of mud/rock) have washed across the roadway blocking access for several hours.
Fairfax – Village	The Loveland Madeira slippage area is vulnerable to landslide.
Mariemont – Village	There is a landslide concern between Morgan and Sildy Rd across from soccer complex. There is slippage along SR-128.
North Bend – Village	Brunsman Way Subdivision is susceptible to landslides.
Silverton – Village	Otterbein Drive and Lawarc Drive are areas vulnerable to landslide.
Terrace Park – Village	1) Hillside erosion occurring on Eleanor Street (dead end) is potentially vulnerable to landslides. A storm sewer line empties into a ravine above Whiskey Creek. Water from the outfall is beginning to erode the hillside and residential yards on the east end of Eleanor. 2) Hillside erosion is occurring along US 50 East in Fairfax. Hillside repairs were completed in 2017 by ODOT, which threatened the eastbound lane of US 50. Potential for other erosion still exists.
Columbia – Township	The Whiskey Creek area behind Mariemont Ave. (6600 block) has land erosion that is impacting residences that sit above the creek.

Table 104: Jurisdiction-Specific Hazard Impact/Vulnerability for Landslide	
Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Delhi – Township	In North Bend, there is potential for landslides between St. Anne's and Shady Lane; and again, from Shady Lane East to the village landline before Addyston. The topography of North Bend makes the village vulnerable to landslides.
Symmes – Township	There are several areas prone to landslides within the village. These areas include Stewart Road at I-71, the hillside overlooking I-71, the hillside by Belkenton and Section Road.
Whitewater - Township	The homes on the east side of Miami Avenue overlook the Little Miami River. The homes are approx. 60-100 feet above the river and sit on gravel.

Summary Vulnerability Assessment

The CAGIS map on the following page depicts the most recent and up-to-date landslide areas in Hamilton County. The 100-year flood boundary is also depicted to show the cascading and secondary impact that flooding has on the landslide threat for some areas of the county. The in-depth landslide study conducted in 2013 for Hamilton County is included in *Part 3, Appendix C* for additional Hazard Analysis Documentation.

Table 105: Landslide Analysis		
Building Type	Number of Buildings	Estimated Losses/Exposure
Residential	1,346	$279,851,500
Non-Residential	610	$19,740,730
Critical Facilities	10	$2,150,000
Totals	**1,900**	**$301,742,230**

Figure 31:Hamilton County Landslide Impact Areas

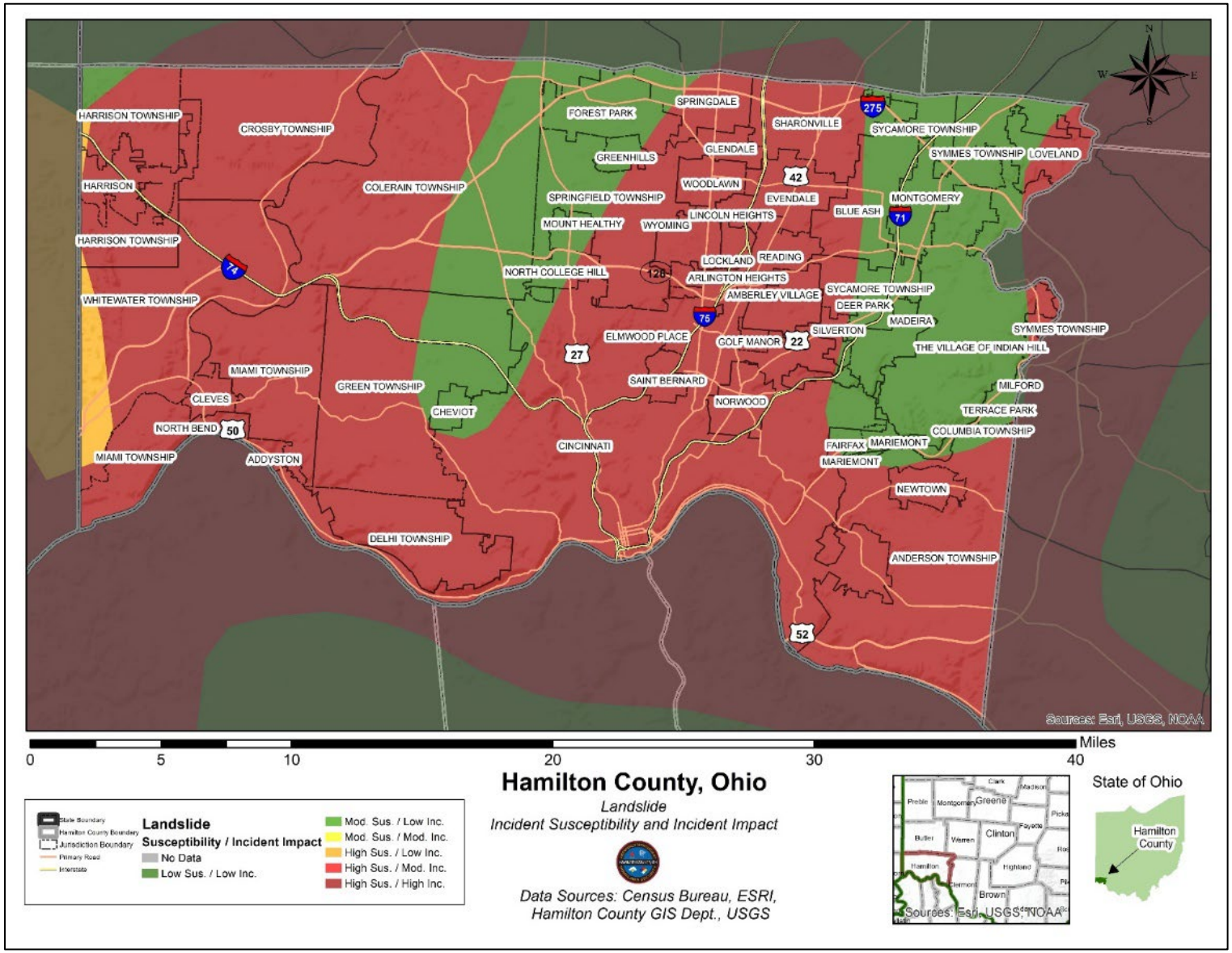


Table 106: Landslide Hazard Evaluation and Impact/Consequence Assessment						
	Probability	Consequence				Total Risk
Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Landslide	2	4	6	19	29	**33**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Mass Transportation Incident

Total Risk Score: 41

The nation's transportation system is a vast, open, interdependent networked system that moves people and goods throughout the country. This safe, efficient, and secure movement of people and goods through transportation is critical to the County. Every day, the transportation system connects cities, producers, manufacturers, and retailers, moving substantial quantities of people and goods through six different subsections, or modes. A major disruption to the following modes would be considered a major transportation incident:

- **Aviation/Air**: Incorporates aircraft, air traffic control systems, and commercial airports.
- **Highway**: Encompasses roadways and supporting infrastructure. Vehicles include automobiles, buses, motorcycles, and all types of trucks.
- **Rail**: Consists of railroads, freight cars, and locomotives.

Previous Occurrences for Mass Transportation Incident Hazard

Air

According to data from the National Transportation Safety Board (NTSB), from 1983 – 2022 there were 48 aircraft incidents in or around Cincinnati, including 11 fatalities. The incidents below outline the most recent and deadliest occurrences.

- On January 29, 2019, a helicopter collided with forested terrain about 4 miles northeast of Zaleski, Ohio. All three passengers on board died and the helicopter was destroyed.
- In June 20, 1984, a miscommunication between pilot and ground crew resulted in the wrong fuel being put into the aircraft. The aircraft departed, but shortly after attempted to return due to malfunctioning. The plane crashed in a densely wooded area, destroying the aircraft, and killing 4 people.

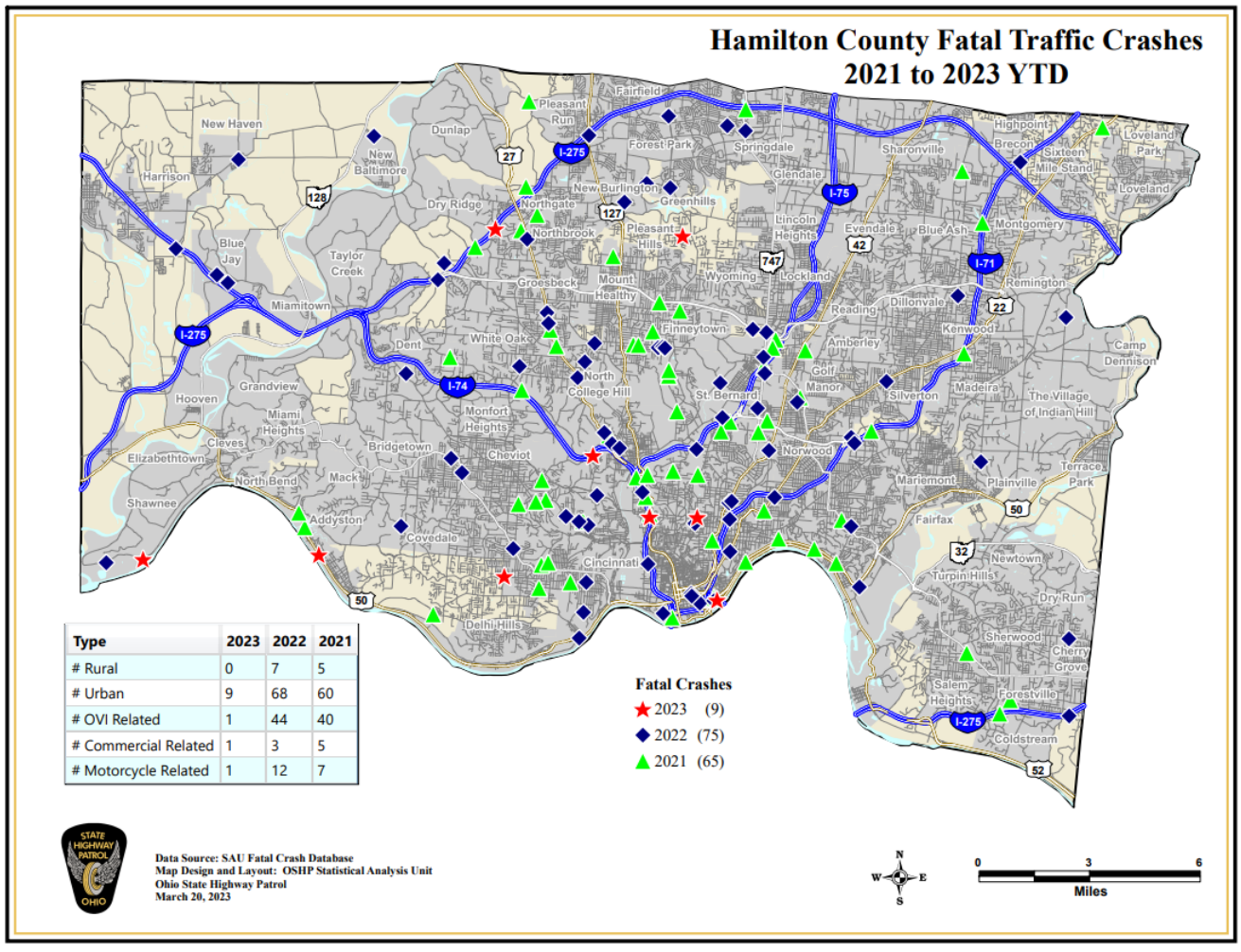
Highway

With multiple major highways crossing the county, it is no surprise that Hamilton County experiences traffic crashes on a regular basis. Most of these are not considered major and do not pose a significant threat to the county.

Table 107: Number of Crashes in Hamilton County[114]

Year	Number of Crashes	Deaths	Injuries	Year	Number of Crashes	Deaths	Injuries
2019	31,774	45	7,204	2022	28,430	25	6,251
2020	25,627	62	6,244	2023 YTD [115]	5,117	8	1,121
2021	29,379	65	6,586				

Figure 32: Hamilton County Fatal Traffic Crashes



[114] Source: Ohio Department of Public Safety electronic crash database. 2018 data is provisional as of 4/20/18.
[115] YTD – (January – March)

The Ohio State Highway Patrol (OSHP) publishes crash reports from crashes investigated by the patrol only for the last five years. Data for the last fifty years could not be located. However, if we take the averages of the data from 2012-2017 as an estimate, we can say that Hamilton County has approximately 29,573 crashes per year, resulting in an average of 50 deaths and 6,698 injuries annually.

- On December 17, 2022, there was a two-car collision in Cleves, Ohio. One vehicle rolled into the ditch and both drivers sustained injuries. [116]
- On October 4, 2022, a car crashed into an embankment, hitting one tree and rolling over. The passenger flew out of the car and sustained serious injuries and the driver did not survive. [117]
- On October 6, 2017, a four-vehicle fatal accident occurred in Mt. Healthy when an individual driving a Dodge pickup truck struck a Jeep Cherokee and pushed it into two other moving vehicles. The driver of the Jeep was killed, and one other driver was injured.
- On August 15, 2016, the Cincinnati streetcar struck a vehicle when the driver pulled into an intersection as the streetcar was approaching. The driver was taken to the hospital and treated for injuries and the vehicle suffered extensive damage.
- On January 27, 2016, a metro bus struck and killed a pedestrian and injured another at the intersection of Edwards Road and Erie Avenue. The cause of the incident was an improper left turn taken by the bus.
- On January 21, 2013, a snow squall in Hamilton County caused an 86-vehicle pile-up that resulted in one fatality and twenty casualties which shut down Interstate 275 near Colerain Township in both directions for seven hours.

Rail

- On August 12, 2019, two freight trains crashed at a switch station near Carey. Ohio.

The table below shows the data from the Federal Railroad Office of Safety Analysis for the last 5 complete years. In the last five years there have been three fatalities, all three of which involved trespassers struck by on-track equipment.

Table 108: Rail-related Accidents through January 2018

Year	Number of Crashes	Deaths	Injuries	Year	Number of Crashes	Deaths	Injuries
2018 YTD	8,177	11	1,636	2015	31,734	52	6,608
2017	32,542	54	6,780	2014	25,276	47	5,699
2016	33,604	57	7,179	2013	24,013	32	5,595

The table below showcases data as far back as 1975. From 1975-2017 (42 years) there were 1,629 railroad incidents in Hamilton County – an average of 39 incidents per year.

[116] Fox 19. (2022). Sheriff: Serious injury crash in Cleves leaves 2 people hospitalized. Sheriff: Serious injury crash in Cleves leaves 2 people hospitalized (fox19.com)

[117] WLWT5. (2022). Coroner: Man dead after car crashes into embankment in Cleves. Retrieved from: Coroner: Man dead after car crashes into embankment in Cleves (wlwt.com).

Table 109: Rail Equipment Accident/ Incident Data (2013 – 2023) [118]			
Year	Total Accidents/ Incidents	Total Fatalities	Total Nonfatal Conditions
2023 YTD*	2	0	0
2022	22	2	7
2021	34	3	15
2020	25	1	11
2019	24	0	10
2018	25	1	12
2017	22	1	16
2016	36	0	22
2015	26	0	17
2014	32	0	15
2013	23	2	9

Probability for Mass Transportation Incident Hazard

This hazard is considered to have a "Medium Probability" because significant occurrences of this hazard have periodically occurred (even though isolated or low-impact events do occur with regularity).

Geographic Location for Mass Transportation Incident Hazard

Air

Air incidents can occur in any location in the County due to the nature of air travel. Air incidents may also occur at an airport in or near Hamilton County. For instance, although the Cincinnati/Northern Kentucky International Airport (CVG) is technically not in Hamilton County, an even there would directly impact the County due to its geographic proximity, the number of Hamilton County residents who use that airport, and the number of Hamilton County resources that would be called upon during a response.

Highway

Major interstates in Hamilton County include I-71, I-74, I-75, I-275 and I-471. In addition, several U.S. highways are connected to our run through Hamilton County including US-22, US-25 (only on Clay Wade Bailey Bridge), US-27, US-42, US-50, US-52, and US-127. Multiple state highways also exist including SR-3, SR-4, SR-32, SR-125, SR-126, SR-128, SR-264, SR-561, and SR-562.

Rail

There are multiple rail lines that traverse Hamilton County.

[118] Federal Railroad Administration Office of Safety. (2023). Accident/Incident Dashboards & Data Downloads. Retrieved From: Accident/Incident Dashboards & Data Downloads | FRA (dot.gov).

Figure 33: Interstates, U.S. Routes, and State Routes in Hamilton County

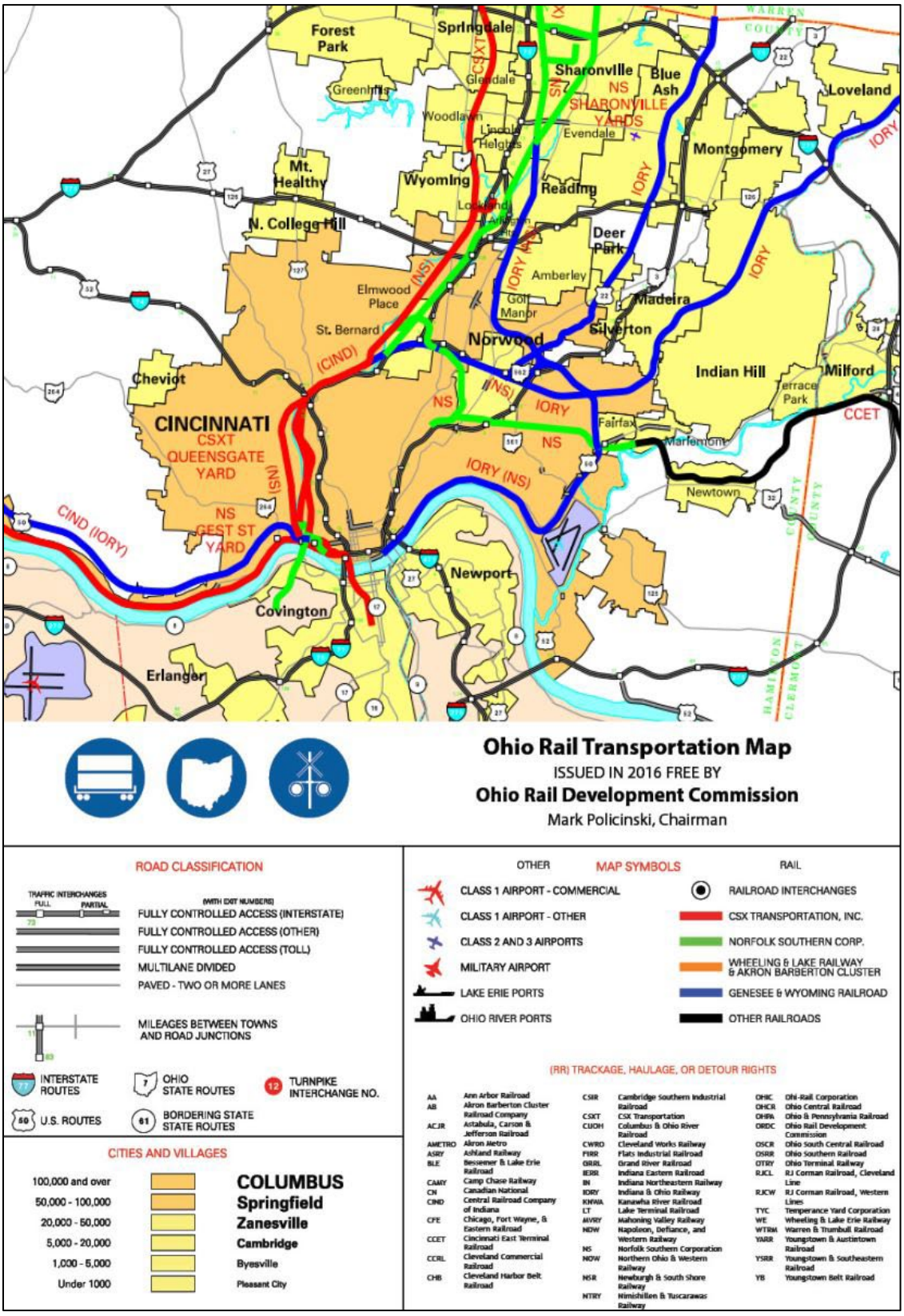


Figure 34: Rail Lines in Hamilton County



Hazard Extent for Mass Transportation Incident

Normal car crashes may only impact a few cars. Major car crashes can involve hundreds of cars (these typically occur during inclement weather). Rail crashes can impact hundreds of people, if it is a passenger train. Cargo trains may carry hazardous materials and may impact residents near rail lines following an accident. Private planes may only carry a few passengers. Commercial planes can carry hundreds of passengers.

Table 110: Major Transportation Incident Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Major Transportation Incident	County-wide	Single-vehicle accident	Commercial airline crash	The maximum extent represents a hypothetical, but realistic scenario.

Analysis of Community Development Trends

As the County's population increases, the likelihood of more significant transportation incidents is likely to increase.

Previous Changes in Development

No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. It should be noted that there has been a slight increase of population from 2018 to 2022, but this increase represents about a 1% change.

Vulnerability to Future Assets/Infrastructure for Mass Transportation Incident Hazard

Vulnerability to future structures/assets is expected to be the same as for existing structures.

Vulnerability Analysis for Mass Transportation Incident Hazard

Hamilton County will continue to respond to car crashes on a daily basis. Rail and Air incidents are far less frequent. There is less than one rail accident per week in Hamilton County, many of which are without injuries and almost never inflict death. On average, there is approximately one aviation incident per year in Hamilton County. There was one fatal aviation incident between 2018 and 2022.

Impact to Hamilton County Residents

It is highly likely that a major transportation incident would cause significant injury or even death, although it unlikely to be widespread. An event like this would most likely occur on the County roads and highways, but it is possible that bus accidents, train derailments, or other mass transportation issues could impact Hamilton County residents as well. The likelihood of an airplane transportation incident is also low, but likely to have a significant impact if it did occur.

Impact to Essential Facilities and Other Property

Essential facilities near transportation routes may be at risk, but the risk of a catastrophic transportation event disabling an essential facility is low. Building Inventory: Buildings and homes near transportation routes may be at greater risk for potential damage, though the probability is low.

Impact to Critical Infrastructure

Mass transportation incidents may impact the medium used for travel (such as roads, railways, and airports). These events may also damage nearby infrastructure.

Impact to Environment

Impact to the environment is likely to be low, unless a transportation incident results in the release of hazardous materials into the water, land, or atmosphere.

Impact to Operations

Road related transportation incidents usually impact the capacity of first responders only minimally. Of course, all first responder operations are vulnerable to transportation related incidents themselves. Should a significant air transportation incident occur, the resources of local medical, fire, and police departments would likely be drawn upon substantially.

Public Confidence in the Jurisdiction's Governance

While mass transportation incidents are likely to cause impacts to critical infrastructure and may cause significant delays for commuters, the public is not likely to have less confidence in the jurisdiction's governance resulting from a mass transportation incident, which is more likely to be perceived as a result of causes beyond the jurisdiction's control.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 111: Jurisdiction-Specific Hazard Impact/Vulnerability for Major Transportation Incident

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Blue Ash – City	Blue Ash is bordered by SR-126, IR-71, and IR-275. A major crash on any of these routes could affect traffic in the region. Also, a wide variety of HAZMAT access these roadways.
Cincinnati – City	The local highways are vulnerable to major transportation incidents.
Deer Park – City	There is a major railway with hazardous products being transported through the community. This is a concern for the city.
Forest Park – City	I-275, with trucks bypassing I-75 and 71, is an area of concern for major transportation incidents. Vehicles carrying HAZMAT travel the I-275 bypass.
Harrison – City	Interstate 74 is a major corridor susceptible to major transportation incidents.
Loveland – City	The railroad runs through the city, posing an elevated risk for railroad incidents. The West Loveland Avenue Bridge connects Hamilton County to Warren and Clermont Counties and carries over 20,000 vpd.
Madeira – City	There are many transportation areas within the city that are prone to incidents. These areas include: Lunerun Freight Path, train/rail line, I-71, and Montgomery Rd. School buses are also of great concern.
Montgomery – City	Interstate I-71, I-275, Ronald Regan Highway and US 22 all transect the community. A major incident on these roadways create grid lock.
Mt. Healthy – City	Ronald Reagan Highway (SR 126) is a major corridor that connects the western and central portions of the county and runs across the southern border of Mt. Healthy.
North College Hill – City	Ronald Reagan Highway (SR I26) is a major corridor that connects the western and central portions of the county.
Norwood – City	Highway 562 and I-71 run through the city. An estimated 250,000 vehicles utilize these roadways within a 24-hour period. Given the volume of vehicles that use these roadways, there is increased concern for a major transportation incident. There is also concern with the train storage area and the multiple rail lines that run through the city.
Reading – City	Railroads, I-75 and Ronald Reagan Highway are susceptible to major transportation incidents.
Sharonville – City	A railroad runs through the city, which poses a risk to the city.
Springdale – City	There is concern for Mass Transportation Incidents along I-275
Wyoming – City	The city's proximity to I-75 and the CSX Railway (along the eastern border), make the city vulnerable to HAZMAT incidents, such as a derailment and/or chemical spill.
Addyston – Village	Constant and repeated auto accidents at Dinning Ln and US 50 is a concern to the village. Accidents result in the temporary closing of US 50.
Arlington Heights – Village	Major transportation accidents are likely to occur on I-75.
Cleves – Village	State Route 50 is a major highway that passes through the village. A major accident would detour trucks and cars through small village streets.

Table 111: Jurisdiction-Specific Hazard Impact/Vulnerability for Major Transportation Incident	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Elmwood Place – Village	CSX and Norfolk Southern travel through Elmwood Place posing a possible risk for train derailments.
Evendale – Village	I-75 is susceptible to major transportation accidents. CSX and Norfolk Southern railways and railyard are vulnerable to railroad derailments. A major transportation incident would overwhelm local capabilities.
Glendale – Village	I-75 (over 100,000 vehicles per day) and two CSX rail lines that run through the village are both potentially vulnerable to major transportation accidents.
Golf Manor – Village	Trains passing through the village pose a risk for a major transportation incident.
Greenhills – Village	Frequent accidents and limited transportation routes in and out of town pose an issue to the Village. The Village of Greenhills is bisected by Winton Road, a 4-lane road. An estimated 40,000 to 50,000 cars travel through the Village daily along Winton Road. In 2017, there were 34 accidents on Winton Road. A large accident has the potential to limit the flow of traffic northbound or southbound to multiple communities. This may limit emergency vehicle travel and commuter travel. Detours have the potential to negatively impact residential side streets.
Lincoln Heights – Village	The Village of Lincoln Heights is situated to the immediate east of I-75, across from GE in Evendale.
Lockland – Village	Railroad and I-75 (North and South) are potentially vulnerable to major transportation accidents.
Mariemont – Village	US 50, which is used by many trucks, is at an increased risk for a major transportation incident.
Newtown – Village	SR 32 has considerable truck traffic and is vulnerable to major transportation accidents.
North Bend – Village	US 50, which is used by many trucks, is at an increased risk for a major transportation incident. CSX Railroad also travels through North Bend.
Silverton – Village	I-71 and the railroad passing through the village is a concern for major transportation incidents. Specific areas of concern are I-71 and Montgomery Road (6700 block to 7400 block).
St. Bernard – Village	St. Bernard has rail lines and I-75 that run through the jurisdiction, making the village vulnerable to major transportation incidents.
Terrace Park – Village	During a major transportation accident, a HAZMAT incident is the greatest concern. Also, US 50 (the highway that intersects the entire US) has no load restrictions. U.S. 50 runs through the center of town. Because there are no load restrictions on materials hauled within the jurisdiction, an accident or spill would be considered a major incident. This would not only affect the residents, but potentially the water supply to many parts of the county.
Woodlawn – Village	Major transportation accidents are likely to occur on major roadways.
Colerain – Township	The 2012 “white out” caused a 100-vehicle accident.
Crosby – Township	Major transportation accidents are likely to occur on State Route 128.
Delhi – Township	Delhi township, west of Neeb Road, is in the north/south flight path of the Cincinnati/Northern Kentucky International Airport. Population density in that area is 1,000-1,500 people per square mile.
Green – Township	Interstate 74 goes through northern Green Township and there is always concern for a mass transportation incident along the interstate.
Harrison – Township	Interstate 74 is a major corridor susceptible to major transportation incidents.
Springfield – Township	I-75 and Ronald Reagan Cross County Highway increase the risk of a major transportation incident occurring in the township.
Sycamore – Township	I-275, I-75, and I-71 pass through the township and pose a risk for major transportation accidents.
Symmes – Township	SR-126, Loveland Madeira Rd, along with Interstates 275 and 71, increase the risk of a major transportation accidents occurring throughout the township.

Table 111: Jurisdiction-Specific Hazard Impact/Vulnerability for Major Transportation Incident	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Whitewater – Township	Major transportation accidents are likely to occur on Lawrenceburg "S" bend as well as northbound I-275 to westbound I-74. Tractor trailers flip about five times a year. The SR 128 exit from I-275 is a high-risk area for major transportation accidents.

Summary Vulnerability Assessment

Mass transportation incidents can cause severe traffic congestion, as well as injuries and death. Transportation accidents can occur due to car, rail, and air crashes. Car crashes are a common occurrence across the country, but most only involve a few cars and are not considered major. Most rail and air accidents would be considered major considering they happen far less often, and these methods of travel often include large amounts of people. For this planning effort, it was not possible to analyze the number of lives or amount of property exposed to the impacts of a major transportation incident.

Table 112: Mass Transportation Incident Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Mass Transportation Incident	2	4	9	24	37	**41**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Public Health Emergency

Total Risk Score: 51

A public health emergency is a widespread and/or severe epidemic, incident of contamination or other situation that presents a danger to, or otherwise negatively impacts, the general health and well-being of the public. Public health emergencies can result from several causes such as food borne illness, waterborne pathogens, loss of sewer/water service and epidemics of communicable diseases. In recent years, the risk of a public health emergency resulting from an intentional release of a chemical, biological, or radiological agent has become more apparent. Pandemic influenza represents one of the greatest threats within this hazard category, and historically has had devastating impacts globally.

Pandemic Influenza

Influenza is a virus that occurs on a seasonal basis and presents itself in one of many different genetic combinations. Influenza has been classified into three types of viruses: A, B and C. The A and B viruses are responsible for seasonal epidemic spikes and cause illness in 5 to 20 percent of the population. The C virus is less virulent and causes only mild respiratory illness. Once the influenza is introduced to a host, it can replicate itself billions of times resulting in illness. Due to its persistence in the population and its seasonal nature, humans have developed a natural resistance to many of the genetic variations of the influenza virus. However, when a novel genetic variation presents itself in a population, humans will be absent their natural resistance to the virus. This will allow the virus to spread rapidly from host to host causing larger than normal morbidity and mortality rates. This occurrence is classified as pandemic influenza.

Typically, influenza A circulates within human and animal populations such as birds and pigs. Due to its diverse population of hosts, influenza A has the proclivity to acquire genetic material and mutate into different strains. This process is called virus reassortment. Virus reassortment can occur in two ways. The first is when a virus acquires genetic material and mutates within the animal host and the second is when the virus mutates within human populations. Depending on the level of mutation, either of these methods can contribute to making a virus either more genetically novel or allow for easier transmission between hosts.

Two proteins, hemagglutinin, and neuraminidase, compose part of the influenza virus. In influenza A there are 11 combinations of hemagglutinin and nine combinations of neuraminidase that compose a particular strain of the virus. During the reassortment process, one of these two proteins will change resulting in a slightly different genetic strain. Since only one protein changed, the body will still have a partial immunity to the strain. It will likely cause illness, but the immune system typically mitigates the effect. This process is referred to as antigen drift. However, in certain instances, both proteins will change resulting in a completely novel strain. This is what occurs during a pandemic. The body will not have immunity to the new strain; consequently, the result will be increased transmission and a possible higher degree of virulence.

Therefore, when influenza A strain is introduced to animal populations such as birds or pigs, genetic reassortment leads to antigen drift which increases the likelihood of novel strains. This is why certain pandemics originate in birds and pigs. An example of this is seen in the current H5N1 “avian influenza” strain and the recent H1N1 “swine influenza” strain.

While the virulence of these strains differs dramatically, both are considered highly transmittable due to the novel nature of the strain and the lack of human immunity. Although there is no way to predict where a pandemic will originate, they are thought to occur in areas where there is a higher degree of interaction between animal and human hosts.

Pandemics typically occur in waves lasting anywhere from six to eight weeks. As immunity is developed within a population, the virus will recede for a period of 8-12 weeks. The virus will then reemerge slightly mutated for another wave lasting six to eight weeks. This process repeats during a pandemic two to three times.

Symptoms of pandemic influenza vary depending on the virulence of the strain but mirror typical seasonal symptoms including, fever, coughing, sore throat, congestion headaches, soreness in the muscles and joints, chills and fatigue. During a pandemic, these symptoms can be severe resulting in hospitalizations and death. The severity of pandemic influenza has varied in the past, but estimates range from an infection rate of 30 to 40 percent. Mortality rates will depend on the virulence of the strain. The 1918 strain has an estimated mortality rate of three percent of infected persons.

Special populations to consider are those with weakened immunity such as infants and the elderly, those with autoimmune disease, and individuals with respiratory complications. However, pandemics in the past have also affected those with healthy immunity such as young adults because of the massive immune response certain strains have generated.

The most effective strategy to combating pandemic influenza is vaccination. However, since a pandemic is caused by a novel strain, it is likely vaccine will not be available for the first wave and sometimes not until the middle of the second wave. Alternate strategies for mitigation include the use of antiviral medication, antibiotics for bacterial pneumonia often associated with influenza, social distancing, and public health hygienic practices.

Previous Occurrences for Public Health Emergency Hazard

Three pandemics occurred in the 20th century: 1918, 1957 and 1957. While two occurred in the 21st century: 2009, and 2019.

- **2019 (The Coronavirus of 2019 (COVID19))** – The Coronavirus of 19 began in December 2019 and originated in China, spreading globally within three months. The virus was new, no one had immunity and there was no medication to cure it or vaccination to prevent it from spreading. COVID 19 is spread person to person through droplets or aerosols, airborne transmission, or surface transmission. In the beginning phase, many were hospitalized, and fatalities skyrocketed, death rates globally were unprecedented. The best solution before the vaccine was made available, was to slow/stop the movement of people. This resulted in mandatory stay-at-home orders. Schools for all grade levels transitioned to fully online and all non-essential business were closed for prolonged periods of time. The global economy tanked and there was a supply shortage in personal protective equipment, anything related to sanitizing areas, and food. There has also been a shortage of employees because front line workers experienced burnout from working

24 hours, 7 days a week, high rates of fatality in some communities, and the increase of entrepreneurship for internet-based businesses and remote jobs that allow people to travel and work anywhere in the world. As of March 23, 2023, the World Health Organization reported 761,071,826 confirmed cases of COVID-19, including 6,879,677 deaths. There were two disaster declarations, DR-4507-OH and EM-3457-OH.

- HCPH disease investigators and epidemiologists frequently respond to Pertussis, Shigella, Legionella, Salmonella, Scabies, Norovirus, Influenza and GI outbreaks on an annual basis.
- In October 2014, a citizen in the United States contracted Ebola, which lead to extensive coordination and planning with local, state and federal partners. A county and regional Ebola Response Plan was developed.
- In October 2012, patients of Cincinnati Pain Management Clinic physicians were identified as having received injections of a potentially contaminated medication that was linked to an outbreak of fungal meningitis.
- In recent years, Hamilton County has increasingly experienced the harms associated with the opioid epidemic. Unintentional overdoses and deaths and reported HIV and hepatitis C infections among Hamilton County residents continue to rise. Once data are finalized, 2017 will go down as the worst year on record for overdose deaths in Hamilton County exceeding 400 deaths among county residents; approximately double the number reported just a few years ago in 2013. Furthermore, new diagnoses of HIV among county residents have increased by 39 percent from 137 cases in 2016 to 191 cases in 2017. The proportion of cases identifying injection drug use (IDU) as a risk factor increased from 9 percent of cases in 2016 to 22 percent in 2017. Finally, the county has correspondingly observed significant increases in new diagnoses of hepatitis C in recent years with available evidence also indicating IDU as the leading risk factor among these cases. New diagnoses of hepatitis C among Hamilton County residents averaged around 1,100 cases per year during 2012-2014 and now average over 1,600 cases per year during 2015-2017: an increase of over 40 percent.

1918 (Spanish Flu)-The influenza pandemic of 1918-1919 was one of the deadliest epidemics in history, causing influenza-related symptoms in more than 20 percent of the world's population and claiming more than 21 million lives worldwide. It spread along trade routes and shipping lines. Outbreaks swept through North America, Europe, Asia, Africa, Brazil, and the South Pacific. The Great War (i.e., World War I), with its mass movements of men in armies and aboard ships, probably aided in its rapid diffusion and attack. The origins of the deadly flu disease were unknown but widely speculated upon. Some of the allies thought of the epidemic as a biological warfare tool of the Germans. Many thought it was a result of trench warfare, the use of mustard gases and the generated "smoke and fumes" of the war. A national campaign began using the ready rhetoric of war to fight the new enemy of microscopic proportions. A study attempted to reason why the disease had been so devastating in certain localized regions, looking at the climate, the weather, and the racial composition of cities. They found humidity to be linked with more severe epidemics.

1957 (Asian Pandemic Flu-H2N2)-The 1957 Asian Flu Pandemic was much milder than that of the 1918 occurrence. The global death toll was estimated to be around 2 million. In 1957, the Asian flu pandemic resulted in about 70,000 deaths in the United States. Immunity to this strain was rare in people less than 65 years of age, and a pandemic was predicted. In preparation, vaccine production began in late May 1957, and health officials increased surveillance for flu outbreaks. The 1957 pandemic is instructive in that the first US cases occurred in June, but no community outbreaks occurred until August and the first wave of illness peaked in October. The 1957 pandemic was associated with the emergence and spread of the H2N2 virus (this virus subtype stopped circulating in 1968). Vaccine was available in limited supply by August 1957.

1968 (Hong Kong Flu-H3N2)-The 1968 pandemic was milder than that of 1957, and spread more slowly than previous pandemics, apart from in the Unites States, where it was introduced by troops returning home from Vietnam. There the disease spread from California to the rest of America in just three months, affecting mostly the very old and those with underlying medical conditions. But in Europe symptoms were relatively mild, and the death count not as high as in previous epidemics. Between one and four million people are estimated to have died worldwide, and around 30,000 people were killed in England and Wales. Some experts believe the 1968 pandemic may have been milder than the previous two because those exposed to the 1957 strain may have built up a partial protection against the virus.

2009 (Swine Flu-H1N1)-H1N1 was first detected in the United States in April 2009. This virus was a unique combination of influenza virus genes never previously identified in either animals or people. The virus genes were a combination of genes most closely related to North American swine-lineage H1N1 and Eurasian lineage swine-origin H1N1 influenza viruses. Because of this, initial reports referred to the virus as a swine origin influenza virus. However, investigations of initial human cases did not identify exposures to pigs and quickly it became apparent that this new virus was circulating among humans and not among U.S. pig herds. The CDC estimates about 55 million people were infected, 246,000 H1N1-related hospitalizations, and 11,160 H1N1-related deaths in 2009.

Probability for Public Health Emergency Hazard

This hazard is considered to be of "Medium Probability" because significant occurrences of this hazard have occurred on occasion. Some pandemic events of the past have even been globally significant, particularly the Spanish flu pandemic incident of 1918 and the Coronavirus disease outbreak of 2019.

Geographic Location for Public Health Emergency Hazard

There is no geographic location for this hazard, beyond that outbreaks typically begin in areas with high populations. In contrast to seasonal influenza when it occurs during the late fall and early winter months, pandemic influenza can occur during any month or season.

Hazard Extent for Public Health Emergency

Pandemic Influenza generally occurs in multiple waves (2 to 3) that last a period of six to eight weeks each. Generally, each wave will occur approximately 12 weeks apart.

Once a novel strain of influenza can achieve human to human transmission, the pandemic is expected to spread rapidly and across geographic barriers.

Although the likelihood of pandemic is a certainty, their frequency is difficult to predict. In the 20th century, there were three influenza pandemics. In the 21st century, there has been one to date. Pandemic influenza is characterized based on its ability to spread, not its virulence. Pandemics in the past have ranged from severe to mild.

Table 113: Public Health Emergency Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Public Health Emergency	County-wide	Minor illness	Epidemic	1918 Spanish Flu

Analysis of Community Development Trends

It is anticipated that this hazard will become more likely to occur in the future as the County population ages and increases. Warming trends have allowed a variety of previously tropical and subtropical diseases to expand their range northward. As the warming trends intensify, new diseases and vectors will arrive in Cincinnati.

Previous Changes in Development

No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard.

Vulnerability to Future Assets/Infrastructure for Public Health Emergency Hazard

No future assets/infrastructure are exposed to damage due to a public health emergency.

Vulnerability Analysis for Public Health Emergency Hazard

Public health emergencies (like a pandemic of influenza) will have a major impact on society. In the United States, between 15 and 60 million people contract the influenza each year. This stresses the healthcare system to attend to the ill and results in economic loss due to missed work and extra costs associated with treatment. In addition, influenza can lead to other health complications such as bacterial pneumonia. The actual consequence of such an incident will be dependent upon the location, scale, magnitude, and extent of the incident in addition to the aforementioned vulnerabilities and conditions described above.

Impact to Hamilton County Residents

Due to the nature of public health emergencies, impacts from this event tend to be more widespread rather than confined to a specific location. It is important to note that a public health emergency may originate outside of Hamilton County, yet still impacts the population of the county. Those most at risk for influenza in Hamilton County include:

- Children younger than 2 years old*
- Adults 65 years and older

- Pregnant women and women up to 2 weeks from end of pregnancy
- People with certain chronic medical conditions (such as asthma, heart failure, chronic lung disease) and people with a weak immune system (due to illnesses such as diabetes and HIV)
- People younger than 19 years of age who are receiving long-term aspirin therapy
- Those who do have medical insurance
- Non-English speakers

*Children who are 2 years through 4 years of age also have a higher rate of complications compared to older children, although the risk for these children is lower than the risk for children younger than 2 years.

Impact to Essential Facilities and Other Properties

Essential facilities will not be physically impacted by this hazard. They may be impacted by the loss of workers who are ill or need to care for others who are ill. Building Inventory: No existing buildings are exposed to damage due to this hazard.

Impact to Critical Infrastructure

Infrastructure is usually not directly impacted by this hazard. Similarly, essential facilities, maintenance and repair crews may be understaffed as they fall ill or need to care for others who are ill. Economic impacts from this hazard can be severe.

Impact to Environment

This hazard typically does not directly impact the environment, although it is possible that certain elements within the environment could contribute to a public health emergency.

Impact to Operations

During a public health emergency, local hospitals and care facilities will likely find themselves with a deluge of new patients to attend to, potentially overwhelming existing capabilities and requiring regional, state, or even federal aid. A pandemic would also impact staffing with an estimated 30% staff that may not show up to work because they are sick or caring for the sick. Police forces may see an increase in crime if civil unrest begins to occur as panic spreads.

Public Confidence in the Jurisdiction's Governance

As demonstrated by COVID-19, public opinion regarding the jurisdiction's handling of a public health emergency can vary significantly among residents. The greater the impact of the public health emergency on the day-to-day lives of residents, the more likely a portion of the public will lose confidence in the jurisdiction's governance.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Table 114: Jurisdiction-Specific Hazard Impact/Vulnerability for a Public Health Emergency	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Cincinnati – City	Low income and sensitive populations are especially vulnerable to public health emergencies.
Deer Park – City	Nursing and retirement homes are vulnerable to public health emergencies. The city will rely on the County Health Declaration (schools) and Public Health Distribution Plan.
Forest Park – City	Flu outbreak or biological terrorist incident is a concern for the city. High schools and Winton House are especially vulnerable to public health emergencies.
Madeira – City	Schools and nursing homes are most vulnerable during public health emergencies.
Montgomery – City	Bethesda North, is both an asset to address public health concerns, but may also attract residents seeking care during a health crisis.
Norwood -City	The aging population in the city represents a unique concern for the city during a public health emergency. There is also an influx of socially vulnerable residents (primarily renters) that may be more vulnerable during a public health crisis.
Golf Manor – Village	The aging population in the village are more vulnerable during a public health emergency.
Lincoln Heights – Village	There is a healthcare facility in the village that has been identified as a point of distribution for vaccination disbursement. As such, this is both an asset to address public health concerns but may also attract residents seeking care during a health crisis.
Mariemont – Village	The village is a designated POD site. As such, this is both an asset to address public health concerns but may also attract residents seeking care during a health crisis.
Silverton – Village	Nursing homes and retirement communities are most vulnerable during public health emergencies.
Delhi – Township	Delhi Township has a university and several middle and elementary schools in the jurisdiction. The potential for a public health crisis (especially in these locations) is a real concern for the township.
Sycamore – Township	Jewish Hospital on Kenwood Road and East Galbraith could be overwhelmed during a public health emergency.

Summary Vulnerability Assessment

Potential structural dollar loss due to a public health emergency is estimated to be zero. Public health emergencies are an obvious threat to human health and safety. A public health emergency can take many forms and spread by various means. As a result, it is not feasible to determine a death or injury rate for this hazard.

Economic impacts from this hazard can be severe if the source is infrastructure related (i.e., if improvements are needed to the public water supply system). However, it is more likely that economic impacts will result through lost wages and medical expenses for impacted persons. Additional impact may result if a business is determined to be the source of the emergency, (i.e., a restaurant must close).

Table 115: Public Health Emergency Hazard Evaluation and Impact/Consequence Assessment						
	Probability	Consequence				Total Risk
Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Public Health Emergency	2	8	12	27	47	**51**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Severe Thunderstorm

Total Risk Score: 61

Severe thunderstorms are defined as thunderstorms with one or more of the following characteristics: strong winds, large damaging hail, or frequent lightning. Severe thunderstorms most frequently occur in Ohio during the spring and summer but can occur any month of the year at any time of day. A severe thunderstorm's impacts can be localized or can be widespread in nature. A thunderstorm is classified as severe when it meets one or more of the following criteria:

- Hail of diameter 0.75 inches or higher
- Frequent and dangerous lightning
- Wind speeds equal to or greater than 58 miles an hour

Hail

Hail is a product of a strong thunderstorm. Hail usually falls near the center of a storm; however, strong winds occurring at high altitudes in the thunderstorm can blow the hailstones away from the storm center, resulting in damage in other areas near the storm. Hailstones range from pea-sized to baseball-sized, but hailstones larger than softballs have been reported on rare occasions.

Lightning

Lightning is the discharge of atmospheric electricity from a thunderstorm. It can travel at speeds up to 140,000 mph and reach temperatures approaching 54,000 degrees. Lightning is often perceived as a minor hazard; in reality, lightning causes damage to many structures and kills, or severely injures, numerous people in the United States. It is estimated that there are 16 million lightning storms worldwide every year.

Severe Winds (Straight-Line Winds)

Straight-line winds from thunderstorms are a common occurrence across Ohio. Straight-line winds can cause damage to homes, businesses, power lines, and agricultural areas, and may require temporary sheltering of individuals who are without power for extended periods of time.

Previous Occurrences for Severe Thunderstorm Hazard

Hail

The NCEI database reported 31 hailstorms in Hamilton County from January 1, 2018 -December 31, 2022. Hailstorms occur nearly every year in the late spring and early summer. All recorded events have had minimal impact, with hail 1.25 inches diameter or less. There have been no injuries or fatalities, and approximately $1,000 in property damage, reported for hail events in the past five years. The number of events, size of hail, and property damage has decreased since the last five-year analysis period. On April 17, 2018, there was disaster declaration (DR-4360-OH) for severe storms, landslides, and mudslides and the incident period was February 14, 2018 – February 25, 2018. The total public assistance grants obligated was $66,595,216.18. This event was not recorded in NCEI. Note: NCEI data do not always provide detailed damage on a county-by-county basis. Therefore, some dollar estimates may be regional. Although there have been many hail events, they have not created any injuries or fatalities and the property damage and crop damage has been minimal. The table below reflects the event(s) that have caused monetary damage to the county.

Table 116: Severe Thunderstorm Events

Location	Date	Time	Type	Magnitude	Property Damage
Cherry Grove [Anderson Township]	5/23/2020	16:58	Hail	1.25 In.	1.00K
Totals:					**1.00K**

*NCEI records are estimates of damage compiled by the National Weather Service from various local, state, and federal sources. These estimates, however, are often preliminary in nature and may not match the final assessment of economic and property losses related to a given weather event.

Lightning

Lightning occurs every year in Hamilton County; however, NCEI did not report any significant lightning strikes in Hamilton County in the last five years.

Thunderstorm Wind

The NCEI database identified 83 Thunderstorm Wind events reported from 2018 – July 06, 2022, most with minimal impact. There were several events causing over $5,000 in property damage. On May 21, 2022, trees fell on some houses and several power lines were down. It resulted in $20,000 in property damage. Overall, there has been approximately $108,000 in property damages.

As shown in the table below, windstorms historically have occurred year-round, with the greatest frequency and damage between May and July. The following table includes major events that have occurred within the county which caused property damage in Hamilton County.

Table 117: Thunderstorm Wind Hazard Events				
Location	Date	Type	Mag	Property Damage
Silverton	3/14/2019	Thunderstorm Wind	50 Kts. EG	10.00K
Deer Park	7/30/2019	Thunderstorm Wind	50 Kts. EG	5.00K
Silverton	8/20/2019	Thunderstorm Wind	50 Kts. EG	5.00K
Harrison	8/30/2019	Thunderstorm Wind	50 Kts. EG	15.00K
North College Hill	4/8/2020	Thunderstorm Wind	50 Kts. EG	10.00K
Silverton	4/8/2020	Thunderstorm Wind	50 Kts. EG	10.00K
Silverton	4/8/2020	Thunderstorm Wind	50 Kts. EG	10.00K
Cincinnati	7/11/2020	Thunderstorm Wind	50 Kts. EG	7.00K
Norwood	5/19/2022	Thunderstorm Wind	50 Kts. EG	8.00K
Harrison	5/21/2022	Thunderstorm Wind	50 Kts. EG	20.00K
Evendale	6/13/2022	Thunderstorm Wind	50 Kts. EG	8.00K
Totals:				**108.00K**

There have been thousands of occurrences of thunderstorm wind, hail, and lightning events in Hamilton County during the past 50 years according to the NCEI database. The information below references the 13 occurrences that impacted the county with property damages over $50,000. The NCEI database reported more than 500 thunderstorm hazards (hail, lightning, and thunderstorm wind events) in Hamilton County since 1995. Although common, this type of storm can cause significant property damage.

Table 118: Thunderstorm Wind Hazard Events – 50 Years				
Location	Date	Type	Magnitude	Property Damage
Hamilton County	5/28/1995	Thunderstorm Wind	0 Kts.	75.00K
Blue Ash	7/7/1996	Lightning		150.00K
Cincinnati	7/7/1996	Lightning		50.00K
Cincinnati	1/5/1997	Thunderstorm Wind	65 Kts.	70.00K
Cincinnati	1/5/1997	Lightning		50.00K
Delhi	7/2/1997	Hail	2.75 In.	100.00K
Hamilton County	8/17/1997	Thunderstorm Wind	60 Kts.	100.00K
Cincinnati	2/18/2000	Lightning		100.00K
Springdale	7/14/2000	Thunderstorm Wind	60 Kts. E	500.00K
Hamilton County	8/9/2000	Thunderstorm Wind	50 Kts. E	50.00K
Cincinnati	8/9/2000	Lightning		80.00K
Hamilton County	6/21/2001	Thunderstorm Wind	55 Kts. E	50.00K
Blue Ash	4/19/2002	Hail	0.75 In.	5.000M
Totals:				**6.375M**

NCEI recorded thunderstorm wind, lightning, and hail events for Hamilton County are shown in the tables above.

Probability for Severe Thunderstorm Hazard

This hazard is considered to have a "High Probability" because significant occurrences of this hazard have occasionally occurred in the County and will likely occur again in the future. Events with the potential to cause lower-level impacts occur with high regularity as part of expected weather patterns.

Geographic Location for Severe Thunderstorm Hazard

The entire county has the same risk for occurrence of thunderstorm hazards. They can occur at any location within the county.

Hazard Extent for Severe Thunderstorm

The extent of the historical thunderstorms varies in terms of the extent of the storm, the wind speed, and the size of hail stones. Thunderstorms can occur at any location within the county.

Table 119: Severe Thunderstorm Hazard Extent

Hazard Type	Extent (based on historical events)		Comments
	Minimum	Maximum	
Hail	0-inch hail	2-inch hail	2-inch hail has occurred on two different occasions
Lightning	N/A	N/A	
Thunderstorm Wind	0 kts	87 kts	This major storm occurred on July 13, 2016.

Analysis of Community Development Trends

Preparing for severe storms will be enhanced if officials sponsor a wide range of programs and initiatives to address the overall safety of county residents. New structures need to be built with more sturdy construction, and those structures already in place need to be hardened to lessen the potential impacts of severe weather. Community warning sirens to provide warning of approaching storms are also vital to preventing the loss of property and ensuring the safety of Hamilton County residents.

Previous Changes in Development

No significant or notable developmental (construction, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. The frequency and severity of thunderstorms are increasing simultaneously with the changes in climate. The warmer the air, the more moisture it holds, increasing the likelihood of thunderstorms. Duke Energy continues to bury powerlines to mitigate the hazard.

Vulnerability to Future Assets/Infrastructure for Severe Thunderstorm Hazard

All future development within the county and all communities will remain vulnerable to these events.

Vulnerability Analysis for Severe Thunderstorm Hazard

Severe thunderstorms are an equally distributed threat across the entire jurisdiction; therefore, the entire county's population and all buildings are vulnerable to a severe thunderstorm, and the

same impacts can be expected within the affected area. This plan will therefore consider all buildings within the county as vulnerable.

Impact to Hamilton County Residents

Thunderstorm hazards are not usually life threatening. The impact to Hamilton County residents will likely, be limited to minor property damage to their homes or vehicles due to minor flooding or hail. It is possible, however, that lightning strikes could cause substantial damage or injury in Hamilton County directly or indirectly (i.e., trees or tree limbs have been known to fall onto property due to lightning or wind). Other impacts to residents include power outages, obscured and potentially dangerous driving conditions, or temporary roadway obstructions.

Impact to Essential Facilities and Other Property

All facilities are vulnerable to severe thunderstorms. An essential or critical facility will encounter many of the same impacts as any other building within the jurisdiction. These impacts include structural failure, damaging debris (trees or limbs), roofs blown off or windows broken by hail or high winds, fires caused by lightning, and loss of building functionality (e.g., a damaged police station will no longer be able to serve the community).

Building Inventory: Impacts like those discussed for critical facilities can be expected for the buildings within the county. These impacts include structural failure, damaging debris (trees or limbs), roofs blown off or windows broken by hail or high winds, fires caused by lightning, and loss of building functionality (e.g., a damaged home will no longer be habitable, causing residents to seek shelter).

Impact to Critical Infrastructure

During a severe thunderstorm, the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads, and bridges. Because the county's entire infrastructure is equally vulnerable, it is important to emphasize that any number of these structures could become damaged during a severe thunderstorm. The impacts to these structures include broken, failed, or impassable roadways; broken or failed utility lines (e.g., loss of power or gas to community); or railway failure from broken or impassable railways. Bridges could fail or become impassable, causing risk to traffic.

Impact to Environment

Most thunderstorm events are not likely to have any serious impact on the environment. Lightning and hail could damage trees and vegetation, but such damage is not likely to be severe. It is possible that numerous periods of heavy rainfall could cause or exacerbate flooding and erosion problems in some areas.

Impact to Operations

Barring an unlikely scenario in which major roads or critical facilities are damaged, most operations should be able to function without major impediment during and after this hazard.

Public Confidence in the Jurisdiction's Governance

Severe thunderstorms are largely viewed as routine natural occurrences beyond the control of the local jurisdiction. The most likely essential service to be disrupted is power utilities which are

privately owned and thus even with interruptions to essential services, there is not likely to be less public confidence in the jurisdiction's governance because of severe thunderstorms.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 120: Jurisdiction-Specific Hazard Impact/Vulnerability for Severe Thunderstorm

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cincinnati – City	Severe storm's impact to Cincinnati includes high wind, severe thunderstorm, severe snow fall, and hail. Utilities and property is vulnerable to severe storm related impacts that can be wide spread due to the urban density of the city.
Deer Park – City	Storm/wind damage to all businesses/homes is a possibility with severe thunderstorms. It could affect the entire city. There is concern of massive power outage; impacting retirement homes, schools, and churches.
Forest Park – City	Tree damage and power failure (due to downed power lines) may result in a severe thunderstorm incident. Individuals attending outdoor events, such as concerts, are also at risk.
Wyoming – City	Severe thunderstorms can cause downed powerlines and home damage which are a concern to the city.
Glendale – Village	Many old large trees throughout village are prone to damage from severe thunderstorm.
Golf Manor – Village	Storm runoff throughout the village, older tree destruction, and above ground utility damage from trees are concerns during severe thunderstorm events.
North Bend – Village	High winds with the potential for toppled trees are the primary concern.
Silverton – Village	Storm/wind may cause damage to all businesses and residents within the village.
Delhi – Township	The jurisdiction would experience a significant loss of utilities during a major incident. Specifically, geriatric housing and extended care facilities would be on backup power or need assistance transferring patients.

Summary Vulnerability Assessment

A GIS analysis was not completed for thunderstorms because the widespread extent of such a hazard makes it difficult to accurately model outcomes.

Potential Dollar Losses for Severe Thunderstorm

To determine dollar losses for a thunderstorm hazard, the available NCEI hazard information was condensed to include only thunderstorm hazards that occurred since 1990. In total, Hamilton County has had 632 recorded thunderstorm (lightning, hail, winds) events with a total property damage of $14,689,000 and $500,250 in crop damages from 1990 -December 2022. Most years in the data have low losses and a few years have extremely high losses. As a result, the average potential dollar losses for a future event estimate to $9,818.

Table 121: Severe Thunderstorm Hazard Evaluation and Impact/Consequence Assessment						
	Probability	Consequence				Total Risk
Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Severe Thunderstorm	3	4	14	21	39	**61**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Severe Winter Storm

Total Risk Score: 71

Severe winter storms consist of various forms of precipitation and strong weather conditions. This may include one or more of the following: freezing rain, sleet, heavy snow, blizzards, icy roadways, extremely low temperatures, and strong winds. These conditions can cause human health risks such as frostbite, hypothermia, and death.

Ice (Glazing) and Sleet Storms

Ice or sleet, even in the smallest quantities, can result in hazardous driving conditions and can be a significant cause of property damage. Sleet can be easily identified as frozen raindrops. Sleet does not stick to trees and wires. The most damaging winter storms in Indiana have been ice storms. Ice storms are the result of cold rain that freezes on contact with objects having a temperature below freezing. Ice storms occur when moisture-laden gulf air converges with the northern jet stream causing strong winds and heavy precipitation. This precipitation takes the form of freezing rain coating power lines, communication lines, and trees with heavy ice. The winds will then cause the overburdened limbs and cables to snap, leaving large sectors of the population without power, heat, or communication. Falling trees and limbs can also cause building damage during an ice storm. In the past few decades numerous ice storm events have occurred in Ohio.

Snowstorms

Significant snowstorms are characterized by the rapid accumulation of snow, often accompanied by high winds, cold temperatures, and low visibility. A blizzard is categorized as a snowstorm with winds of 35 miles per hour or greater and/or visibility of less than one-quarter mile for three or more hours. The strong winds during a blizzard blow about falling and already existing snow, creating poor visibility and impassable roadways. Blizzards have the potential to result in property damage. Blizzard conditions not only cause power outages and loss of communication, but also make transportation difficult. The blowing of snow can reduce visibility to less than one-quarter mile, and the resulting disorientation makes even travelling by foot dangerous if not deadly.

Previous Occurrences for Severe Winter Storm

The NCEI database identified 46 winter weather events for Hamilton County from January 1, 2017 - December 31, 2022. There were no events that caused fatalities, injuries, or property damage.

Significant events in history also include two statewide blizzards that struck Ohio in the last week of January in both 1977 and 1978. Across the state there were approximately 20 and 51 deaths, respectively. In 1998, 18.5 inches fell over three days, February 4-6. It led to hundreds of car accidents and flights being canceled at Cincinnati/Northern Kentucky International Airport. The NCEI winter weather events (Frost/Freeze, Heavy Snow, Ice Storm, Sleet, Winter Storm, Winter Weather) occurring in Hamilton County are listed in table below. The table defines Hamilton (Zone) as portions of Hamilton County that were affected by severe winter storms.

Table 122: Severe Winter Storm Hazard Events

Location	Date	Type
HAMILTON (ZONE)	1/5/2017	Winter Weather
HAMILTON (ZONE)	2/8/2017	Winter Weather
HAMILTON (ZONE)	3/4/2017	Winter Weather
HAMILTON (ZONE)	3/13/2017	Winter Weather
HAMILTON (ZONE)	12/9/2017	Winter Weather
HAMILTON (ZONE)	12/24/2017	Winter Weather
HAMILTON (ZONE)	12/29/2017	Winter Weather
HAMILTON (ZONE)	1/12/2018	Winter Weather
HAMILTON (ZONE)	1/15/2018	Winter Weather
HAMILTON (ZONE)	2/6/2018	Winter Storm
HAMILTON (ZONE)	2/17/2018	Winter Weather
HAMILTON (ZONE)	3/7/2018	Winter Weather
HAMILTON (ZONE)	3/20/2018	Winter Storm
HAMILTON (ZONE)	3/24/2018	Winter Storm
HAMILTON (ZONE)	4/1/2018	Winter Weather
HAMILTON (ZONE)	4/6/2018	Winter Weather
HAMILTON (ZONE)	11/14/2018	Ice Storm
HAMILTON (ZONE)	1/12/2019	Winter Storm
HAMILTON (ZONE)	1/19/2019	Winter Storm
HAMILTON (ZONE)	1/30/2019	Extreme Cold/wind Chill
HAMILTON (ZONE)	2/1/2019	Winter Weather
HAMILTON (ZONE)	2/10/2019	Winter Weather
HAMILTON (ZONE)	2/20/2019	Winter Weather
HAMILTON (ZONE)	3/3/2019	Winter Weather
HAMILTON (ZONE)	11/11/2019	Winter Weather
HAMILTON (ZONE)	12/15/2019	Winter Weather
HAMILTON (ZONE)	2/6/2020	Winter Weather
HAMILTON (ZONE)	2/8/2020	Winter Weather
HAMILTON (ZONE)	2/27/2020	Winter Weather
HAMILTON (ZONE)	11/30/2020	Winter Weather

Table 122: Severe Winter Storm Hazard Events		
Location	Date	Type
HAMILTON (ZONE)	12/1/2020	Winter Weather
HAMILTON (ZONE)	12/16/2020	Winter Weather
HAMILTON (ZONE)	12/24/2020	Winter Weather
HAMILTON (ZONE)	1/27/2021	Winter Weather
HAMILTON (ZONE)	1/30/2021	Winter Weather
HAMILTON (ZONE)	2/8/2021	Winter Storm
HAMILTON (ZONE)	2/10/2021	Winter Weather
HAMILTON (ZONE)	2/15/2021	Winter Storm
HAMILTON (ZONE)	4/20/2021	Winter Weather
HAMILTON (ZONE)	1/6/2022	Winter Weather
HAMILTON (ZONE)	1/16/2022	Winter Weather
HAMILTON (ZONE)	1/28/2022	Winter Weather
HAMILTON (ZONE)	1/28/2022	Winter Weather
HAMILTON (ZONE)	2/2/2022	Winter Storm
HAMILTON (ZONE)	3/11/2022	Winter Weather
HAMILTON (ZONE)	12/22/2022	Winter Storm

Probability for Severe Winter Storm Hazard

This hazard is considered to have a "Medium Probability" because significant occurrences of this hazard have occasionally occurred in the County and will likely occur again in the future. Isolated and lower-impact events occur with recurrent regularity.

Geographic Location for Severe Winter Storm

Severe winter storms are regional in nature. Most of the NCEI data are calculated regionally or, in some cases, statewide.

Hazard Extent for Severe Winter Storm

The extent of the historical winter storms varies in terms of storm location, temperature, and ice or snowfall. A severe winter storm can occur anywhere in Hamilton County.

Table 123: Severe Winter Storm Extent				
Hazard Type	Affected Jurisdictions	Extent (based on historical events) Minimum	Extent (based on historical events) Maximum	Comments
Severe Winter Storm	County-wide	0 inches of snow	18.5 inches of snow	18.5 inches fell over three days, Feb. 4-6, 1998. It led to hundreds of car accidents and flights being canceled at Cincinnati/Northern Kentucky International Airport. The single-day record was 11.8 inches on February 4, 1998.

Analysis of Community Development Trends

Because the winter incident events are regional in nature, future development will be impacted equally across the county.

Previous Changes in Development

No significant or notable developmental (construction, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. Added moisture in the atmosphere as a result of climate change can result in heavier snowfall. It should be noted that there has been a slight increase of population from 2018to 2022, but this increase represents about a 1% change. An increase in population may result in more people that could be impacted by a major winter storm and possibly more vehicles utilizing roadways. Also, as a standard best practice, Duke Energy continues to bury powerlines in many new developments.

According to the Greater Cincinnati Coalition for the Homeless, between 2013 - 2018 the homeless population in the region increased by 150 percent. In 2021, about 6,062 people were on the streets or in shelters. This subgroup of the population represents one of the most vulnerable groups to winter incident events.

Vulnerability for Future Assets/Infrastructure for Winter Incident Hazard

Any new development within the county will remain vulnerable to these events. However, because structures that are older are more likely to be vulnerable to heavy snow or ice, newer construction may be more resilient to this hazard.

Vulnerability Analysis for Winter Incident Hazard

Winter incident impacts are equally distributed across the entire jurisdiction; therefore, the entire county is vulnerable to a winter storm and can expect the same impacts within the affected area.

Impact to Hamilton County Residents

Winter Incident hazard events are not usually life threatening. The impacts to residents will typically be limited to an increase in hazardous driving conditions due to ice, sleet, or snow. If driving conditions become too hazardous, residents are likely to be trapped in their homes temporarily. Other potential impacts to residents include power outages due to downed lines. It is unlikely, but possible, that residential roof collapse due to heavy buildups of snow could occur. Health effects like hypothermia can impact residents if they don’t have the proper sheltering to keep warm or if there are power outages.

Impact to Essential Facilities and Other Property

All critical facilities are vulnerable to a winter incident. A critical facility will encounter many of the same impacts as other buildings within the jurisdiction. These impacts include loss of gas or electricity from broken or damaged utility lines, damaged or impassable roads and railways, broken water pipes, and roof collapse from heavy snow. Building Inventory: The impacts on the general buildings within the county are like the damage expected to the critical facilities.
These include loss of gas or electricity from broken or damaged utility lines, damaged or impassable roads and railways, broken water pipes, and roof collapse from heavy snow.

Impact to Critical Infrastructure

During a winter incident, the types of infrastructure that could be impacted include roadways, utility lines/pipes, railroads, bridges, and ports. Since the county's entire infrastructure is equally vulnerable, it is important to emphasize that any number of these structures could become damaged during a winter storm. Potential impacts include broken gas and/or electricity lines or damaged utility lines, damaged or impassable roads and railways, and broken water pipes.

Impact to Environment

Lots of snowfall can lead to flooding in the local ecosystems, impacting the local food chain and potentially spreading pollution. Extended periods of wet/damp conditions can encourage the spread of mold and fungi. It is also possible that frozen tree branches can break off under their own weight and damage the tree. Winter conditions may make it harder for animals to obtain food and water, causing a drop off in local populations. Livestock may also be impacted.

Impact to Operations

Barring extremely hazardous driving conditions, impacts to first responder operations is usually manageable. It is possible that intense ice, sleet, or snow may make it difficult for emergency and police personnel to respond promptly to emergencies. Outages due to downed power lines may also cause many critical to facilities to rely on backup power temporarily.

Public Confidence in the Jurisdiction's Governance

The public is only likely to lose confidence in the jurisdiction's governance because of a failure to adequately take appropriate safety measures (i.e., declaring a snow emergency) and not clearing roadways quickly and efficiently. Assuming the appropriate response actions are taken, the public is not likely to lose confidence in the jurisdiction's governance resulting from a severe winter storm.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 124: Jurisdiction-Specific Hazard Impact/Vulnerability for Severe Winter Storm

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Cincinnati – City	Cincinnati is impacted by severe winter storms. Transportation and property are vulnerable to severe ice and snowfall. Low income and sensitive populations are vulnerable to severe winter weather.
Deer Park – City	Retirement and nursing homes may need assistance during a major snow-related incident. Retirement homes, nursing homes, and schools are of greatest concern to the city.
Sharonville – City	Snow incidents impacting major roadways is a concern for the city.
Wyoming – City	Severe Winter weather can cause downed powerlines and home damage which is a concern to the city.
Golf Manor – Village	The village has issues with their salt storage facility.
North Bend – Village	Although the village and utilities trim trees to mitigate damage to power lines, there are thousands of dead trees due to ash disease. These dead trees pose a risk for

Table 124: Jurisdiction-Specific Hazard Impact/Vulnerability for Severe Winter Storm	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
	increased utility and property damages in the event of a major ice storm or high wind incident.
Silverton – Village	The village would assist all residents during a winter weather incident, especially those who are most vulnerable. Specifically, retirement and nursing homes and special needs residents will be a priority. Stewart Road Hillside (north of I-71) is steep and is an area of concern during a winter weather incident.
St. Bernard – Village	St. Bernard is in a part of the country that regularly experiences winter storms.
Terrace Park – Village	Winter and ice storm would impact the elderly population by limiting their mobility.
Delhi – Township	The jurisdiction may experience a loss of utilities. Geriatric housing and extended care facilities would be on backup power or need assistance transferring patients.
Symmes – Township	During severe winter weather, a generator for the admin/public works building would be useful in case of utility failure. This facility is a critical asset to the township and would be impacted by a severe winter weather incident.

Summary Vulnerability Assessment

Winter incidents affect mostly humans, particularly special needs populations, and animals due to lack of mobility or isolation from supplies. Winter storms are also often accompanied by power loss. For this planning effort, it was not possible to analyze the number of lives or amount of property exposed to the impacts of winter storms. To measure the impact of severe winter storms, dollar losses were used a primary measure of analysis.

Potential Dollar Losses for Winter Storm Hazard

To determine dollar losses for a winter incident hazard, the available NCEI hazard information was condensed to include only winter storm hazards that occurred within the past ten years. It was determined that from 2012 - December 30, 2022, Hamilton County has incurred an average of $200,000 annually in damages relating to winter storms, including sleet/ice and heavy snow. This amount can be deceiving, however, as the only damage and loss Hamilton County incurred from Winter Storms during this period came from one event on January 21, 2013. On this day, Winter Weather caused 1 death, 27 injuries, and approximately $2,000,000 in property damages. It is this total that is averaged over the last 10 years to give an annual average of $200,000.

Table 125: Severe Winter Storm Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Winter Storm	3	4	14	28	46	**71**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Terrorism/Active Assailant

Total Risk Score: 41

Terrorism can take many forms. It is the unlawful use of force or violence against people or property to intimidate or coerce a government or civilian population in protest of political or social objectives[119]. Terrorism and active assailant events are violent mass casualty incidents. These events typically occur without warning, or without family and friends recognizing any warning signs. These events have recently taken the form of mass shootings, however, can also be caused by other means (such as bombs). These events can kill multiple people in a single incident.

In recent years, terrorists have used explosive devices, guns, knives, biological weapons, kidnappings, and other methods to inflict terror on their target audience. Although much focus has been placed on international terrorist groups targeting the United States and other western countries, terrorists can also be citizens of the targeted country. Active assailants are armed intruders engaged in killing or attempting to use deadly force on other people in a confined space or populated area. Most terrorist attacks stem from a political or religious disagreement with the target country or population.

The convergence of cyber incidents and terrorism is cyber terrorism. It is the use of technology and the internet to disrupt society and promote widespread fear. The worst possible cyberterrorism events include a breach in computers that control dams or air traffic control. The possible extent is endangering millions of lives and national security.

According to the Southern Poverty Law Center, in 2021 there were 21 organizations identified as hate groups in the State of Ohio. There are three that have been identified in or around Hamilton County: H8 Propaganda Art (Hate Music) is statewide, Patriot Front (White Nationalist) is statewide, and Israelite School of Universal Practical Knowledge (General Hate) has a chapter in Cincinnati.

Previous Occurrences for Terrorism/ Active Assailant Hazard

Numerous incidents of violent mass casualty incidents have occurred in recent history. These attacks have included active shooter situations, vehicle ramming, and improvised explosive devices. If a violent mass casualty incident were to occur in the Hamilton County region, it likely would mirror one of the aforementioned methods as they have proven successful in creating a violent mass casualty incident. Ohio is ranked number seven in the top ten states with the highest number of school shooting with 86 since 1970 by the World Population Review.

- October 25, 2022 – A shooting occurred in Butler County that killed two people and two, including a 3-year-old child.[120]

[119] U.S Department of Justice Office of Justice and Programs. (1987). FBI and Terrorism. Retrieved from: FBI and Terrorism | Office of Justice Programs (ojp.gov).

[120] Fox 19. (2022). 2 dead, young child hit in Hamilton quadruple shooting. Retrieved From: 2 dead, young child hit in Hamilton quadruple shooting (fox19.com).

- August 5, 2019, in Dayton Ohio outside the Dublin Pub, a shooter opened fire that resulted in 9 fatalities and 27 injuries. [121]
- September 6, 2018 – A gunman killed three people and injured two at a bank in Cincinnati, the shooter had about 200 rounds of ammunition.

The following 11 events from 1970 – 2020 were reported by WCPO, Cincinnati.[122]

- March 3, 1970 – A bomb is detonated at a Cincinnati Gas & Electric booster station in Lockland, causing extensive equipment damage.
- November 1, 1977 – A fire is set at the Cincinnati Planned Parenthood Clinic housed at Christ Church, causing $4,000 in damage.
- February 1, 1978 – A chemical bomb is thrown into the Women for Women Clinic in Cincinnati, causing $3,000 in damage. The clinic is shut down for nine days and three other Ohio abortion clinics are attacked within a two-month period.
- June 8, 1980 – Avowed racist Joseph Paul Franklin shoots and kills two African American teenage cousins – Darrell Lane and Donte Evans Brown – as they walk along Reading Road in Bond Hill. Franklin said he was on an overpass looking to shoot an inter-racial couple but became so impatient that he decided to shoot the young men. He is convicted of the murders on October 21, 1988, and is later charged with shooting Hustler magazine publisher Larry Flynt and civil rights leader Vernon Jordan.
- December 30, 1985 – A fire is set in the basement of the Margaret Sanger Center of Planned Parenthood on Auburn Avenue in Mount Auburn. Damage is listed at $75,000. The building is torn down, and a new structure is built. John Brockhoeft is convicted in the case.
- December 30, 1985 – A fire is set at the Women's Health Care Center on East McMillan Street in Mount Auburn, causing $250,000 in damage. John Brockhoeft is indicted in the case, but the charge is dismissed when he agrees to a plea deal in the Sanger Center case.
- February 23, 1987 – A pipe bomb is placed outside the temporary offices of the Margaret Sanger Center but is discovered and removed before it detonates. John Brockhoeft is indicted in the case, but the charge is dismissed when he agrees to a plea deal in the Sanger Center case.
- March 30, 1984 – An incendiary device is placed at the offices of the Cincinnati Herald Newspaper, but it is discovered before it detonates.
- January 3, 2000 – A bomb is placed in a package sent to the Cincinnati Planned Parenthood Clinic, but it is discovered and disarmed.
- March 26, 2017 – At 1:30 a.m., to settle a dispute, armed men opened fire inside the Cameo Nightclub, killing one and injuring at least 15 others.
- September 6, 2018 – A mass shooting occurred in Cincinnati, killing three[123] people.

[121] ABC News. (2019). 9 dead, 27 injured in Dayton shooting; suspect's sister among victims. Retrieved from 9 dead, 27 injured in Dayton shooting; suspect's sister among victims - ABC News (go.com).
[122] http://www.wcpo.com/news/local-news/hamilton-county-called-hot-spot-of-terrorism
[123] 2018 Cincinnati Shooting. (2018). Retrieved from https://en.wikipedia.org/wiki/2018_Cincinnati_shooting.

Probability for Terrorism/Active Assailant Hazard

While this hazard's probability ranking is modestly considered "Low," the possibility of significant future terrorism incidents cannot be discounted. Terrorism and Active Assailant prevention and mitigation should remain a high priority for all participating jurisdictions. Thankfully, these incidents within Hamilton County have historically been isolated or low impact events and the overall impact to the County and participating jurisdictions have been minor.

Geographic Location for Terrorism/ Active Assailant Hazard

Terrorism typically targets a specific location in accordance with their end goal. In Cincinnati, terrorists have historically targeted women's clinics and clinics that provide abortions. However, terrorists can also target certain population groups, such as minorities.

Hazard Extent for Terrorism/Active Assailant

Terrorist events typically, but not always, aim to impact large numbers of people. Those who are not directly impacted by a terrorist incident or active assailant event may still be indirectly impacted through fear, concern for safety, and reduced activity. Therefore, the impact of a terrorist of active assailant event in Hamilton County could impact every resident, either directly or indirectly.

Table 126: Terrorism Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Terrorism	County-wide	Arson or shooting (minimal casualties)	Major CBRNE attack (maximum casualties)	The maximum extent represents a hypothetical, but realistic scenario. The Oklahoma City bombing incident of 1995 represents a realistic scenario that could potentially occur in Hamilton County. This incident caused $652 million worth of damage and resulted in 168 fatalities.
Active Assailant	County-wide	0 fatalities, 0 injuries	9 fatalities, 27 injuries	Dayton, Ohio shooting on August 5, 2019

Analysis of Community Development Trends

The entire county and all future developments are vulnerable to a terrorist attack, but key facilities and infrastructure carry a higher risk.

Previous Changes in Development

No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard.

Vulnerability to Future Assets/Infrastructure for Terrorism Hazard

Vulnerability to future structures/assets is expected to be the same as for existing structures.

Vulnerability Analysis for Terrorism/ Active Assailant Hazard

Cincinnati is home to just under 309,000 people, making it the third largest city in Ohio. Larger cities are typically at greater risk for terrorism due to the large population, which serves to facilitate diversity (which can lead to division) and provides terrorists visibility to their cause from an attack. As such, Hamilton County is vulnerable to a terrorist attack.

Impact to Hamilton County Residents

Since the events of September 11, 2001, no citizen of the United States is unaware of the enormous potential impacts of terrorist acts. School shootings are active assailant events that have plagued the United States in the last 5 years. The emotional impacts: fear, dread, anger, outrage, etc., serve to compound the enormous physical, economic, and social damage. The continuing threat itself of terrorist and active assailants has a profound impact on many aspects of everyday life.

Impact to Essential Facilities and Other Property

Terrorists may target essential facilities to disrupt normal life for Hamilton County residents. Airports, places of worship, communication and transit facilities, waterways, and commercial, industrial, and governmental buildings are all at a higher risk of being targeted.

Building Inventory: Past incidents in Hamilton County have demonstrated that fires and bombs have been utilized to incite terror. These incidents created damage to the intended facility/location. As stated previously, high profile locations are likely to be targeted as opposed to residential areas.

Impact to Critical Infrastructure

Terrorists may also target infrastructure. Recent attacks have included attacks on buildings; it is possible other high visibility pieces of Hamilton County's infrastructure could be targeted as well. Terrorist acts carried out on public infrastructure can directly impact the County's ability to operate essential facilities and provide services.

Impact to Environment

This hazard does not typically impact the environment. Exceptions include setting of wildfires, intentional hazardous materials releases, or destroying a dam. All these scenarios would likely result in significant damage to the environment as well as loss of property and human life.

Impact to Operations

Law enforcement officials would likely be required to respond swiftly and with a large deployment to deal with a terrorist or active assailant incident. If such an attack targets a major building or infrastructure many other first responders may be needed to fight fires or search for survivors trapped in debris. Many law enforcement officials may put themselves in harm's way and potentially suffer injury or death. In addition, medical personnel would be needed to respond to the potentially large number of victims in need of assistance. The full impact to operations would likely be significant but depend upon the specific location and intention of the terrorist attack.

Public Confidence in the Jurisdiction's Governance

Public confidence in the jurisdiction's governance is only likely to be impacted if the public perceives that an act of terrorism/active assailant occurred, and the jurisdiction did not take the appropriate actions to mitigate the attack. For large public gatherings that provide target-rich environments, if appropriate safety measures are in place, the public is unlikely to lose confidence in the jurisdiction's governance.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 127: Jurisdiction-Specific Hazard Impact/Vulnerability for Terrorism

Jurisdiction	Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability
Blue Ash – City	The city runs several large special events each summer. "Red, White, and Blue Ash Celebration" attracts over 100,000 people on the 4th of July each year.
Cincinnati – City	Most human related hazards could impact Cincinnati. The central business district is vulnerable to civil disobedience and terrorism (e.g., courthouse and city hall). The dense urban nature of the city makes it vulnerable to violent mass casualty impacts.
Forest Park – City	I-275 is a vulnerable area for terrorism. Community events, such as jazz in the park, could be an attractive target for terrorists.
Madeira – City	There are many events that could attract terrorism because of the high volume of attendees. These events include street dance, Independence Day, Art Fair, Easter Egg Scramble, bike race, high school events, homecoming parade, and park events.
Reading – City	Terrorism is a general concern for the city.
Springdale – City	Tri-County mall in Springdale presents a soft target for potential terrorist attacks.
Wyoming – City	Water utilities are a potential target for terrorism.
Addyston – Village	Terrorism, especially with the presence of a chemical plant, is a real concern for the jurisdiction.
Amberley – Village	The village has a high population of residents that could potentially be targeted by threats and violence.
Arlington Heights – Village	The Bluegrass Festival in Fall, which attracts hundreds of people, could be a potential target for terrorism.
Cleves – Village	The village has its own water wells and water system that supplies water to several jurisdictions. These systems are vulnerable to terrorist or other criminal acts.
Evendale – Village	The GE-Aircraft plant could be a target for potential terrorist incidents.
Glendale – Village	Like all prominent employers and schools, GE and the Bethany School Complex are a potential target for terrorism or criminal acts.
Golf Manor – Village	The village's proximity to the four (4) Jewish schools within Golf Manor and the oldest orthodox synagogue in Cincinnati within Golf Manor present an added terrorist concern.
Lockland – Village	Proximity to General Electric poses a terrorism threat.
St. Bernard – Village	Terrorism is a possibility due to P&G and chemical plants in the jurisdiction.
Woodlawn – Village	The Armory is potentially vulnerable to terrorism.
Colerain – Township	There is potential for terrorism in many locations. These include mall, schools, and cultural events.
Sycamore – Township	Kenwood shopping district, located in the vicinity of Kenwood Road/Montgomery Road/ US 22 and Galbraith Road, is a possible terrorism target with many retail and office spaces.

Table 127: Jurisdiction-Specific Hazard Impact/Vulnerability for Terrorism	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Symmes – Township	The township has buildings that are vulnerable to terrorism, including a GE facility and Governor's Hill.

Summary Vulnerability Assessment

For this planning effort, it was not possible to analyze the number of lives or amount of property exposed to the impacts of a terrorist threat due to the unpredictable nature of the hazard.

Table 128: Terrorism/Active Assailant Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Terrorism/ Active Assailant	2	7	9	21	37	**41**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Urban Fires/Structural Fire

Total Risk Score: 54

The uncontrolled combustion or burning of an item, structure, or landscape is a fire. Fires constitute a much larger problem than is generally known. Deaths and injuries from all natural disasters combined—floods, hurricanes, tornados, earthquakes, etc.—are just a fraction of the annual casualties from fire. Deaths from natural disasters average just under 200 per year, versus approximately 4,000 deaths from fires. This section will describe the following fire categories: tire/scrap fires, structural fires, and arson. Wildfires will be covered in a separate section.

Tire Fires

More than 12 million scrap tires are found in Ohio annually. Many of those scrap tires end up in approved storage sites that are carefully regulated and controlled by federal and state officials. However, some scrap tires are dumped intentionally in unapproved locations throughout the state. There are four registered scrap tire transporters in Hamilton County; however, there are no licensed locations for tire disposal and storage. The number of unlicensed locations cannot be readily determined. These illegal sites are owned by private residents who have been continually dumping waste and refuse, including scrap tires, at those locations for many years.

Tire disposal sites can be fire hazards, in large part, because of the enormous number of scrap tires typically present at one site. This large amount of fuel renders standard firefighting practices nearly useless. Flowing and burning oil released by the scrap tires can spread the fire to adjacent areas. Tire fires differ from conventional fires in the following ways:

- Relatively small tire fires can require significant fire resources to control and extinguish.
- Those resources often cost much more than standard fire responses.
- There may be significant environmental consequences of a major tire fire. Extreme heat can convert a standard vehicle tire into approximately 2 gallons of oily residue that may leak into the soil or migrate to streams and waterways.

Urban Fires

Lightning strikes, poor building construction, and building condition are the main causes for most structural fires in Ohio. Hamilton County has structural fires each year countywide. According to the National Fire Protection Association (NFPA), a fire occurs in a structure at the rate of one every 65 seconds, and a home fire occurs every 93 seconds. In 2021, the United States had 486,500 structural fires which resulted in, 3,010 civilian fatalities, 12,600 civilian injuries, and $12.8 in property damage. [124]

Arson

It is important to note that arson is a contributing factor to fire-related incidents within the county. According to the NFPA, between 2014 and2018 an estimated average of 52 fires, 260 intentional fires are reported to fire departments in the United States each year, causing no civilian deaths, 950 injuries, and $815 million in direct property damage.[125]

The US Fire Administration reports the nation fire death rate between 2015 - 2019 was 9.98 deaths per million, while the Ohio rate is higher at 12.75 deaths per million. In figure 149, the data shows that Ohio's fire death rates have consistently been higher than the national death rates since 1998. According to the NFPA, states with higher percentages of African Americans and Native Americans tend to have higher fire rates.

Previous Occurrences for Urban Fires Hazard

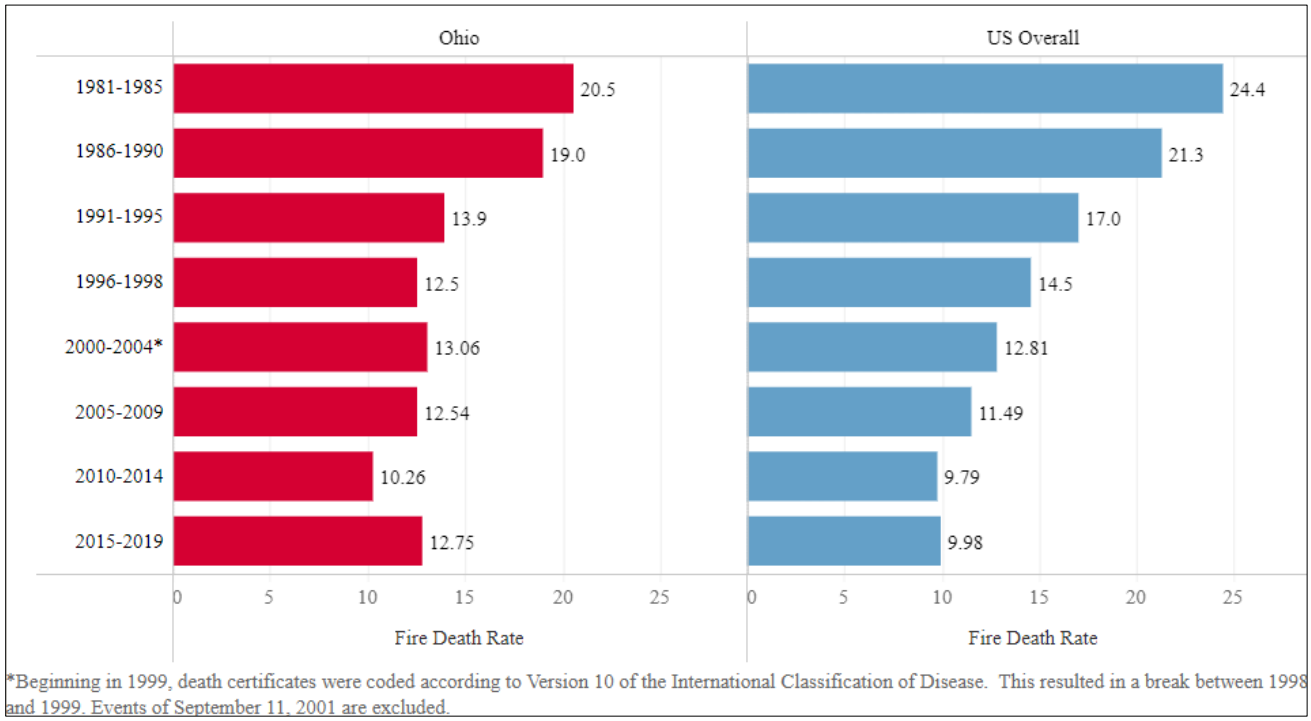
- On January 10, 2014, an Indian Hill mansion was destroyed in a fire, no one was harmed and both dogs were safe outside.
- On March 10, 2012, there was a fire at a Ross Township estate home. Assistance from 10 fire departments across Hamilton and Butler County was needed to respond to the incident. An additional water main break added difficulty, resulting in the use of tanker trucks to bring water to put out the fire. There were no reports of injuries from this incident.
- On February 1, 2008, a light bulb started fire at the historic Old St. George Church. No one was injured and the only person in the building escaped. The building was very damaged in the blaze. On May 28, 1977, at a Beverly Hills Supper Club, more than 160 people died from an electrical fire. This was double the number of people that were legally allowed to be there. There were only three exits to the outside and one was locked.

[124] National Fire Protection Association. (2022). Fire Loss in the United States: Trend Tables. Retrieved from: Fire Loss in the United States: Trend Tables (nfpa.org).
[125] National Fire Protection Association. (2021). International Structure Fires. Retrieved from: Intentional Structure Fires | NFPA.

Table 129: Hamilton County Arson Fires										
Year	Structure Fires	Vehicle Fires	Outside Fires	Total Fires	Dollar Loss	Civilian		Fire Service		% of All Fires
						Injuries	Death	Injuries	Death	
2013	83	22	126	231	$739,515	5	0	0	0	12.7
2014	85	21	167	273	$624,395	2	0	1	0	12.8
2015	90	22	158	270	$548,957	3	0	1	0	13.1
2016	104	15	191	310	$259,940	1	0	1	0	14.8
2017	86	23	171	280	$1,179,112	1	0	0	0	14.3

Table 130: Hamilton County All Fires									
Year	Structure Fires	Vehicle Fires	Outside Fires	Total Fires	Dollar Loss	Civilian		Fire Service	
						Injuries	Death	Injuries	Death
2013	933	436	450	1,819	$14,838,252	40	4	29	0
2014	974	520	636	2,130	$19,160,685	45	8	27	0
2015	961	462	644	2,067	$13,401,323	47	7	47	1
2016	988	435	670	2,093	$11,126,366	37	10	14	0
2017	892	446	624	1,962	$13,299,475	31	9	9	0

Figure 35: Fire Deaths per Million Population - US vs. Ohio[126]



Probability for Urban Fires Hazard

This hazard is considered to have a "Medium Probability" because significant occurrences of this hazard have occasionally occurred in the County and will likely occur again in the future. Isolated incidents causing minimal impact may, of course, occur on a more frequent basis.

[126] National Fire Protection Association. (2021). Fire Death Rates by State. Retrieved from: NFPA report - Fire death rates by state report "| NFPA[.

Geographic Location for Urban Fires Hazard

Urban Fire hazards occur countywide in the built environment. Communities with older wooden structures or structures near one another are more vulnerable to structural fires.

Hazard Extent for Urban Fires

The extent of the fire hazard varies in terms of the severity of the fire and the type of material being ignited. All communities in Hamilton County are equally affected by the fire.

Table 131: Urban Fires Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Fire	County-wide	Small Residential Fire	Fire at a facility accommodating large gathering of individuals	Beverly Hills Supper Club Fire (160 fatalities) occurred on May 28, 1977. Though the fire occurred in Southgate, KY, just across the Ohio River, a significant number of Hamilton County resources were deployed to the fire and many of those fatalities were Hamilton County residents.

Analysis of Community Development Trends

Fire-hazard events may occur anywhere within the county; because of this, future development will be impacted.

Previous Changes in Development

No significant or notable developmental (construction, climate variability, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. While new housing developments have been built since the last iteration of the plan, the trends have not been unique or reflective of an increased vulnerability to this hazard.

Vulnerability to Future Assets/Infrastructure for Fire Hazard

Any future development in Hamilton County will be vulnerable to these events.

Vulnerability Analysis for Urban Fires Hazard

This hazard impacts the entire jurisdiction equally; therefore, the entire population and all buildings within the county are vulnerable to fires and can expect the same impacts within the affected area. Because of the difficulty predicting which communities are at risk, the entire population and all buildings have been identified as risk facilities. All facilities are vulnerable to fire hazards. An essential or critical facility will encounter many of the same impacts as any other building within the jurisdiction. These impacts include structural damage from fire and water damage from efforts extinguishing fire.

Impact to Hamilton County residents

A structural fire has the potential to cause enormous property damage and threaten the lives of Hamilton County residents. Direct burns and smoke inhalation can both seriously injure residents and their pets, not to mention the significant financial loss that would likely accompany any such event.

Impact to Essential Facilities and Other Property

All essential facilities are at risk of fire. These impacts include structural damage from fire and water damage from efforts to extinguish the fire. The loss of essential services is also a likely impact. Building Inventory: Impacts to the general buildings within the county are like the damage expected to the essential facilities. These impacts include structural damage from fire and water damage from efforts to extinguish the fire.

Impact to Critical Infrastructure

During a fire the types of infrastructure that could be impacted include buildings, utility lines/pipes, railroads, and bridges. Since the county's entire infrastructure is equally vulnerable, it is important to emphasize that any number of these items could become damaged during a fire. Potential impacts also include structural damage resulting in impassable roadways and power outages.

Impact to Environment

Burning of certain property or structures has the potential to release hazardous fumes and smoke into the air, potentially threatening the health of the community and of the environment nearby. It is also possible for fires to spread amongst nearby trees and vegetation, potentially causing a great deal of damage to the surrounding flora and fauna.

Impact to Operations

Of the 38 fire departments serving Hamilton County residents, it is likely that most fires can be taken care of without needing to request aid from other jurisdictions. During a fire, police and other medical services may be called upon to respond to the disaster. Fires pose a risk to the safety and wellbeing of first responders.

Public Confidence in the Jurisdiction's Governance

Fire is a routine occurrence and is unlikely to result in the public losing confidence in the jurisdiction's governance.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

Table 132: Jurisdiction-Specific Hazard Impact/Vulnerability for Fire	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Cincinnati – City	Cincinnati has fully developed dense urban development. Vulnerabilities include densely occupied residential and commercial buildings and various industrial facilities such as chemical manufacturers and bulk petroleum storage.
Deer Park – City	Homes that are close in proximity to each other are of greatest concern.
Forest Park – City	Day-to-day fire incidents occur in the city.
Loveland – City	Vulnerable areas include Industrial Park located off Union Cemetery. An active railroad track runs through the center of the city and downtown area.
Madeira – City	The city has two nursing homes and a new Senior facility that are of concern due to the vulnerable population living in those facilities. A few major roadways are also areas at risk of fire hazards.
North College Hill – City	The city has a large population of vision impaired individuals (residents and employees) who may be more vulnerable to fire hazards.
Norwood – City	Within the city, residential buildings with old construction represent 50% of building stock. Many do not have sprinkler systems and are built close in proximity. These are of great concern to the city. Similarly, 50 percent of industrial/commercial and nonindustrial sites are aging and/or vacant. Many commercial sites are newer and have sprinkler systems.
Arlington Heights – Village	There are a number of locations vulnerable to fire hazards throughout the village.
Elmwood Place – Village	Fire prevention efforts are needed in the village to mitigate this hazard.
Evendale – Village	GE, Jet Fuel-Chemicals, Formica-Chemicals, and Nexco-Hazmat Chemicals are susceptible to fire hazards.
Lincoln Heights – Village	The housing stock is vulnerable. There are several vacant and blighted properties that are vulnerable to fire.
Silverton – Village	A few facilities (i.e., retirement centers) with vulnerable populations are a specific concern for the village.
St. Bernard – Village	The village has a large industrial and chemical base, increasing the risk of fire and HAZMAT hazards.
Terrace Park – Village	This community was established in 1893 with many of the original buildings intact. These buildings could burn quickly. The fire department is one of the last remaining all volunteer fire departments in Hamilton County.
Woodlawn – Village	There are multiple locations throughout the village that are vulnerable to fire hazards.

Summary Vulnerability Assessment

Between 2013 and 2017, the county recorded 4,648 structural fires at a loss of $71,826,101. This loosely translates to an average annual risk of approximately 950 buildings and $14,365,220 in buildings losses. Data regarding building occupancy type was not available, so it is unclear how many historically damaged buildings were residential or essential facilities. According to 2017 NFIRS Data, Hamilton County all fire data equated to 200 civilian injuries and 38 deaths averaging to 40 injuries and 7.6 deaths. Specifically, for Arson structure fires, Hamilton County experienced 448 fires with an average of 89.6 fires a year. Ohio averages 6 deaths and 41.5 injuries per 1,000 fires (national average is 5.5 and 26.2, respectively).

Table 133: Urban Fire/Structural Fire Hazard Evaluation and Impact/Consequence Assessment						
	Probability	Consequence				Total Risk
Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score* (Probability x Consequence)
Urban Fire/ Structural Fire	3	4	6	24	34	**54**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

Wildfire

Total Risk Score: 17

Wildfire is a naturally occurring event, often ignited by lightning, and fueled by grasses, brushes, and trees. Wildfires are uncontrolled but help to control the buildup of woody debris, improve soil conditions, reduce weedy and invasive plants, reduce plant disease, and maintain the habitat conditions thus providing a healthy ecosystem. The wildland-urban interface describes the area of transition between non-human inhabited areas and the built environment. This zone is best described as a set of conditions; according to the National Fire Protection Association, conditions include (but are not limited to): amount, type, and distribution of vegetation; flammability of structures (homes, businesses, outbuildings, decks, fences) in the area, and proximity to fire-prone vegetation and to other combustible structures; weather patterns and general climate conditions; topography; hydrology; average lot size; and road construction.

According to FEMA, a wildland-urban interface fire is a wildfire in a geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels. Nearly 85% of wildland fires are caused by humans leaving campfires unattended, the burning of debris, equipment uses and malfunctions, negligently discarded cigarettes, and intentional acts of arson.

Each year in Ohio, an average of 1,000 wildfires burns 4,000 to 6,000 acres of forest and grassland within Ohio's forest fire protection district, which includes all of Ohio's 21 State Forests (200,000+ acres), as well as privately owned lands within the district boundaries, and corresponds mostly to the state's unglaciated hill country. Ohio's wildfire seasons occur primarily in the spring—March, April, and May—before vegetation has "greened-up", and in the fall—October and November—when leaf drop occurs. During these times, especially when weather conditions are warm, windy, and with low humidity, cured vegetation is particularly susceptible to burning. When combined, fuel, weather, and topography present an unpredictable danger to unwary civilians and firefighters in the path of a wildfire.

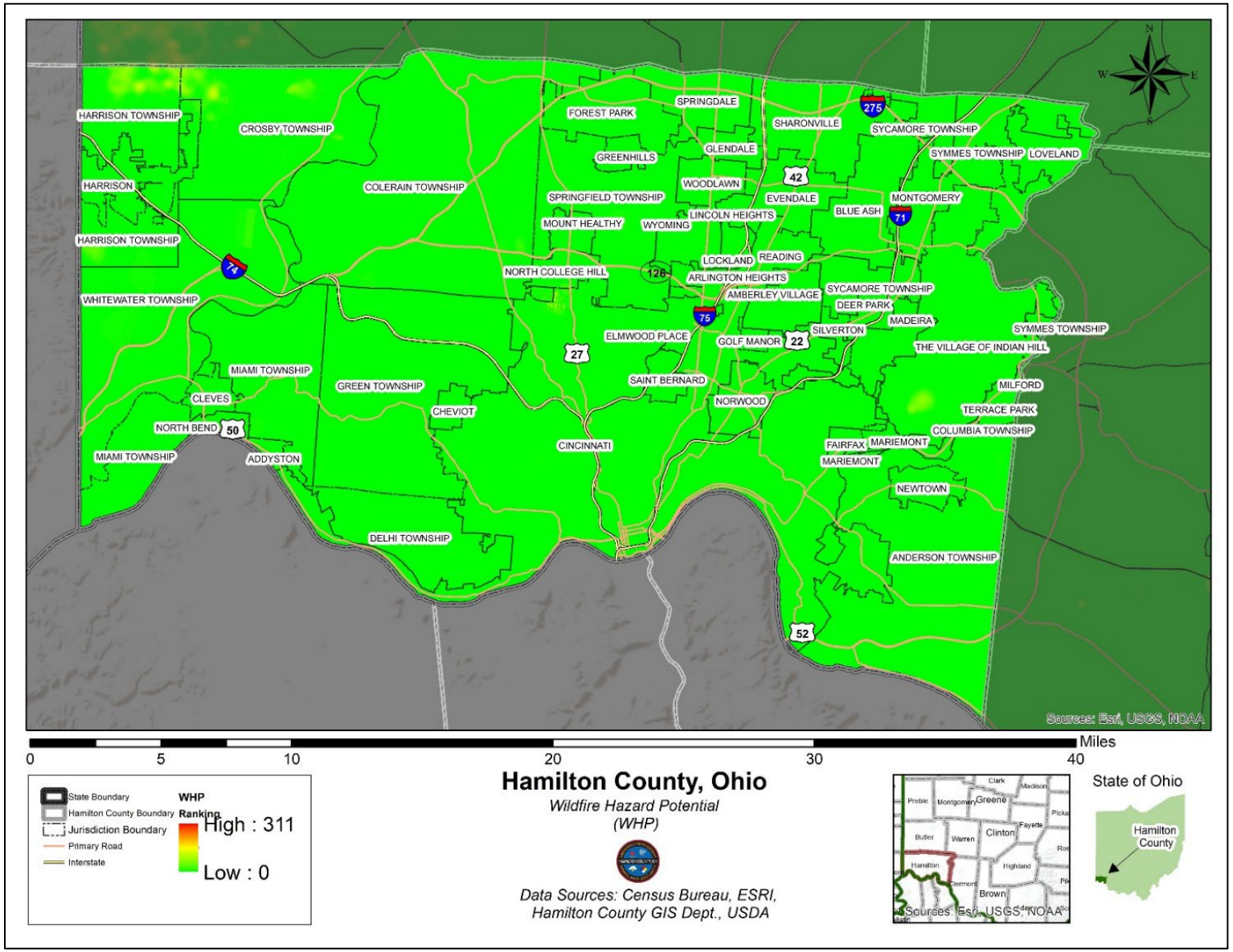
Previous Occurrences for Wildfire Hazard

While no major wildfires have been reported in the last 50 years, a significant wildfire was reported in the late 1700s. In early spring of 1794, a brush fire was started to clear the land for farming, but wind spread the fire more than 100 acres east. Amid the chaos, the terrified settlers managed to save a small-frame law office that was owned by Thomas Goudy. Because of this, the fire was named "Goudy's Fire." Between 01/01/2007 and 12/31/2017 Hamilton County had a total of 87 fire events which burned 118 acres.

Probability for Wildfire Hazard

This hazard is considered to have a "Low Probability" as this hazard was determined to be extremely rare. Significant events may occur every 100 or more years.

Figure 36: Hamilton County Wildfire Potential



Geographic Location for Wildfire Hazard

Most of the wildfire risk in Ohio is located in the southeast of the state. Hamilton County does have some Wildland Urban Interface areas, which can be prone to wildfires.

Hazard Extent for Wildfire

Wildfires can burn thousands of acres and damage or destroy all structures it encounters along the way. The hazard can also cause injuries (both directly and indirectly through smoke) and death.

Table 134: Wildfire Hazard Extent

Hazard Type	Affected Jurisdictions	Extent (based on historical events)		Comments
		Minimum	Maximum	
Wildfire	County-wide	0 acres	100 acres	In early Spring of 1794, a brush fire was started to clear the land for farming, but wind spread the fire more than 100 acres east.

Analysis of Community Development Trends

Any future development in or near the Wildland Urban Interface could be at risk for a wildfire.

Previous Changes in Development

No significant or notable developmental (construction, population changes, and other conditions) changes have occurred that would change the vulnerability of the County or participating jurisdictions to this hazard. Global warming has increased dry periods which also extend fire season. The dry conditions also make it more favorable for fires to ignite and spread quicker, making them difficult to control.

Vulnerability to Future Assets/Infrastructure for Wildfire Hazard

Vulnerability to future structures/assets is expected to be the same as for existing structures.

Vulnerability Analysis for Wildfire Hazard

Although Hamilton County could be impacted by wildfires, it is a relatively low risk. Most of the County is developed, reducing the risk of wildfires.

Impact to Hamilton County Residents

The most obvious impacts of a wildfire would be property damage or complete loss, injury, or even death. It can also impact the short- and long-term migration of displaced residents, including short-term emergency evacuations and long-term displacements when homes are destroyed. Additionally, smoke exposure may impact communities far beyond a wildfire burn area, causing or exacerbating health problems, especially to those vulnerable people who have any chronic condition. The effects of wildfire smoke range from eye and respiratory tract irritation to more serious disorders, including reduced lung function, bronchitis, exacerbation of asthma and heart

failure, and premature death[127]. This is unlikely in Hamilton County given the low occurrence of wildfires in the County.

Impact to Essential Facilities and Other Property

Any essential facility in or near the Wildland Urban Interface could be at risk of a wildfire. Significant or complete structural damage could be expected should a wildfire overtake an essential facility. Building Inventory: Any building in or near the Wildland Urban Interface could be at risk of a wildfire.

[127] EPA. (2023). Wildland Fire Research: Health Effects Research. Retrieved from https://www.epa.gov/air-research/wildland-fire-research-health-effects-research#:%7E:text=Wildfires%20increase%20air%20pollution%20in%20surrounding%20areas%20and,of%20asthma%20and%20heart%20failure%2C%20and%20premature%20death

Figure 37: Wildland-Urban Interface in Hamilton County

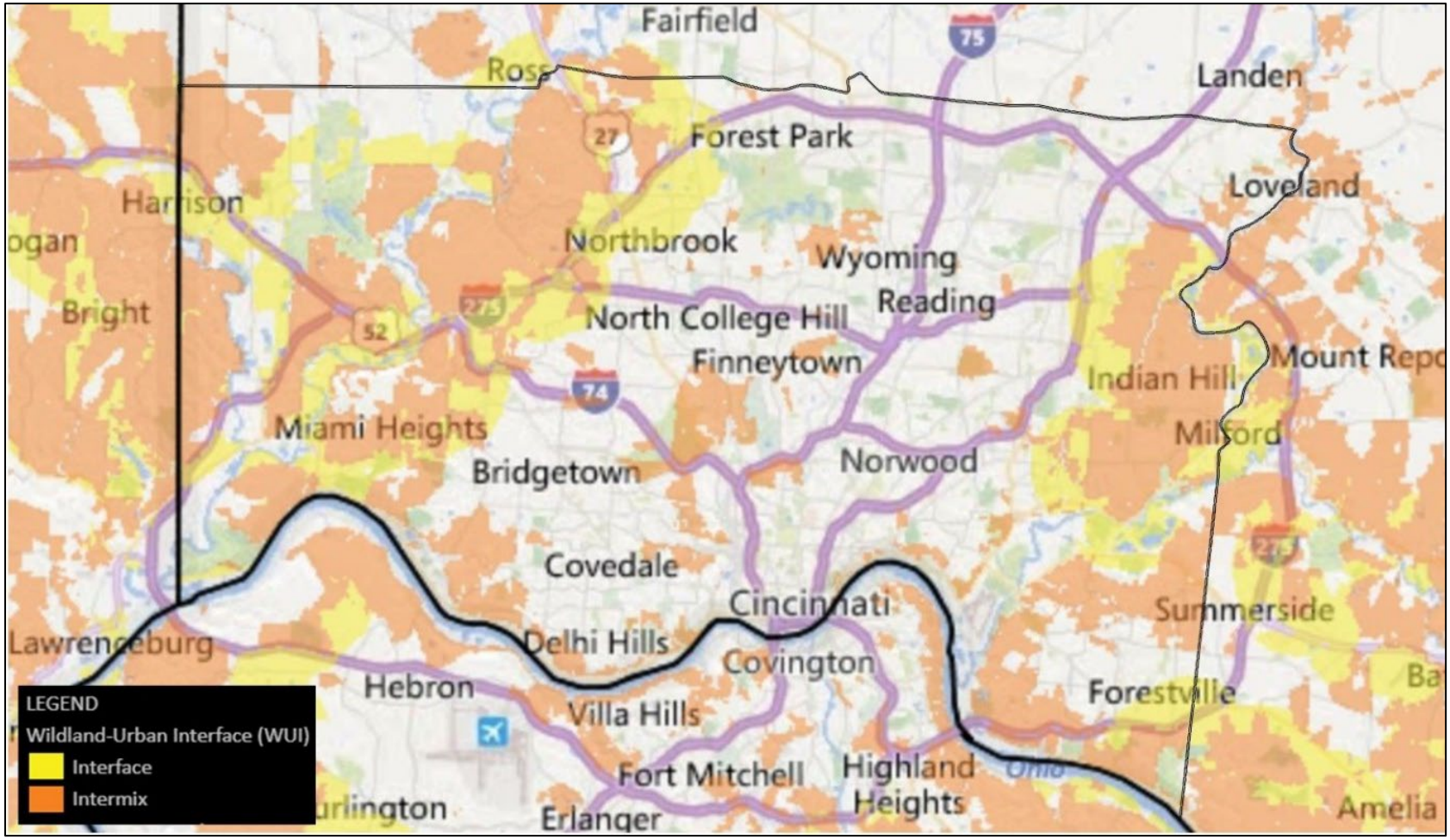
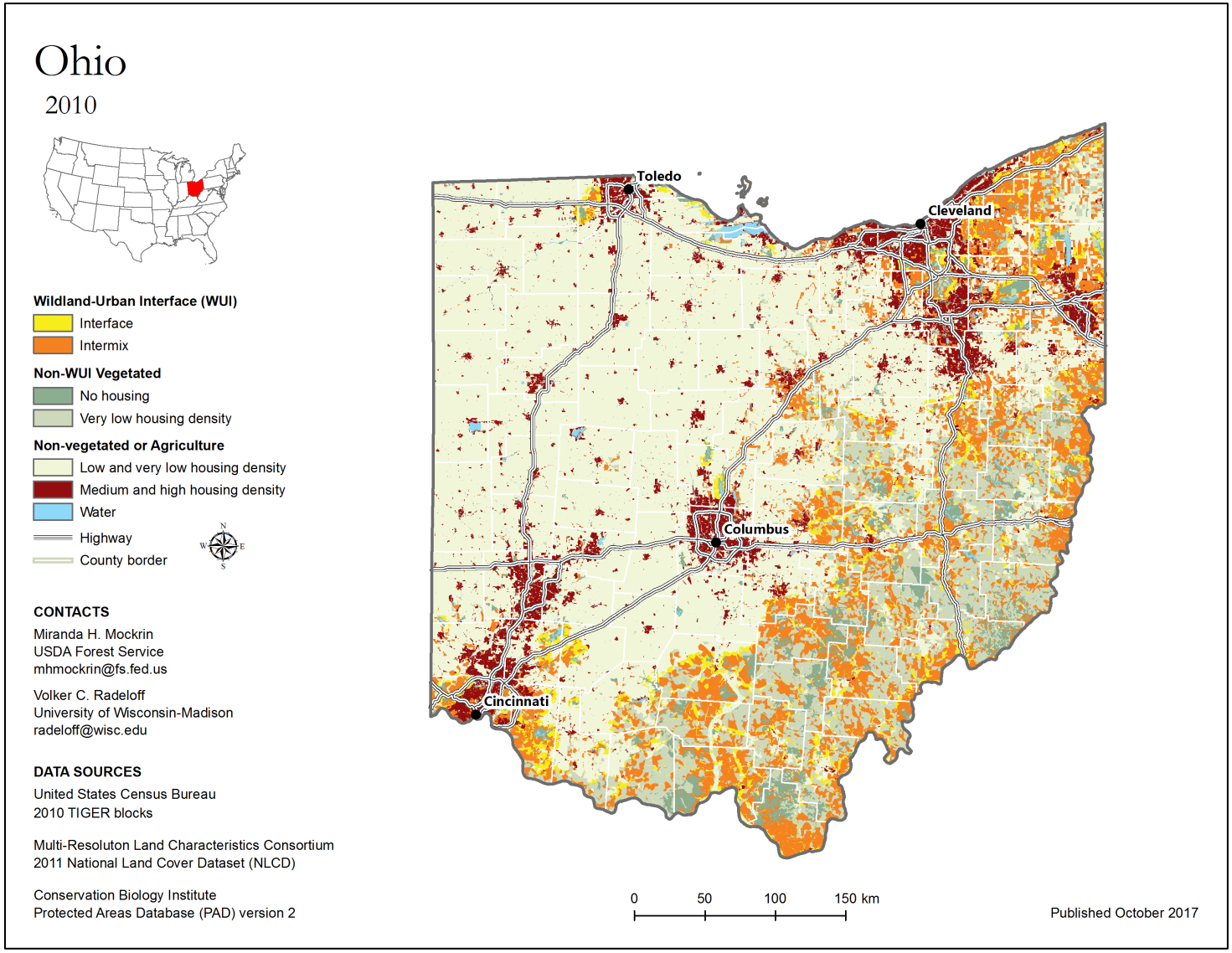


Figure 38: Wildland-Urban Interface in Ohio



Impact to Critical Infrastructure

Any infrastructure in or near the Wildland Urban Interface could be at risk for a wildfire. Significant or complete structural damage could be expected should a wildfire overtake any vulnerable and exposed infrastructure.

Impact to Environment

As one might expect, the effect of wildfires on the environment is typically devastating. Many trees and other vegetation will be killed off. Although many species of vegetation can flourish in the aftermath of a wildfire due to increased sunlight exposure to the ground, the initial impact to the environment is severe. However, given the unlikely occurrence of wildfires in Hamilton County, the impact would be minimal and isolated.

Climate change is already causing an increase in the scale and total burn area of wildfires across the United States. The frequency of large wildfires is influenced by a combination of natural and human factors, such as temperature, soil moisture, relative humidity, wind speed, and vegetation (fuel density)[128]. Wildfire activity and the environmental conditions caused by climate change together create a feedback loop in which the burning of organic matter releases greenhouse gases into the atmosphere that then further contribute to climate change and compound wildfire risk.

Impact to Operations

During the unlikely event that a major wildfire was to seriously threaten Hamilton County, it is likely that firefighting resources would be necessary. Some communities noted the lack of water or the access to water as being a major issue that could make response operations challenging.

Public Confidence in the Jurisdiction's Governance

Wildfire is unlikely to result in a loss of public confidence in the jurisdiction's governance unless inadequate actions are taken to address the hazard. If there is an appropriate response to the hazard, public confidence should not diminish.

Jurisdiction-Specific Hazard Considerations and Impact/Vulnerability

Only those jurisdictions uniquely affected by the hazard are included. If a jurisdiction was not included, it denotes the hazard impact or vulnerability to that hazard is not significant and/or is adequately addressed at the county-level.

[128] Climate Science Special Report. (2017). Fourth National Climate Assessment, Volume I, U.S. Global Change Research Program (USGCRP). Retrieved from https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf.

Table 135: Jurisdiction-Specific Hazard Impact/Vulnerability for Wildfire	
Jurisdiction	**Affected Jurisdictions' Hazard Considerations and Impact/Vulnerability**
Forest Park – City	A section of Great Parks, north of Sharon (between Mill Road and Embassy Road) are prone to wildfire.
Madeira – City	Parks and wooded areas are minimally vulnerable to wildfire.
Amberley – Village	Maintaining fire breaks in Meadowland, at Amberley Green and French Park, are important in the prevention of wildfires within the village.
Evendale – Village	Gorman Farm (100 acres) is susceptible to wildfire. Other locations with potential vulnerability to wildfire are Old Pottinger Farm (50 acres) and Griffin Preserve (30 acres).
Glendale – Village	The north end of North Troy and North Greenville, by the railroad tracks, is vulnerable to wildfire.
Mariemont – Village	"South 80" Gardens and Dog Wood Park are vulnerable to wildfire, and the lack of water supply presents an added risk.
Anderson – Township	Anderson Township has a number of greenspace properties, parks, and large private properties that could be subject to wildfires or potential arson.
Crosby – Township	Fernald and Miami Whitewater Park (controlled burns) are vulnerable to wildfire.
Miami – Township	Shawnee and Mitchel Park are susceptible to wildfires.
Springfield – Township	Wooded areas are susceptible to wildfire, such as Winton Woods Park. A fire would threaten residential communities.
Whitewater – Township	Miami Whitewater Park does controlled burnings annually.

Summary Vulnerability Assessment

Potential structural dollar loss due to a wildfire incident is estimated to be zero because the historical data is nonexistent and limited regarding damages.

Table 136: Wildfire Hazard Evaluation and Impact/Consequence Assessment						
	Probability	**Consequence**				**Total Risk**
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Wildfire	1	4	5	17	26	**17**

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

**Normalized to 100*

MITIGATION STRATEGY

The heart of the mitigation plan is the mitigation strategy, which serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose, or mission, of the planning process. In this section, mitigation goals and objectives were reevaluated and updated; and mitigation actions/projects were updated/amended, identified, evaluated, and prioritized.

Mitigation Goals and Objectives

In this section of the Plan, the risk assessment identified Hamilton County as prone to 21 hazards. See *Table 3*. The Steering Committee and community stakeholders understand that although hazards cannot be eliminated altogether, the many communities within Hamilton County can work together toward building disaster-resilient communities. The following is a list of goals and objectives. The four goals represent the County's long-term and strategic vision to accomplish and achieve successful mitigation efforts. The associated objectives are specific strategies and steps identified to assist the communities in attaining the listed goals.

Goal 1: To develop equitable plans and policies that address community risk reduction and climate adaptation strategies focused on an evolving hazard landscape.

- **Objective A:** Identify and implement inclusive actions that reduce vulnerability for Hamilton County residents.
- **Objective B:** Review new and existing policies to determine where climate change resiliency strategies can be included.
- **Objective C:** Reduce repetitive property losses by updating land use, design, and construction policies.
- **Objective D:** Seek non-profit, corporate, local, state, and federal grant opportunities to financially support public and private mitigation actions.

Goal 2: To reduce the impacts of hazards to new and existing structures and properties.

- **Objective A:** Conduct studies to identify specific mitigation actions that local jurisdictions can undertake to reduce the impacts of hazards.
- **Objective B:** Retrofit critical facilities and structures with design practices and equipment that will withstand multiple hazards.
- **Objective C:** Minimize the amount of infrastructure exposed to hazards.

Goal 3: To minimize the interruption of essential services and activities.

- **Objective A:** Retrofit and reinforce critical infrastructure that serves all populations, including vulnerable populations, to reduce service interruptions.
- **Objective B:** Equip essential facilities to guard against cascading impacts from hazards.

Goal 4: To promote community resilience through public education.

- **Objective A:** Raise public awareness on the natural and human-caused hazards that could impact Hamilton County.
- **Objective B:** Educate community leaders and elected officials on the potential hazard consequences and importance of risk reduction actions.

Objective C: Promote the importance of insurance to residents and businesses.
Objective D: Promote personal mitigation actions to reduce impacts at home and in the community.

Mitigation Strategies and Actions

Plan participants assessed 467 hazard mitigation strategies/actions, including strategies from FEMA guidance documents, strategies from the 2018 Hamilton County Multi-Hazard Mitigation Plan and suggestions from participating communities and their respective stakeholders during a series of workshops and mitigation meetings that took place throughout the County in March and April 2023. See *Appendix D – Stakeholder Engagement* and *Appendix E – Public Engagement* for engagement supporting documentation.

These mitigation strategies/projects resulted in 119 new strategies/actions, 229 ongoing mitigation strategies/actions and 67 completed strategies/actions. A total of 5 strategies/actions were deferred and 47 strategies/actions were deleted. The mitigation strategies and actions from the County and participating jurisdictions are included in *Appendix A – Mitigation Actions.* Each entities' Mitigation Strategies & Actions are organized as follows:

- **New Mitigation Actions** - New actions identified during this 2023 update process.
- **Ongoing Mitigation Actions** - These ongoing actions were included in the previous update and have yet to be completed. Some of these actions have no definitive end. During the 2023 update, these "ongoing" mitigation strategies/actions were modified and/or amended, as needed, to better define the strategy/action.
- **Completed Mitigation Actions** - Completed actions since 2018. Completed actions also included a brief description of the "Resulting Reduction or Limitation of Hazard Impact(s) Achieved" to show the resulting benefits of implementing the mitigation initiative.
- **Deferred Mitigation Actions** – Actions are deferred when risk can't be validated, or additional time is needed to validate the potential impacts and benefits of the action.
- **Deleted Mitigation Actions** – These actions are no longer relevant or applicable because other mitigation actions addressed the mitigating need, or the hazard vulnerability changed resulting in reduced risk.

Mitigation Action Plan

The Action Plan for each mitigation project is presented in two table formats. The table found in *Appendix B – Jurisdiction Profiles* is designed to facilitate and encourage the annual review and maintenance of each mitigation strategy/action by allowing the Jurisdiction led department to document the yearly status of the project prior to and/or during the Annual Steering Committee meeting. The table found in *Appendix A – Mitigation Actions* is designed to capture important details intended to support the implementation of the strategy/action.

Mitigation Strategy/Action Timeline Parameters

While the preference is to provide definitive project completion dates, this is not possible for every mitigation strategy/action. Therefore, the parameters for the timeline (Estimated Completion Date) are as follows:

- **Short Term** = to be completed in 1 to 3 years

- **Medium Term** = to be completed in 3-7 years
- **Long Term** = to be completed in greater than 7 years
- **Ongoing** = currently being funded and implemented under existing programs, and/or is seeking funding and necessary approvals.

Mitigation Strategy/Action Estimated Cost

While the preference is to provide definitive costs (dollar figures) for each mitigation strategy/action, this is not possible for every mitigation strategy/action. Therefore, the estimated costs for the mitigation initiatives identified in this Plan were identified as high, medium, or low, using the following ranges:

- **Low** – less than $10,000
- **Medium** – from $10,000 to $100,000
- **High** – greater than $100,000

Mitigation Strategy/Action Prioritization Process

The mitigation strategy/action must be prioritized according to a benefit/cost analysis of the proposed projects and their associated costs[129]. The benefits of proposed actions were weighed against multiple factors as part of the project prioritization process. The benefit/cost analysis was not of the detailed variety required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. A less formal approach was used because some actions/strategies may not be implemented for up to 10 years, and associated costs and benefits could change dramatically in that time.

County and municipal stakeholders evaluated each mitigation strategy/action with the following criteria.

The mitigation strategies/actions were prioritized and evaluated using the STAPLEE method which uses seven criteria for evaluating a mitigation action: Social, Technical, Administrative, Political, Legal, Economic, and Environmental. Within each of those criteria are additional considerations. Because equity is essential to reducing risk to the whole community[130], an additional measure was added to the criteria totaling eight barometers. An explanation of how each of the STAPLEE+E criteria may be applied to evaluation of mitigation actions follows:

Social: Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community's social and cultural values.

- Will the proposed action adversely affect one segment of the population?
- Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

Technical: Mitigation actions are technically most effective if they provide a long-term reduction of losses and have minimal secondary adverse impacts.

- How effective is the action in avoiding or reducing future losses?

[129] Code of Federal Regulation. (2023). 44 CFR, Section 201.6(c)(3)(iii).

[130] Executive Order 13985. (2021). Advancing Racial Equity and Support for Underserved Communities through the Federal Government. Retrieved from https://www.whitehouse.gov/briefing-room/presidential-actions/2021/05/20/executive-order-on-climate-related-financial-risk/.

- Will it create more problems than it solves?
- Does it solve the problem or only a symptom?
- Does the mitigation strategy address continued compliance with the NFIP?

Administrative: Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.

- Does the jurisdiction have the capability (staff, technical experts, and/or funding) to implement the action, or can it be readily obtained?
- Can the community provide the necessary maintenance?
- Can it be accomplished in a timely manner?

Political: Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.

- Is there political support to implement and maintain this action?
- Is there a local champion willing to help see the action to completion?
- Is there enough public support to ensure the success of the action?
- How can the mitigation objectives be accomplished at the lowest cost to the public?

Legal: It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.

- Does the community have the authority to implement the proposed action?
- Are the proper laws, ordinances, and resolutions in place to implement the action?
- Are there any potential legal consequences?
- Is there any potential community liability?
- Is the action likely to be challenged by those who may be negatively affected?
- Does the mitigation strategy address continued compliance with the NFIP?

Economic: Budget constraints can significantly deter the implementation of mitigation actions. It is important to evaluate whether an action is cost-effective, as determined by a cost benefit review, and possible to fund.

- Are there currently sources of funds that can be used to implement the action?
- What benefits will the action provide?
- Does the cost seem reasonable for the size of the problem and likely benefits?
- What burden will be placed on the tax base or local economy to implement this action?
- Does the action contribute to other community economic goals such as capital improvements or economic development?
- What proposed actions should be considered but be “tabled” for implementation until outside sources of funding are available?

Environmental: Sustainable mitigation actions that do not have an adverse effect on the environment, comply with federal, state, and local environmental regulations, and are consistent with the community’s environmental goals, have mitigation benefits while being environmentally sound.

- How will this action affect the environment (land, water, endangered species)?

- Will this action comply with local, state, and federal environmental laws and regulations?
- Is the action consistent with community environmental goals?

Equity: Does not create an opportunity for unequal distribution of resources; racism; affect a particular segment of the population, including communities of color, communities that face discrimination based on sex, sexual orientation or gender identity, persons with disabilities, persons who identify with a certain religion, persons with Limited English Proficiency, or rural communities, etc.

- Is the action consistent and systematically fair?

Hamilton County Hazard Mitigation Priorities

Priority was assessed by requesting that every new mitigation action submitted by County and municipal departments be ranked by each of the eight criteria factors. Each criterion is evaluated on a scale from 1 to 5, with 1 defined as strongly disagree and 5 as strongly agree.

- In the 2023 plan update, the STAPLEE+E methodology scale included an eighth criteria: equity. Therefore, the highest favorable score would be 40, meaning that said action scored 5 out of all eight categories.
- In the 2018 plan update, the STAPLEE methodology consisted of seven factors. This time, the highest favorable score was 35.
- In the 2013 plan update, the STAPLEE methodology consisted of seven factors. The mitigation actions were then prioritized between 1 and 84, with 1 being the highest prioritized action and 84 being the lowest.

Mitigation strategies/actions with the highest scores represent those mitigation initiatives that represent the highest priority. In addition to the STAPLEE+E Method, the Steering Committee identified those strategies/actions that represented the greatest importance and priority to the County. It should be noted that, although the STAPLEE+E Method provides a standardized process for assigning priority/importance across all participating jurisdictions, there may be additional factors and considerations that elevate the status of a particular mitigation strategy/action. This is why the Steering Committee's input is also an important consideration in this process.

Appendix A - Mitigation Actions

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Hamilton County

Mitigation Strategies & Actions

Mitigation Action	Address areas of concern that deal with flooding by updating storm infrastructure, maintaining or re-grading drainage ditches, or by property acquisition, demolition, and/or retrofitting.				
Action #	00-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	31/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C, D*** ***Goal 2, Objective A, B, C*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Home and basement flooding will be reduced				
Lead Agency/ Organization	Hamilton County Planning & Development, Hamilton County Engineer's Office, and Mayors, Councils, and Administrators of all participating jurisdictions.				
Supporting Agency/ Organization	HCSWCD, Local Public Works				
Participating Jurisdictions	All Jurisdictions				
Implementation Plan					
Project Duration	3 to 7 years		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	FMA, BRIC, CDBG, or local funding		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Identify areas that may be most impacted by extreme weather events including urban flooding, erosion, landslide and urban heat island, using GIS mapping. Evaluate impacted communities, educate, and share results.				
Action #	00-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 4, Objective A, B**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incidents, Flood (Flash), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Better land use planning to avoid future property loss				
Lead Agency/ Organization	CAGIS				
Supporting Agency/ Organization	Hamilton County EMHSA				

Mitigation Action	Identify areas that may be most impacted by extreme weather events including urban flooding, erosion, landslide and urban heat island, using GIS mapping. Evaluate impacted communities, educate, and share results.		
Participating Jurisdictions	All Jurisdictions		
Implementation Plan			
Project Duration	2 years	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	County General Funds, City Funding	**Estimated Cost**	**Medium** ($10,000 to $100,000)

Mitigation Action	Protecting the Water Treatment facility power by burying the above ground electrical wires and install an automatic generator for backup power				
Action #	00-03	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C, D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A*** ***Goal 4, Objective A, B, C, D***		**Project Status**	Deleted	
Hazard(s) Mitigated	Infrastructure and Structural Failure (e.g., Bridge Collapse), Public Health Emergency (e.g., Pandemic)				
Benefits (Loss Avoided)	Reduces the risk of fire and power outages due to downed lines.				
Lead Agency/ Organization	City of Loveland Public Works				
Supporting Agency/ Organization					
Participating Jurisdictions	City of Loveland				
Implementation Plan	This action is covered by the City of Loveland.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	HMPG		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Build strong relationships with County/Village/Town leadership to decrease misinformation and increase timely accurate medical information through multiple channels to build trust, prevent disease and reduce harm. Share actions save lives – SAFE services, condom use, seat belts, vaccination updates.				
Action #	00-04	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	32/40
Goal(s)/Objective(s) Addressed	**Goal 4, Objective A, B, D**		**Project Status**	New	
Hazard(s) Mitigated	Public Health Emergency (e.g., Pandemic)				
Benefits (Loss Avoided)	Disease prevention and increased public trust				
Lead Agency/ Organization	Hamilton County Public Health (HCPH)				
Supporting Agency/ Organization	All				
Participating Jurisdictions	All jurisdictions				
Implementation Plan					
Project Duration	1 to 3 years		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	CDC/ODH		**Estimated Cost**	**Medium** ($10,000 to $100,000)	

Mitigation Action	Conduct a study of the critical ditching inventory				
Action #	00-05	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*32/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	It sets the priority in the ditching program				
Lead Agency/ Organization	Hamilton County Engineer's Office				
Supporting Agency/ Organization	Local Public Works Agencies				
Participating Jurisdictions	Hamilton County and all participating jurisdictions public works agencies				
Implementation Plan					

Mitigation Action	Conduct a study of the critical ditching inventory		
Project Duration	7 Years	**Estimated Completion Date**	**Long Term** (to be completed in more than 7 years)
Potential Funding Source	OPWC Grants	**Estimated Cost**	$300,000

Mitigation Action	Increase cyber security protocols to reduce risk of intrusion and subsequent interruption of service				
Action #	00-06	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	**Goal 3, Objective B**		**Project Status**	New	
Hazard(s) Mitigated	Cyber Incident				
Benefits (Loss Avoided)	Protect infrastructure and personally identifying information from Cyber Incidents				
Lead Agency/ Organization	Hamilton County Educational Service Center (HCESC)				
Supporting Agency/ Organization	Local School Districts				
Participating Jurisdictions	Hamilton County and all applicable jurisdictions				
Implementation Plan					
Project Duration	5 years		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	School Safety Grants		**Estimated Cost**	$250,000	

Mitigation Action	Install generators or generator hookups on all identified shelter sites in Hamilton County and skilled nursing facilities.				
Action #	00-07	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*34/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective B*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Cyber Incident, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Mass Transportation				

Mitigation Action	Install generators or generator hookups on all identified shelter sites in Hamilton County and skilled nursing facilities.		
	Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Urban Fires, Wildfires		
Benefits (Loss Avoided)	Protect Critical Infrastructure from Utility Failure and Interruptions		
Lead Agency/ Organization	Individual Jurisdiction Administrators		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	All Local Jurisdictions		
Implementation Plan	Identify potential shelter locations and identify the need for generators		
Project Duration	7 Years	**Estimated Completion Date**	**Long Term** (to be completed in more than 7 years)
Potential Funding Source	SHSP, BRIC	**Estimated Cost**	$1,000,000

Mitigation Action	Development of a Hamilton County Sustainability Plan				
Action #	00-08	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	29/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective A, B, C** **Goal 3, Objective A, B** **Goal 4, Objective A, B, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Mass Transportation Incident (e.g., Train Derailment), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Urban Fires, Wildfire				
Benefits (Loss Avoided)	Evaluates impacts of climate change and determines strategies to address vulnerabilities				
Lead Agency/ Organization	Department of Environmental Services				
Supporting Agency/ Organization	P+D, Conservation District, EMHSA, County Public Health				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Similar to the Cincinnati's Green Plan, and contribute to their plan, BOCC in Hamilton County has been shifting in this direction but have completely restricted funds.				
Project Duration	3 Years		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	

Mitigation Action	Development of a Hamilton County Sustainability Plan		
Potential Funding Source	Infrastructure Bill	**Estimated Cost**	TBD

Mitigation Action	Integrate geotechnical requirements in communities that currently do not have this policy in place				
Action #	00-09	**Year Initiated**	2018	**STAPLEE Prioritization Score**	23/35
Goal(s)/Objective(s) Addressed	Goal 2, Objective B		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Landslide, Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion)				
Benefits (Loss Avoided)	Mitigated future losses/damages				
Lead Agency/ Organization	Hamilton County Soil & Water Conservation District				
Supporting Agency/ Organization	Hamilton County Planning & Development, Hamilton County Engineer's Office, Local Community Leaders				
Participating Jurisdictions	Hamilton County and all applicable jurisdictions				
Implementation Plan	Some communities under the Stormwater District regulations do not have geotechnical requirements. Future issues could be alleviated if local communities have at least a way of requiring geotechnical studies and monitoring on projects within jurisdictions that are not being served by the Geotech requirements of the earthwork regulations.				
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in more than 7 years)	
Potential Funding Source	FEMA, local resource		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Coordinate with realtors and prospective home buyers regarding landslide vulnerability				
Action #	00-10	**Year Initiated**	2018	**STAPLEE Prioritization Score**	20/35
Goal(s)/Objective(s) Addressed	Goal 3, Objective A		**Project Status**	Ongoing	
Hazard(s) Mitigated	Landslide				
Benefits (Loss Avoided)	Educate and inform residents regarding hazard risks				

Mitigation Action	Coordinate with realtors and prospective home buyers regarding landslide vulnerability		
Lead Agency/ Organization	Hamilton County Soil and Water Conservation District		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning & Development, Hamilton County Engineer's Office, Realtors, Local Community Leaders		
Participating Jurisdictions	Hamilton County and all applicable jurisdictions		
Implementation Plan	Coordinate with realtors and prospective buyers by making available landslide potential maps and available geotechnical information on properties that they are interested in. Provide education materials to the real estate community or prospective buyers regarding this information.		
Project Duration	**TBD**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	FEMA, local resources	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Mitigate landslide risk on Aspen Point Court (Monte Vista B)				
Action #	00-11	**Year Initiated**	2018	**STAPLEE Prioritization Score**	23/35
Goal(s)/Objective(s) Addressed	Goal 1, Objective A		**Project Status**	**Completed**	
Hazard(s) Mitigated	Landslide				
Benefits (Loss Avoided)	Mitigate property damage				
Lead Agency/ Organization	Hamilton County Soil & Water Conservation District				
Supporting Agency/ Organization	Hamilton County Planning & Development, Hamilton County Engineer's Office				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Mitigate landslide risk at the location on Aspen Point Ct. (Monte Vista B)				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	FEMA, local resource		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Mitigate stream bank erosion along Eight Mile Road				
Action #	00-12	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*23/35*
Goal(s)/Objective(s) Addressed	*Goal 1, Objective A*		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine)				
Benefits (Loss Avoided)	Mitigate property damage from flooding				
Lead Agency/ Organization	Hamilton County Soil and Water Conservation District				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County				
Implementation Plan	Mitigate the streambank erosion concerns along Eight Mile Rd (Renner property and neighbors)				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	FMA, BRIC		**Estimated Cost**	**TBD**	

Mitigation Action	Enhance interoperable radio communications systems throughout the County				
Action #	00-13	**Year Initiated**	2018	**STAPLEE Prioritization Score**	23/35
Goal(s)/Objective(s) Addressed	Goal 1, Objective D		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Enhances life-safety and response capabilities				
Lead Agency/ Organization	Hamilton County Communications Center				
Supporting Agency/ Organization	Participating Jurisdictions				

Mitigation Action	Enhance interoperable radio communications systems throughout the County		
Participating Jurisdictions	Hamilton County and Participating Jurisdiction		
Implementation Plan	Enhance interoperable radio communications systems throughout the County.		
Project Duration	**TBD**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources, EMPG	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Elevating and/or mitigate roadways in low-lying areas prone to overland flooding				
Action #	00-14	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*23/35*
Goal(s)/Objective(s) Addressed	*Goal 1, Objective C*		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Mass Transportation Incident				
Benefits (Loss Avoided)	Reduce damages in low-lying areas prone to flooding. Reduce life-safety risk				
Lead Agency/ Organization	Hamilton County Engineer's Office				
Supporting Agency/ Organization	Hamilton County Soil and Water Conservation District, Hamilton County Planning & Development				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Engineer office compiling list of roads prone to flooding and cost benefit analysis.				
Project Duration	TBD		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Coordinate Conservation, Preservation, and Mitigation Actions with Community Development and Community Planning Divisions to Ensure Integration of Programs across all communities				
Action #	00-15	**Year Initiated**	2018	**STAPLEE Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	Goal 2, Objective B		**Project Status**	Ongoing	

Mitigation Action	Coordinate Conservation, Preservation, and Mitigation Actions with Community Development and Community Planning Divisions to Ensure Integration of Programs across all communities		
Hazard(s) Mitigated	Dam/Levee Failure, Drought, Earthquake, Flood (Riverine), Flood (Flash), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Wildfire, Hazardous Materials Incident		
Benefits (Loss Avoided)	Plan integration and community resiliency		
Lead Agency/ Organization	Hamilton County Planning & Development, Hamilton County EMHSA, Hamilton County Soil & Water, Hamilton County Engineer's Office		
Supporting Agency/ Organization	Participating Jurisdictions		
Participating Jurisdictions	Hamilton County and Participating Jurisdictions		
Implementation Plan	Coordinate conservation, preservation, and mitigation actions with Community Development and Community Planning Divisions to ensure integration of programs across all communities		
Project Duration	**TBD**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources and funds	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Work with communities not currently in the NFIP to adopt the program				
Action #	00-16	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*22/35*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Hamilton County Planning & Development, Ohio Dept of Natural Resources (ODNR) - Dam Safety				
Supporting Agency/ Organization	Hamilton County EMHSA, Applicable Jurisdictions				
Participating Jurisdictions	Hamilton County and Applicable Jurisdictions				
Implementation Plan	The County will work with communities not currently in the NFIP to eventually adopt the program, as appropriate. Hamilton County will continue to participate in the National Flood Insurance Program and develop actions that will reduce the damage to County infrastructure due to flash and riverine flooding.				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	local resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Provide information to property owners in flood-prone areas and the need for NFIP coverage				
Action #	00-17	**Year Initiated**	2018	**STAPLEE Prioritization Score**	19/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Hamilton County Planning & Development, Ohio Dept of Natural Resources (ODNR) - Dam Safety				
Supporting Agency/ Organization	Hamilton County EMHSA, Applicable Jurisdictions				
Participating Jurisdictions	Hamilton County and Applicable Jurisdictions				
Implementation Plan	Provide information to property owners in flood-prone areas and the need for NFIP coverage				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Enhance security at critical public safety technology infrastructure site				
Action #	00-18	**Year Initiated**	2018	**STAPLEE Prioritization Score**	*24/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Hardening of critical infrastructure				
Lead Agency/ Organization	Hamilton County Communications Center				

Mitigation Action	Enhance security at critical public safety technology infrastructure site		
Supporting Agency/ Organization	Hamilton County EMHSA, Participating Jurisdictions		
Participating Jurisdictions	Hamilton County and Participating Jurisdictions		
Implementation Plan	Enhance security at critical public safety technology infrastructure sites. Specifically, ensure the security of radio system tower sites.		
Project Duration	**TBD**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** ($10,000 to $100,000)

Mitigation Action	Procure generators for Hamilton County Public Health				
Action #	00-19	**Year Initiated**	2018	**STAPLEE Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Hamilton County Public Health				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County				
Implementation Plan	Procure backup generator for the main building and Backup power supply for the refrigeration units that hold vaccines in the pharmacy across the street.				
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, FEMA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Develop a county-wide program to purchase repetitive loss properties and to develop a program to monitor locations of buy-outs. Encourage local jurisdictions to institute a buy-out plan for flood prone structures.				
Action #	00-20	**Year Initiated**	*2007*	**Prioritization Score**	*22/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C*** ***Goal 2, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine)				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	Hamilton County Planning & Development				
Supporting Agency/ Organization	Hamilton County EMHSA, Applicable Jurisdictions				
Participating Jurisdictions	Hamilton County and Applicable Jurisdictions (i.e. Arlington Heights, Cincinnati, Harrison, Loveland, Reading, Addyston, Cleves, Fairfax, North Bend)				
Implementation Plan	Identify and mitigate repetitive loss properties. Develop a county-wide program to purchase and monitor repetitive loss properties.				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	FEMA, local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop an enhanced county-wide emergency notification communication system				
Action #	00-21	**Year Initiated**	2013	**Prioritization Score**	28/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	**Completed**	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Timely warning system for Hamilton County residents				
Lead Agency/ Organization	Hamilton County EMHSA				
Supporting Agency/ Organization	Hamilton County Communications Center				

Mitigation Action	Develop an enhanced county-wide emergency notification communication system		
Participating Jurisdictions	Hamilton County and Applicable/Interested Jurisdictions		
Implementation Plan	Develop an enhanced county-wide emergency notification communication system. Continue to improve the notification system and assist interested jurisdictions to participate and enroll their residents.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop a continuity of operations plan				
Action #	00-22	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	**Completed**	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Continuity of operations and essential functions during a major disaster.				
Lead Agency/ Organization	Hamilton County EMHSA				
Supporting Agency/ Organization	Applicable Hamilton County Departments and Agencies				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Develop a continuity of operations plan. Work with County departments and agencies to develop the plan.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources, FEMA, OCRA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads				
Action #	00-23	**Year Initiated**	2013	**Prioritization Score**	20/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A** **Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Winter Storm, Hazardous Materials Incident, Infrastructure Failure, Mass Transportation Incident				
Benefits (Loss Avoided)	Improve safety on roadways				
Lead Agency/ Organization	Hamilton County Engineer's Office				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County				
Implementation Plan	Active Objective				
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	ODNR, EPA, FEMA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct flood-specific impact studies				
Action #	00-24	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Prevent development and projects in flood-prone areas				
Lead Agency/ Organization	Hamilton County Engineer's Office				
Supporting Agency/ Organization	Army Corp of Engineers				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Hamilton County Engineers Office will conduct flood impact studies prior to the initiation of projects that may have direct or indirect flood impacts. The County will work with the Army Corp of Engineers on impact studies, as appropriate.				

Mitigation Action	Conduct flood-specific impact studies		
Project Duration	TBD	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	FEMA, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues				
Action #	00-25	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Landslide, Flood (Flash), Severe Thunderstorm, Landslide (Sinkhole/Karst)				
Benefits (Loss Avoided)	Identify hazard-prone areas in the County				
Lead Agency/ Organization	Hamilton County Planning & Development, Hamilton County Engineer's Office				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County and all applicable jurisdictions				
Implementation Plan	Hamilton County Engineer's Office assesses and studies current landslide issues in the County. Hamilton County Planning & Development investigates and studies potential landslide areas and their impacts. These departments primarily look at landslide issues in the unincorporated areas of the County.				
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Community Development Grants, OCRA, FEMA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Develop landslide mapping and incorporate into CAGIS				
Action #	00-26	**Year Initiated**	2013	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Identify and monitor problem areas.				

Mitigation Action	Develop landslide mapping and incorporate into CAGIS		
Lead Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Planning & Development, CAGIS		
Supporting Agency/ Organization			
Participating Jurisdictions	Hamilton County		
Implementation Plan	Develop landslide mapping and incorporate into CAGIS.		
Project Duration	**TBD**	**Estimated Completion Date**	Ongoing
Potential Funding Source	FEMA, FHWA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options				
Action #	00-27	**Year Initiated**	2013	**Prioritization Score**	16/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objectives C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect infrastructure and building stock				
Lead Agency/ Organization	Hamilton County Board of County Commissioners				
Supporting Agency/ Organization	Metropolitan Sewer District, Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning & Development				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Metropolitan Sewer District manages the sewer lines and Hamilton County Stormwater District is responsible for storm water. There has not been a comprehensive county-wide plan on mitigating storm and sewer lines with regards to the impacts of flooding since the 1960s and no one entity would oversee a planning project of this magnitude. Multiple departments/agencies would be involved if funding were available.				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	00-28	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the County to remove snow and ensure the life-safety and economic viability of the County during severe winter storm incidents.				
Lead Agency/ Organization	Hamilton County Engineer's Office				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County				
Implementation Plan	Enhance snow removal equipment and supplies. These resources will be utilized on County roads.				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	USDOT, FHWA, ODOT, FEMA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop and implement a water conservation plan				
Action #	00-29	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Drought, Extreme Heat Incident				
Benefits (Loss Avoided)	Ensure water conservation efforts and long-term sustainability efforts are part of the strategic vision of the County.				
Lead Agency/ Organization	Hamilton County Soil and Water Conservation District				
Supporting Agency/ Organization	Hamilton County Planning & Development				
Participating Jurisdictions	Hamilton County				
Implementation Plan					

Mitigation Action	Develop and implement a water conservation plan		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 5 years)
Potential Funding Source	ODNR, FEMA, FHWA, USDA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct a study to re-engineer the railroad crossings				
Action #	00-30	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Better understand rail transportation issues in the County				
Lead Agency/ Organization	Hamilton County Engineer's Office				
Supporting Agency/ Organization	Railroads				
Participating Jurisdictions	Hamilton County				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	ODOT, EPA, FHWA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct a study to improve/redesign problematic intersections and traffic signage				
Action #	00-31	**Year Initiated**	2013	**Prioritization Score**	18/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Identify and better understand road transportation issues in order to improve traffic flow and reduce fatalities and casualties				

Mitigation Action	Conduct a study to improve/redesign problematic intersections and traffic signage		
Lead Agency/ Organization	Hamilton County Engineer's Office		
Supporting Agency/ Organization			
Participating Jurisdictions	Hamilton County		
Implementation Plan	Conduct a study to improve/redesign problematic intersections and traffic signage		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	FEMA, ODOT, FHWA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Improve stream maintenance after severe weather				
Action #	00-32	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	**Completed**	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flooding				
Lead Agency/ Organization	Hamilton County Engineer's Office				
Supporting Agency/ Organization	Hamilton County Soil & Water Conservation District				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Hamilton County Engineer's Office is responsible for clearing logjams at County-owned culverts. On private property, the landowner is responsible for maintaining the conveyance capacity of streams flowing through their property so as not to negatively impact their neighbor's property. Hamilton County Soil & Water Conservation District provides advice to residents following a major storm incident. In years past, the County received state funds to manage the removal of logjams across the County working with local jurisdictions.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	ODOT, EPA, FHWA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Relocation of homes				
Action #	00-33	**Year Initiated**	2013	**Prioritization Score**	40/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective a**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine)				
Benefits (Loss Avoided)	Mitigate flooding, reduce flood insurance risks				
Lead Agency/ Organization	County and local floodplain managers				
Supporting Agency/ Organization	Hamilton County Planning & Development, municipal planning and development offices				
Participating Jurisdictions	Hamilton County and all participating jurisdictions				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	FMA, HMGP, CDBG		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Mitigate the Fernald Enrichment Plant				
Action #	00-34	**Year Initiated**	*2007*	**Prioritization Score**	
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Project is no longer relevant or applicable.				
Lead Agency/ Organization					
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County				
Implementation Plan					

Mitigation Action	Mitigate the Fernald Enrichment Plant		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source		**Estimated Cost**	

Mitigation Action	Develop a spontaneous volunteer management plan				
Action #	00-35	**Year Initiated**	2013	**Prioritization Score**	73/84
Goal(s)/Objective(s) Addressed	**Goal 3, Objective B**		**Project Status**	**Completed**	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Risk reduction to life safety issues with emergent volunteers				
Lead Agency/ Organization	EMHSA				
Supporting Agency/ Organization	Public Health, Tri-State COAD				
Participating Jurisdictions	Hamilton County				
Implementation Plan	The plan was developed and last updated in 2020. Complete as of 2023.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	House a county-wide Hazmat response unit				
Action #	00-36	**Year Initiated**	*2013*	**Prioritization Score**	*76/84*

Mitigation Action	House a county-wide Hazmat response unit		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***	**Project Status**	**Completed**
Hazard(s) Mitigated	Hazardous Materials Incident		
Benefits (Loss Avoided)	Hazardous materials releases and spills		
Lead Agency/ Organization	Hamilton County EMHSA		
Supporting Agency/ Organization			
Participating Jurisdictions	Hamilton County		
Implementation Plan	Completed as of 2023		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**TBD**

Mitigation Action	Upgrade existing warning sirens and install warning sirens				
Action #	00-37	**Year Initiated**	2013	**Prioritization Score**	65/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, D**		**Project Status**	**Completed**	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	County EMHSA				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions				

Mitigation Action	Upgrade existing warning sirens and install warning sirens				
Implementation Plan	This project was completed countywide in 2012. Hamilton County EMHSA is responsible for managing the 191 outdoor warning sirens throughout Hamilton County. The sirens are on a regular maintenance schedule and are used to notify residents who are outdoors of tornado warnings or sightings within Hamilton County. The Outdoor Warning Sirens are one prong of the Alert Hamilton County network for emergency public notification, which may reduce the risk of fatalities and casualties during specific hazards by encouraging residents to Take Cover, Tune In, and Take Action.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	**Completed**		**Estimated Cost**	**Completed**	

Mitigation Action	Move electrical panels, mechanical, generators above base flood elevation (BFE) in facilities located in flood-prone areas				
Action #	00-38	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*20/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Local Community Leaders				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Facilities				
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions				
Implementation Plan	Move electrical panels, mechanical, generators above base flood elevation (BFE) in facilities located in flood-prone areas				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	HMGP, BRIC, local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Assist residents in the construction and purchase of community and residential safe rooms.				
Action #	00-39	**Year Initiated**	2018	**STAPLEE Prioritization Score**	24/84

Mitigation Action	Assist residents in the construction and purchase of community and residential safe rooms.		
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**	**Project Status**	Ongoing
Hazard(s) Mitigated	High Wind and Tornado		
Benefits (Loss Avoided)	Life safety		
Lead Agency/ Organization	Hamilton County EMHSA, Local Community Leaders		
Supporting Agency/ Organization	Ohio Emergency Management		
Participating Jurisdictions	Hamilton County and all participating jurisdictions		
Implementation Plan	The Ohio Safe Room Rebate Program was developed by the Ohio Emergency Management Agency to provide a rebate for the purchase and installation of safe rooms for Ohio homeowners. Homeowners that are selected and qualify for the rebate program are eligible for a rebate of 75% of the allowable costs that was used to install and construct their safe room, up to a maximum of $4,875. This is a "REBATE" program, only AFTER the installation, construction, and payment of a safe room will selected and qualified applicants be reimbursed for eligible costs.		
Project Duration	**TBD**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	OEMA, CDBG, HMGP, HUD	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Trim trees to minimize the amount/duration of power outages				
Action #	00-40	**Year Initiated**	*2013*	**Prioritization Score**	*24/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Reduce power failure				
Lead Agency/ Organization	Duke Energy				
Supporting Agency/ Organization	Participating Jurisdictions, Hamilton County Planning Development				
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions				

Mitigation Action	Trim trees to minimize the amount/duration of power outages		
Implementation Plan	Duke Energy conducts tree trimming and mitigation on an as needed basis and already has incorporated this mitigation practice as part of its daily operations.		
Project Duration	**TBD**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	FEMA Public Assistance Grants	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Assess and prioritize the burying of utilities (i.e., especially in areas where new development is occurring)				
Action #	00-41	**Year Initiated**	2013	**Prioritization Score**	24/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Riverine), Flood (Flash), Landslide, Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Reduce power failure				
Lead Agency/ Organization	Duke Energy				
Supporting Agency/ Organization	Participating Jurisdictions, Hamilton County Planning and Development				
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions				
Implementation Plan	Duke Energy already incorporates this practice in new developments, as appropriate. This mitigation activity is part of its ongoing daily operations.				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Promote acquisition of NOAA weather radios for all critical facilities				
Action #	00-42	**Year Initiated**	*2007*	**Prioritization Score**	*19*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion),				

Mitigation Action	Promote acquisition of NOAA weather radios for all critical facilities		
	Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Improved timeliness and reliability of warning and notification		
Lead Agency/ Organization	Participating Jurisdictions, Local Fire Departments		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	BRIC, HMGP	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct a commodity flow allocation study for rail and road transportation				
Action #	00-43	**Year Initiated**	2007	**Prioritization Score**	21
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	**Completed**	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Better understand what hazardous materials are transported through the County				
Lead Agency/ Organization	Hamilton County LEPC				
Supporting Agency/ Organization	Participating Jurisdictions				
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions				
Implementation Plan	Completed as of 2023. Hamilton County LEPC hired a contractor to complete a commodity flow study. The study is now available for official use only upon request.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	ODOT, FEMA, HMEP Grant		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Develop and implement public outreach and education programs on disaster awareness				
Action #	00-44	**Year Initiated**	*2013*	**Prioritization Score**	*27/84*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Inform and educate Hamilton County residents				
Lead Agency/ Organization	Hamilton County EMHSA				
Supporting Agency/ Organization	Participating Jurisdictions				
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions				
Implementation Plan	Develop and implement public outreach and education programs on disaster awareness. Hamilton County EMHSA will assist participating jurisdictions in their outreach and education efforts. Activities may include: • Warning, public information, and education materials; • Family disaster plans and supply kits; • Preparedness events • Web site or content for City/Township/Village Web sites • Content for municipal newsletters, brochures, etc. • Trainings				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Obtain additional smoke detectors for community distribution				
Action #	00-45	**Year Initiated**	2013	**Prioritization Score**	27/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	**Completed**	

Mitigation Action	Obtain additional smoke detectors for community distribution		
Hazard(s) Mitigated	Fire		
Benefits (Loss Avoided)	Life safety		
Lead Agency/ Organization	American Red Cross Greater Cincinnati/Ohio River Valley Chapter		
Supporting Agency/ Organization	Local Fire Departments		
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions		
Implementation Plan	American Red Cross provides free smoke detectors to all Hamilton County residents upon request. Completed as of 2023.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Enhancement and expansion of green space				
Action #	00-46	**Year Initiated**	*2007*	**Prioritization Score**	*20*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Landslide				
Benefits (Loss Avoided)	Mitigate property damage and losses				
Lead Agency/ Organization	Hamilton County Planning & Development, Participating Jurisdictions				
Supporting Agency/ Organization	Hamilton County EMHSA, Clean Ohio, Hamilton County Soil and Water Conservation District				
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions				
Implementation Plan	Develop partnerships with organizations, such as Clean Ohio, to identify green space opportunities in the County. Example of past and ongoing projects are included here: **Ohio Green Space Conservation Program** Green Umbrella's Green Spaces Action Team has mapped protected green spaces for 2004, 2016, and 2017 (https://greenumbrella.org/Greenspace				
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	

Mitigation Action	Enhancement and expansion of green space		
Potential Funding Source	Local resources, Clean Ohio, HMGP	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	00-47	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Participating Jurisdictions and their Community Leaders				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Facilities				
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions (i.e. Arlington Heights, Cheviot, Cincinnati, Forest Park, Indian Hills, Lincoln Heights, Madeira, Mariemont, Milford, North Bend, North College Hill, Norwood, Silverton, Wyoming, Cleves, Golf Manor, Terrace Park, Woodlawn)				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources, HMGP, BRIC		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Distribute weather radios				
Action #	00-48	**Year Initiated**	*2007*	**Prioritization Score**	*24*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	

Mitigation Action	Distribute weather radios		
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Life Safety, preparedness measures		
Lead Agency/ Organization	Hamilton County EMHSA		
Supporting Agency/ Organization			
Participating Jurisdictions	Hamilton County and All Participating Jurisdictions		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	**Completed**	**Estimated Cost**	**Completed**

Mitigation Action	Strengthen State of Ohio's Levee Safety Program				
Action #	00-49	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*27/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective A, C*** ***Goal 4, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure				
Benefits (Loss Avoided)	Flooding, inundation				
Lead Agency/ Organization	Hamilton County, Ohio Dept of Natural Resources (ODNR) - Dam Safety				
Supporting Agency/ Organization					
Participating Jurisdictions	State of Ohio and all its jurisdictions				
Implementation Plan					

Mitigation Action	Strengthen State of Ohio's Levee Safety Program		
Project Duration	10 years	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	FMA, USACE	**Estimated Cost**	**High** (more than $100,000)

Mitigation Action	Continue to encourage dam owners to rehabilitate high hazard potential dams (HHPD), increase the number of EAPs (Emergency Action Plans), and develop inundation maps.				
Action #	00-50	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	27/40
Goal(s)/Objective(s) Addressed	**Goal 4, Objective A, B**		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure				
Benefits (Loss Avoided)	Flooding, inundation				
Lead Agency/ Organization	Hamilton County, Ohio Dept of Natural Resources (ODNR) - Dam Safety				
Supporting Agency/ Organization	Cincinnati Area Geographic Information System (CAGIS)				
Participating Jurisdictions	State of Ohio, Hamilton County, and all its participating jurisdictions				
Implementation Plan					
Project Duration	10 years		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	NDSP, state and local resources		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Maintain a controlled burn program for Great Parks prairies that includes fire breaks at appropriate locations.				
Action #	00-51	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 2, Objective C***		**Project Status**	New	

Mitigation Action	Maintain a controlled burn program for Great Parks prairies that includes fire breaks at appropriate locations.		
Hazard(s) Mitigated	Urban Fires, Wildfire		
Benefits (Loss Avoided)	Reduces potential of unintended prairie fires causing property damage		
Lead Agency/ Organization	Great Parks of Hamilton County		
Supporting Agency/ Organization	Local fire departments in affected jurisdictions		
Participating Jurisdictions	Hamilton County		
Implementation Plan	This program is intended to protect and maintain the local ecosystem and promotes biodiversity, while reducing the fuel load in the case of unintended fires.		
Project Duration	**5 years**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources	**Estimated Cost**	**Low to Medium** ($5,000-$30,000)

Mitigation Action	Great Parks will re-evaluate and update existing flood related programs and documents, once the documents are updated, they will be reviewed annually.				
Action #	00-52	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	40/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C Goal 2, Objective C Goal 3, Objective B**		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash), Flood (Riverine)				
Benefits (Loss Avoided)	Loss of life and property				
Lead Agency/ Organization	Great Parks of Hamilton County				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Hamilton County				
Implementation Plan	Plans include dam emergency action plans and flood evacuation plans for high risk locations.				

Mitigation Action	Great Parks will re-evaluate and update existing flood related programs and documents, once the documents are updated, they will be reviewed annually.		
Project Duration	**5 years**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Low to Medium** ($1,000-$15,000)

Mitigation Action	Purchase, protect, and manage property that contains rivers, streams, lakes, ponds, and wetlands.				
Action #	00-53	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D Goal 4, Objective A, B**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion)				
Benefits (Loss Avoided)	Reduce downstream flooding, cleaner waterways				
Lead Agency/ Organization	Great Parks of Hamilton County				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County				
Implementation Plan	Protection, restoration, and management of these areas reduce downstream flooding and provide cleaner waterways.				
Project Duration	**Local Resources**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	CBDG, HMGP, FMA, EPA		**Estimated Cost**	High (up to $1,000,000)	

Mitigation Action	As the largest land owner in Hamilton County with property adjacent to all four major rivers conserving natural and cultural heritage sites through conservation, preservation, restoration, and mitigation to safe guard public lands for present and future generations				
Action #	00-54	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash), Flood (Riverine)				
Benefits (Loss Avoided)	Flood mitigation, preservation of natural and cultural sites.				
Lead Agency/ Organization	Great Parks of Hamilton County				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**TBD**	

Mitigation Action	Coordinate consumption, preservation, and mitigation with community development and planning divisions				
Action #	00-55	**Year Initiated**	2023	**STAPLEE Prioritization Score**	24/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (flash), Flood (riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm, Wildfire				
Benefits (Loss Avoided)	Reduces life and property loss due to development in hazard prone areas				
Lead Agency/ Organization	Hamilton County Planning & Development and Hamilton County Engineers, all municipal planning and development departments				

Mitigation Action	Coordinate consumption, preservation, and mitigation with community development and planning divisions		
Supporting Agency/ Organization			
Participating Jurisdictions	All Jurisdictions		
Implementation Plan			
Project Duration	**5 years**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**TBD**

Addyston – Village

Mitigation Strategies & Actions

Mitigation Action	Stabilization of their Infrastructure/Utilities.				
Action #	01-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C, D*** ***Goal 2, Objective A*** ***Goal 3, Objective A, B*** ***Goal 4, Objective B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide				
Benefits (Loss Avoided)	Preventing the loss of homes and lots				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Addyston Village				
Implementation Plan					
Project Duration	**5 years**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	FEMA, EPA, OPWC, Ohio Water Authority		**Estimated Cost**	Approximately $1.5 million	

Mitigation Action	Institute a buy-out plan for flood prone structures				
Action #	01-02	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 2, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	Village of Addyston Council				

Mitigation Action	Institute a buy-out plan for flood prone structures		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning & Development		
Participating Jurisdictions	Addyston Village		
Implementation Plan	Identify and mitigate repetitive loss properties.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	FMA, CDBG, HMGP, Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	01-03	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Addyston Village				
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Addyston Village residents can sign up for.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	TBD	

Mitigation Action	Equip existing facilities as safe rooms/shelters				
Action #	01-04	**Year Initiated**	2013	**Prioritization Score**	29/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase capability to safeguard and shelter individuals				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Addyston Village				
Implementation Plan	Make council chambers a safe room.				
Project Duration	**Long Term**		**Estimated Completion Date**	12/31/2028	
Potential Funding Source	FEMA, OCRA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Acquire transfer switches/ generators for all shelters				
Action #	01-05	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				

Mitigation Action	Acquire transfer switches/ generators for all shelters		
Lead Agency/ Organization	Village of Addyston Council		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Addyston Village		
Implementation Plan	Plan to acquire generator for village		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, HMGP, BRIC, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas				
Action #	01-06	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Flood (Riverine), Flood (Flash), Severe Winter Storm, High Wind and Tornado, Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Public education and outreach				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Addyston Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources, FEMA		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Establish mutual aid response agreements within the county				
Action #	01-07	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase coordination and collaboration				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization	Partnering Local Jurisdictions				
Participating Jurisdictions	Addyston Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (Less than $10,000)	

Mitigation Action	Acquire training, equipment and resources to handle small hazardous materials spills				
Action #	01-08	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)	Enhanced capabilities to respond to HAZMAT incidents				
Lead Agency/ Organization	Fire Dept. (Miami Township Fire), Village of Addyston Council				
Supporting Agency/ Organization	Hamilton County EMHSA				

Mitigation Action	Acquire training, equipment and resources to handle small hazardous materials spills		
Participating Jurisdictions	Addyston Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources, PHMSA HMEP, USDOT HMIT	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Harden bridges				
Action #	01-09	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Severe Winter Storm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect and strengthen infrastructure				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, ODOT				
Participating Jurisdictions	Addyston Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	PROTECT, BRIC, HMGP, ODOT		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Implement industrial site buffering				
Action #	01-10	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective 2**		**Project Status**	Ongoing	

Mitigation Action	Implement industrial site buffering		
Hazard(s) Mitigated	Hazardous Materials Incident		
Benefits (Loss Avoided)	Life safety, environmental protection		
Lead Agency/ Organization	Village of Addyston Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Addyston Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	EPA, PHMSA, HMEP	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Institute a Local Emergency Planning Committee				
Action #	01-11	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase preparedness				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Addyston Village				
Implementation Plan					

Mitigation Action	Institute a Local Emergency Planning Committee		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (Less than $10,000)

Mitigation Action	Develop a plan for animal protection and subsistence				
Action #	01-12	**Year Initiated**	2013	**Prioritization Score**	24/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Shelter animals and pets during disasters				
Lead Agency/ Organization	Village of Addyston Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Tri-State CART, Cincinnati SPCA				
Participating Jurisdictions	Addyston Village				
Implementation Plan					
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	**Deleted**		**Estimated Cost**	**Deleted**	

Amberley – Village

Mitigation Strategies & Actions

Mitigation Action	Upgrade current stormwater infrastructure to minimize flooding of residential homes and roadways.				
Action #	02-01	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	40/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D Goal 2, Objective C Goal 3, Objective A Goal 4, Objective B, D**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), High Wind and Tornado				
Benefits (Loss Avoided)	Reduce power outages and auto accidents				
Lead Agency/ Organization	Amberley Village				
Supporting Agency/ Organization	Amberley Village Maintenance Department/Symmes Township				
Participating Jurisdictions	Amberley Village, Symmes Township				
Implementation Plan	Focus on right of way vegetation and trees to open up traffic sight ways and remove dead large trees from the right of ways to reduce road closures and power outages.				
Project Duration	**2 years**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	HMGP, BRIC, Local Resources		**Estimated Cost**	High ($1,000,000)	

Proposed Mitigation Action	Develop flooding mitigation actions, underground utilities, and upgrade building generators				
Action #	02-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	
Goal(s)/Objective(s) Addressed			**Project Status**	**Deleted**	
Hazard(s) Mitigated					
Benefits (Loss Avoided)					
Lead Agency/ Organization					
Supporting Agency/ Organization					

Proposed Mitigation Action	Develop flooding mitigation actions, underground utilities, and upgrade building generators		
Participating Jurisdictions			
Implementation Plan			
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source		**Estimated Cost**	

Mitigation Action	Assess the feasibility of acquiring a location on Willowbrook Ln to reduce roadway flooding.				
Action #	02-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	24/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	This project is to help prevent flooding of roadways.				
Lead Agency/ Organization	Amberley Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Amberley Village				
Implementation Plan	Studying the possibilities to purchase a residence on Willowbrook Ln for a future stormwater detention pond.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	General fund and stormwater fund		**Estimated Cost**	**High** ($250,000-$300,000)	

Mitigation Action	Increase the size of storm pipe to prevent flooding of roadway on Fair Oaks Drive				
Action #	02-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*27/35*

Mitigation Action	Increase the size of storm pipe to prevent flooding of roadway on Fair Oaks Drive		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***	**Project Status**	Ongoing
Hazard(s) Mitigated	Flood (Flash)		
Benefits (Loss Avoided)	Mitigate flooding		
Lead Agency/ Organization	Amberley Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Amberley Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Stormwater Fund	**Estimated Cost**	**Medium** ($50,000-$80,000)

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	02-05	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Amberley Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Amberley Village				

Mitigation Action	Acquire transfer switches/generators for all shelters		
Implementation Plan			
Project Duration	**2 years**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, HMGP, BRIC, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct a study to evaluate the engineering and potential use of the golf course pond levee				
Action #	02-06	**Year Initiated**	*2013*	**Prioritization Score**	*66/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	**Deferred**	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash)				
Benefits (Loss Avoided)	Property protection				
Lead Agency/ Organization	Amberley Village Council, Hamilton County EMHSA				
Supporting Agency/ Organization					
Participating Jurisdictions	Amberley Village				
Implementation Plan					
Project Duration	**Deferred**		**Estimated Completion Date**	**Deferred**	
Potential Funding Source	FEMA, OCRA		**Estimated Cost**	**TBD**	

Anderson – Township

Mitigation Strategies & Actions

Mitigation Action	Contact private properties to inform them of potential private infrastructure issues (e.g., Bridges, drives, etc.) that could impact service delivery.				
Action #	03-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*40/40*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Extreme Cold Incident, Flood (Flash), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Urban Fire				
Benefits (Loss Avoided)	Will reduce issues with emergency response to private property and lower the risk of life and property damage.				
Lead Agency/ Organization	Anderson Township Trustees				
Supporting Agency/ Organization	Hamilton County Engineer's Office				
Participating Jurisdictions	Anderson Township and Hamilton County				
Implementation Plan					
Project Duration	**2 years**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	TBD	

Mitigation Action	Compile a list of backup generators throughout the Township. Procure generators, as needed.				
Action #	03-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				

Mitigation Action	Compile a list of backup generators throughout the Township. Procure generators, as needed.		
Lead Agency/ Organization	Township Trustees		
Supporting Agency/ Organization			
Participating Jurisdictions	Anderson Township		
Implementation Plan	Compile a list of backup generators throughout the Township and document their fuel source.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Funds	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Identify a new site for solid/debris waste				
Action #	03-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*23/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B, C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Debris management				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	2 years		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Open Space Acquisition				
Action #	03-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	20/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine and Flash), Landslide				
Benefits (Loss Avoided)	Mitigate property damage and losses				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	Ongoing		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources, Clean Ohio, FMA, CDBG		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Work with ODOT on digital message signs				
Action #	03-05	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*25/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B, D***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Mass Transportation Incident				
Benefits (Loss Avoided)	Ensure safety of motorists				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	ODOT				
Participating Jurisdictions	Anderson Township				
Implementation Plan					

Mitigation Action	Work with ODOT on digital message signs		
Project Duration	3 years	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local and State Funds	**Estimated Cost**	**Medium** ($100,000)

Mitigation Action	Conservation of fragile areas				
Action #	03-06	**Year Initiated**	2018	**STAPLEE Prioritization Score**	22/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine and Flash), Landslide				
Benefits (Loss Avoided)	Conservation and sustainability				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	ODNR, Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Public Health PODS: Collaborate with the health department on point of dispensing operations				
Action #	03-07	**Year Initiated**	*N/A*	**Prioritization Score**	*23*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Public Health Emergency				
Benefits (Loss Avoided)	Ensure quick and coordinated POD operations and the safety of residents.				

Mitigation Action	Public Health PODS: Collaborate with the health department on point of dispensing operations		
Lead Agency/ Organization	Township Trustees		
Supporting Agency/ Organization	Hamilton County Public Health		
Participating Jurisdictions	Anderson Township		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Funds/Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Bi-annual inspections of six (6) Township bridges				
Action #	03-08	**Year Initiated**	N/A	**Prioritization Score**	24
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Ensure bridges are structurally sound				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** ($10,000)	

Mitigation Action	Enhance firewalls and backup or replicator servers				
Action #	03-09	**Year Initiated**	*N/A*	**Prioritization Score**	*25*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Cyber Incident				
Benefits (Loss Avoided)	Ensure IT systems are secure				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Procure battery backups for streetlights, signals, and generators for existing building (The Anderson Center, newly redeveloped schools, and phone lines)				
Action #	03-10	**Year Initiated**	N/A	**Prioritization Score**	26
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to key assets				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					

Mitigation Action	Procure battery backups for streetlights, signals, and generators for existing building (The Anderson Center, newly redeveloped schools, and phone lines)		
Participating Jurisdictions	Anderson Township		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Conduct hazardous materials inspections				
Action #	03-11	**Year Initiated**	*N/A*	**Prioritization Score**	*23*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Ensure safety of residents and prevent future HAZMAT incidents				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** ($10,000)	

Mitigation Action	Establish mutual aid for civil unrest. These may include: Contracting with Hamilton County, continuous training, vehicles for crisis deployment, riot gear				
Action #	03-12	**Year Initiated**	*N/A*	**Prioritization Score**	22
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D** **Goal 3, Objective B**		**Project Status**	Ongoing	

Mitigation Action	Establish mutual aid for civil unrest. These may include: Contracting with Hamilton County, continuous training, vehicles for crisis deployment, riot gear		
Hazard(s) Mitigated	Civil Disorder/Riot		
Benefits (Loss Avoided)	Increased civil disorder capabilities		
Lead Agency/ Organization	Township Trustees		
Supporting Agency/ Organization			
Participating Jurisdictions	Anderson Township		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Water depth markers				
Action #	03-13	**Year Initiated**	*N/A*	**Prioritization Score**	*10*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Flooding (Riverine), Flooding (Flash)				
Benefits (Loss Avoided)	Life and vehicular property loss/damage				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**	TBD	

Mitigation Action	Green spaces: purchased properties along streams and increasing water previous surface				
Action #	03-14	**Year Initiated**	*N/A*	**Prioritization Score**	13
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Flooding (Riverine), Flooding (Flash)				
Benefits (Loss Avoided)	Property loss				
Lead Agency/ Organization	HSEMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan	This project overlaps with other more detailed county-wide mitigation actions and can be deleted.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	FMA		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Mutual aid agreements with several agencies for road clean up				
Action #	03-15	**Year Initiated**	*N/A*	**Prioritization Score**	*17*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	Completed	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)					
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					

Mitigation Action	Mutual aid agreements with several agencies for road clean up		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Code red and social media implementation				
Action #	03-16	**Year Initiated**	N/A	**Prioritization Score**	25
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Life safety and property protection through notification and community outreach				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan	This action can be deleted because it has been addressed through countywide activities facilitated by Hamilton County EMHSA.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Improved storm water systems – regional, dam and levee studies				
Action #	03-17	**Year Initiated**	*N/A*	**Prioritization Score**	*24*

Mitigation Action	Improved storm water systems – regional, dam and levee studies		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 2, Objective C***	**Project Status**	Deleted
Hazard(s) Mitigated	Flooding (Flash)		
Benefits (Loss Avoided)	Property protection and insurance risk reduction		
Lead Agency/ Organization	Township Trustees		
Supporting Agency/ Organization			
Participating Jurisdictions	Anderson Township		
Implementation Plan	This action can be deleted because it has been addressed through countywide mitigation actions.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	BRIC, FMA, Local Resources	**Estimated Cost**	**TBD**

Mitigation Action	Township has snowplow drivers and own equipment				
Action #	03-18	**Year Initiated**	N/A	**Prioritization Score**	5
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	Deleted	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)					
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan	This action can be deleted because it isn't a mitigation action and the need has been addressed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**	TBD	

Mitigation Action	Establish emergency operations center				
Action #	03-19	**Year Initiated**	*N/A*	**Prioritization Score**	*28*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Emergency management coordination				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Anderson Township				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Comprehensive plan update				
Action #	03-20	**Year Initiated**	N/A	**Prioritization Score**	14
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Comprehensive plan update		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Manage development in hazard prone areas		
Lead Agency/ Organization	Township Trustees		
Supporting Agency/ Organization			
Participating Jurisdictions	Anderson Township		
Implementation Plan	This mitigation action is no longer applicable to the Township and has been addressed through other planning mechanisms.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (less than $10,000)

Arlington Heights – Village

Mitigation Strategies & Actions

Mitigation Action	Generator for Arlington Heights Municipal Building				
Action #	04-01	**Year Initiated**	2018	**STAPLEE Prioritization Score**	34/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Mayor				
Supporting Agency/ Organization	Arlington Heights Village Council				
Participating Jurisdictions	Arlington Heights Village				
Implementation Plan					
Project Duration	**3 years**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources, BRIC, HMGP		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	04-02	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion),				

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
	Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches		
Participating Jurisdictions	Arlington Heights Village		
Implementation Plan			
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local resources, BRIC	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels				
Action #	04-03	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Arlington Heights Village Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning & Development				
Participating Jurisdictions	Arlington Heights Village				
Implementation Plan					
Project Duration	2 years		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, HMGP, OCRA, Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues				
Action #	04-04	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Deferred	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Landslide, Severe Thunderstorm, Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion)				
Benefits (Loss Avoided)	Identify hazard-prone areas in the City				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Planning Development, Hamilton County Engineer's Office				
Participating Jurisdictions	Arlington Heights Village				
Implementation Plan	This action is deferred until further studies of risk areas can be identified				
Project Duration	**Deferred**		**Estimated Completion Date**	**Deferred**	
Potential Funding Source	CBDG, OCRA, Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	04-05	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	Arlington Heights Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Arlington Heights Village				

Mitigation Action	Enhance snow removal equipment and supplies		
Implementation Plan	Enhance/purchase snow removal equipment and supplies.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	USDOT, FHWA, ODOT, FEMA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas				
Action #	04-06	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Flood (Riverine), Flood (Flash), Severe Winter Storm High Wind and Tornado, Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Public education and outreach				
Lead Agency/ Organization	Arlington Heights Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Arlington Heights Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	04-07	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood,				

Mitigation Action	Acquire transfer switches/generators for all shelters		
	Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources		
Lead Agency/ Organization	Arlington Heights Village Council		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Arlington Heights Village		
Implementation Plan			
Project Duration	3 years	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, BRIC, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Update tree trimming ordinances				
Action #	04-08	**Year Initiated**	*2007*	**Prioritization Score**	*48*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Deleted	
Hazard(s) Mitigated	Severe Winter Storm, High Wind and Tornado				
Benefits (Loss Avoided)	Reduce property and infrastructure damages and impediments				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Arlington Heights, Reading				
Implementation Plan	This action can be deleted as other planning mechanisms have addressed the concern.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	

Mitigation Action	Update tree trimming ordinances		
Potential Funding Source	Local Resources	**Estimated Cost**	TBD

Blue Ash – City

Mitigation Strategies & Actions

Mitigation Action	Renovate the Tower at Summit Park; upper observation deck; added safety for personal injury prevention				
Action #	05-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C*** ***Goal 2, Objective B, C*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, High Wind and Tornado, Public Health Emergency (e.g., Pandemic)				
Benefits (Loss Avoided)	Suicide Prevention				
Lead Agency/ Organization	Blue Ash City Council				
Supporting Agency/ Organization	OSHA				
Participating Jurisdictions	Blue Ash				
Implementation Plan					
Project Duration	**1 year**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** ($1 Million)	

Mitigation Action	The City will educate the public on the various risks that could impact the City at special events (i.e. Red, White, and Blue Ash; Summit Fest; Friday night concerts). Assistance will be provided by Hamilton County EMHSA.				
Action #	05-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				

Mitigation Action	The City will educate the public on the various risks that could impact the City at special events (i.e. Red, White, and Blue Ash; Summit Fest; Friday night concerts). Assistance will be provided by Hamilton County EMHSA.		
Benefits (Loss Avoided)	Public education and outreach		
Lead Agency/ Organization	Blue Ash Police Department		
Supporting Agency/ Organization	Fire Department, Hamilton County EMHSA		
Participating Jurisdictions	Blue Ash City		
Implementation Plan	Hamilton County EMHSA will assist the City staff special events (i.e. Red, White, and Blue Ash; Summit Fest; Friday night concerts) to educate the public on the various risks that could impact the City.		
Project Duration	1-3 years	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	05-03	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Blue Ash City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Blue Ash City				
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County, which Blue Ash residents can sign up for. Completed 2023.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system		
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Improve stream maintenance after severe weather				
Action #	05-04	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate property damage from flooding				
Lead Agency/ Organization	Blue Ash City Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Soil and Water Conservation District				
Participating Jurisdictions	Blue Ash City				
Implementation Plan	Cities are responsible for clearing logjams at city-owned culverts. Hamilton County Engineer's Office is responsible for clearing logjams at County-owned culverts. On private property, the landowner is responsible for maintaining the conveyance capacity of streams flowing through their property so as not to negatively impact their neighbor's property. In years past, the County received state funds to manage the removal of logjams across the County working with local jurisdictions.				
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, HMGP, Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads				
Action #	05-05	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Deleted	

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads		
Hazard(s) Mitigated	Flood (Flash), Severe Winter Storm, Hazardous Materials Incident		
Benefits (Loss Avoided)			
Lead Agency/ Organization	City Councils, Mayors, County EMA		
Supporting Agency/ Organization			
Participating Jurisdictions	Hamilton County, Blue Ash, Cleves		
Implementation Plan	This action can be deleted as it is no longer needed.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	ODNR, EPA, Local Resources	**Estimated Cost**	

Cheviot – City

Mitigation Strategies & Actions

Mitigation Action	Bury powerlines for public safety and mitigating wind, water, and accidents from power outages.				
Action #	06-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*34/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective A, C*** ***Goal 3, Objective A*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winder Storm (e.g., Ice Storm), Terrorism/Active Assailant				
Benefits (Loss Avoided)	Mitigate wind, water, and power outage accidents to service going through altafiber facility to avoid loss of revenue and income.				
Lead Agency/ Organization	Cheviot City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	City of Cheviot				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	EMPG, CDBG, HMGP, FEMA PA		**Estimated Cost**	TBD	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	06-02	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources		
Lead Agency/ Organization	Fire Department (with support from City Council)		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Cheviot City		
Implementation Plan	Replace generator at municipal building, which is 30-years-old and functionally obsolete. Additionally, provide generators at two other city sites. Both sites are potential shelters (Cheviot Fieldhouse and Harvest Home Park Lodge)		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, BRIC, HMGP	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop and implement safety education for residents and business using natural gas				
Action #	06-03	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Flood (Riverine), Flood (Flash), Severe Winter Storm, High Wind and Tornado, Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Public education and outreach				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Cheviot City				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	06-04	**Year Initiated**	2013	**Prioritization Score**	30/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Deleted	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Hazard removal from roadways to improve safety				
Lead Agency/ Organization	City Councils, County EMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County, Arlington Heights, Cheviot, Forest Park, Lincoln Heights, Mariemont, Mt Healthy, North College Hill, Norwood, Reading, Sharonville, Golf Manor, Greenhills, Woodlawn				
Implementation Plan	This action can be deleted. It is no longer needed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	USDOT, FHWA, ODOT, FEMA		**Estimated Cost**	TBD	

Mitigation Action	Conduct a study to improve internal communication structure				
Action #	06-05	**Year Initiated**	*2013*	**Prioritization Score**	*33/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Improve continuity of communications between managing entities				
Lead Agency/ Organization	City Council				

Mitigation Action	Conduct a study to improve internal communication structure		
Supporting Agency/ Organization			
Participating Jurisdictions	Cheviot City		
Implementation Plan	This action can be deleted. It is no longer needed.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Community development grants, FEMA, Local resources	**Estimated Cost**	TBD

Cincinnati – City

Mitigation Strategies & Actions

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues				
Action #	07-01	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*34/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective A, C*** ***Goal 3, Objective A*** ***Goal 4, Objective A, B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide				
Benefits (Loss Avoided)	Identify hazard-prone areas in the City				
Lead Agency/ Organization	DOTE, Building and Inspection				
Supporting Agency/ Organization	CAGIS				
Participating Jurisdictions	Cincinnati City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Community Development Grants, OCRA, FEMA, NLPA		**Estimated Cost**	$10,000 to $100,000	

Mitigation Action	Update mapping of high-risk areas prone to landslides, overland, and combined sewer overflow flooding				
Action #	07-02	**Year Initiated**	2018	**Prioritization Score**	34/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, D** **Goal 2, Objective A, C** **Goal 2, Objective A** **Goal 4, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide				
Benefits (Loss Avoided)	Protect Infrastructure from flooding and landslides				
Lead Agency/ Organization	CAGIS				

Mitigation Action	Update mapping of high-risk areas prone to landslides, overland, and combined sewer overflow flooding		
Supporting Agency/ Organization	MSD, DOTE, B&I, GCWW		
Participating Jurisdictions	Cincinnati City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	Medium ($10,000-100,000)

Mitigation Action	Institute a buyout plan for flood prone structures and structures affected by landslides				
Action #	07-03	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*28/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C, D*** ***Goal 2, Objective A, C*** ***Goal 4, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide				
Benefits (Loss Avoided)	Eliminate repetitive loss of properties				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning & Development				
Participating Jurisdictions	Cincinnati City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	FMA, CDBG, Local Resources		**Estimated Cost**	High (Greater than $100,000)	

Mitigation Action	Conduct engineering impact studies on flood mitigation				
Action #	07-04	**Year Initiated**	2013	**Prioritization Score**	34/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, C, D** **Goal 2, Objective A, C**		**Project Status**	Ongoing	

Mitigation Action	Conduct engineering impact studies on flood mitigation		
	Goal 4, Objective A, B		
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Severe Thunderstorm		
Benefits (Loss Avoided)	Identify flood-prone areas		
Lead Agency/ Organization	Building and Inspections, Stormwater Management		
Supporting Agency/ Organization	Hamilton County Engineer's Office, Army Corp of Engineers		
Participating Jurisdictions	Cincinnati City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	FMA, CDBG, BRIC, HMGP, OCRA	**Estimated Cost**	Medium ($10,000 TO $100,000)

Mitigation Action	Encourage and assist property owners to mitigate landslide issues before damages become more severe				
Action #	07-05	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*28/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C, D*** ***Goal 2, Objective A, C*** ***Goal 4, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Landslide				
Benefits (Loss Avoided)	Eliminate ongoing damage due to landslide				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Building and Inspections, DOTE				
Participating Jurisdictions	Cincinnati City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	HMGP, BRIC, Local Resources		**Estimated Cost**	High (Greater than $100,000)	

Mitigation Action	Identify, investigate, and monitor landslides that affect public infrastructure				
Action #	07-06	**Year Initiated**	2007	**STAPLEE+E Prioritization Score**	34
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, C, D Goal 2, Objective A, C Goal 4, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Infrastructure and Structural Failure (e.g., Bridge Collapse), Landslide				
Benefits (Loss Avoided)	Eliminate ongoing damage due to landslide				
Lead Agency/ Organization	DOTE				
Supporting Agency/ Organization	Public Services, Stormwater Management, Building and Inspections				
Participating Jurisdictions	Cincinnati City				
Implementation Plan	Prioritize and stabilize the landslides that have the greatest impact on the safety of the public				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	SORTA (TIG), OPWC, NLPA, Local Resources		**Estimated Cost**	High (Greater than $100,000)	

Mitigation Action	Develop a GIS mapping layer with attributes to establish a record of existing and historic landslides on both public and private property				
Action #	07-07	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*34/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C, D Goal 2, Objective A, C Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Landslide				
Benefits (Loss Avoided)	Identify and record landslide locations				
Lead Agency/ Organization	DOTE				
Supporting Agency/ Organization	Buildings and Inspections, Law Dept., CAGIS, Geotechnical consultants				
Participating Jurisdictions	Cincinnati City				
Implementation Plan					

Mitigation Action	Develop a GIS mapping layer with attributes to establish a record of existing and historic landslides on both public and private property		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	NLPA, USGS, Local Resources	**Estimated Cost**	High (Greater than $100,000)

Mitigation Action	Implement participatory and priority-based budgeting.				
Action #	07-08	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**5 years**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Implement participatory and priority-based budgeting				
Action #	07-09	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				

Mitigation Action	Implement participatory and priority-based budgeting		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan	Action can be deleted as it is covered by action 07-08.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Develop annual funding for sustainability investments like a municipal bond to capitalize on climate incentives of the Inflation Reduction Act (IRA).				
Action #	07-10	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Streamline procurement to enhance the impact of federal funding by utilizing cooperative purchasing including Omnia, GSA, and Sourcewell.				
Action #	07-11	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Continue to develop a framework for supporting green jobs with a focus on youth				
Action #	07-12	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					

Mitigation Action	Continue to develop a framework for supporting green jobs with a focus on youth		
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Hire a grant writer to assist in pursuit of federal funding with focus on the Justice40 Initiative to address environmental justice issues				
Action #	07-13	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Create policy for the procurement of sustainable goods for internal City supplies and materials informed by a city audit to develop strategic priorities				
Action #	07-14	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				

Mitigation Action	Create policy for the procurement of sustainable goods for internal City supplies and materials informed by a city audit to develop strategic priorities		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Crowdsource climate solutions with programs like hackathons to tackle complex issues				
Action #	07-15	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Improve communication and accessibility of sustainability programs and progress to the public				
Action #	07-16	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*

Mitigation Action	Improve communication and accessibility of sustainability programs and progress to the public		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***	**Project Status**	New
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)		
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Join and leverage Government Alliance on Race & Equity to advance climate equity programs				
Action #	07-17	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Update the Climate Equity Indicators report every 5 years to design programs to target benefits to priority communities				
Action #	07-18	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash, Flood (Riverine), High Wind and Tornado, Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice storm)				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation access, inclusion, and equity				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Office of Performance and Data Analytics				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Incentivize green infrastructure projects in communities with extreme heat and flood vulnerabilities				
Action #	07-19	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective A, C** **Goal 4, Objective A, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Reduce all of the following: Overland Flooding, Extreme Heat, Landslides, Combined Sewer Overflows, and Sewer Backups				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	City Council City Manager's Office MSD Stormwater Department of Community and Economic Development				

Mitigation Action	Incentivize green infrastructure projects in communities with extreme heat and flood vulnerabilities		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Equitably restructure sewer rates based on permeable land surface and other contributing factors				
Action #	07-20	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective A, C** **Goal 4, Objective A, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Reduce all of the following: Overland Flooding, Extreme Heat, Landslides, Infrastructure and Structural Failure				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability City Manager's Office MSD Stormwater Department of Community and Economic Development				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Create a “sponge city” with more and diverse green infrastructure in public and residential places including green roofs, bioswales, green medians, wetlands, parks, permeable pavements, and landscape gardens				
Action #	07-21	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40

Mitigation Action	Create a "sponge city" with more and diverse green infrastructure in public and residential places including green roofs, bioswales, green medians, wetlands, parks, permeable pavements, and landscape gardens		
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective A, C** **Goal 4, Objective A, C, D**	**Project Status**	New
Hazard(s) Mitigated	Extreme Heat Incident, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm		
Benefits (Loss Avoided)	Reduce all of the following: Overland Flooding, Extreme Heat, Landslides, Combined Sewer Overflows, and Sewer Backups		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Office of Environment and Sustainability City Manager's Office MSD Stormwater Department of Community and Economic Development		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**5 years**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Continue to decrease sewer backups, sewer overflows, and overland flooding (flash flooding) by supporting sewer infrastructure improvements in priority communities				
Action #	07-22	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective A, C** **Goal 4, Objective A, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Reduce all of the following: Overland Flooding, Extreme Heat, Landslides, Combined Sewer Overflows, and Sewer Backups				
Lead Agency/ Organization	City Manager's Office				
Supporting Agency/ Organization	Office of Environment and Sustainability City Council MSD Stormwater Department of Community and Economic Development				
Participating Jurisdictions	City of Cincinnati				

Mitigation Action	Continue to decrease sewer backups, sewer overflows, and overland flooding (flash flooding) by supporting sewer infrastructure improvements in priority communities		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Partner with priority communities to identify opportunities to address property damage caused by overland flooding and hillside instability				
Action #	07-23	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D Goal 2, Objective A, C Goal 4, Objective A, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Reduce all of the following: Overland Flooding, Extreme Heat, Landslides, Combined Sewer Overflows, and Sewer Backups				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability City Manager's Office MSD Stormwater Department of Community and Economic Development				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Ensure all rental housing has at least one room with adequate air conditioning				
Action #	07-24	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D Goal 2, Objective A, C Goal 4, Objective A, C, D**		**Project Status**	New	

Mitigation Action	Ensure all rental housing has at least one room with adequate air conditioning		
Hazard(s) Mitigated	Extreme Heat Incident, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm		
Benefits (Loss Avoided)	Reduce all of the following: Overland Flooding, Extreme Heat, Landslides, Combined Sewer Overflows, and Sewer Backups		
Lead Agency/ Organization	Department of Community and Economic Development		
Supporting Agency/ Organization	Office of Environment and Sustainability City Council City Manager's Office MSD Stormwater		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Use heat reflective materials when appropriate (roads, parking surfaces, roofs)				
Action #	07-25	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective A, C** **Goal 4, Objective A, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm				
Benefits (Loss Avoided)	Reduce all of the following: Overland Flooding, Extreme Heat, Landslides, Combined Sewer Overflows, and Sewer Backups				
Lead Agency/ Organization	City Manager's Office				
Supporting Agency/ Organization	Office of Environment and Sustainability City Council City Manager's Office MSD Stormwater Department of Community and Economic Development				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					

Mitigation Action	Use heat reflective materials when appropriate (roads, parking surfaces, roofs)		
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Create and support more opportunities like Climate Safe Neighborhoods (CSN) for residents to identify local environmental issues; empower residents and partners to implement community-based solutions				
Action #	07-26	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*32/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm),				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation through equity, engagement, and education.				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	Department of Community and Economic Development				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Support the Youth Environmental Council to mobilize the next generation				
Action #	07-27	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*32/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm),				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation through equity, engagement, and education.				
Lead Agency/ Organization	Department of Community and Economic Development				

Mitigation Action	Support the Youth Environmental Council to mobilize the next generation		
Supporting Agency/ Organization	Office of Environment and Sustainability		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Support the launch of a one stop shop - physical and virtual - to support residents in making lifestyle changes through informing and incentivizing efforts				
Action #	07-28	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*32/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm),				
Benefits (Loss Avoided)	Improve climate adaptation and mitigation through equity, engagement, and education.				
Lead Agency/ Organization	Department of Community and Economic Development				
Supporting Agency/ Organization	Office of Environment and Sustainability				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Support business owners and the start-up community to build and enact market solutions to address environmental issues, with a focus on women and minority-owned enterprises				
Action #	07-29	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*32/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 4, Objective A, D***		**Project Status**	New	

Mitigation Action	Support business owners and the start-up community to build and enact market solutions to address environmental issues, with a focus on women and minority-owned enterprises		
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm),		
Benefits (Loss Avoided)	Improve climate adaptation and mitigation through equity, engagement, and education.		
Lead Agency/ Organization	Department of Community and Economic Development		
Supporting Agency/ Organization	Office of Environment and Sustainability		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Develop a comprehensive Food System Plan for Cincinnati, taking into consideration its urban/rural connections and preparation for potential large-scale disruptions due to climate change				
Action #	07-30	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	36/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D** **Goal 2, Objective A** **Goal 4, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Drought, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Reduce food system disruptions due to climate change				
Lead Agency/ Organization	City Manager's Office				
Supporting Agency/ Organization	Office of Environment and Sustainability Cincinnati Health Department				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Implement the Milan Urban Food Policy Pact related to good governance, sustainable diets & nutrition, social & economic equity, food production, food supply & distribution and food waste				
Action #	07-31	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D Goal 2, Objective A Goal 4, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Drought, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Reduce food system disruptions due to climate change				
Lead Agency/ Organization	Cincinnati Health Department				
Supporting Agency/ Organization	Office of Environment and Sustainability				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Establish prioritized facilities as "Resilience Hubs" - centers for community gathering during emergency. Equip with solar and backup generators				
Action #	07-32	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D Goal 2, Objective B, C Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm				
Benefits (Loss Avoided)	Improve City building and infrastructure energy sustainability and resilience; Reduce City greenhouse gas emissions; Mitigate City operational vulnerabilities to climate change.				
Lead Agency/ Organization	Department of Public Services				
Supporting Agency/ Organization	Office of Environment and Sustainability, Office of Performance and Data Analytics, Cincinnati Recreation Commission, Department of Transportation and Engineering, Department of Finance, Purchasing Division				

Mitigation Action	Establish prioritized facilities as "Resilience Hubs" - centers for community gathering during emergency. Equip with solar and backup generators		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Pursue additional utility-scale clean energy with requests for proposal (RFP)				
Action #	07-33	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	36/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm				
Benefits (Loss Avoided)	Improve City building and infrastructure energy sustainability and resilience; Reduce City greenhouse gas emissions; Mitigate City operational vulnerabilities to climate change.				
Lead Agency/ Organization	Purchasing Division				
Supporting Agency/ Organization	Office of Environment and Sustainability, Office of Performance and Data Analytics, Cincinnati Recreation Commission, Department of Transportation and Engineering, Department of Public Services, Department of Finance,				
Participating Jurisdictions /Implementation Plan	City of Cincinnati				
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Organize facility managers to create a sustainable facility policy for new city buildings				
Action #	07-34	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*

Mitigation Action	Organize facility managers to create a sustainable facility policy for new city buildings		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A, B***	**Project Status**	New
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm		
Benefits (Loss Avoided)	Improve City building and infrastructure energy sustainability and resilience; Reduce City greenhouse gas emissions; Mitigate City operational vulnerabilities to climate change.		
Lead Agency/ Organization	City Manager's Office		
Supporting Agency/ Organization	Office of Environment and Sustainability, Office of Performance and Data Analytics, Cincinnati Recreation Commission, Department of Transportation and Engineering, Department of Public Services, Department of Finance, Purchasing Division		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**5 years**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Continue to strategically pursue energy efficiency for city facilities				
Action #	07-35	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	36/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm				
Benefits (Loss Avoided)	Improve City building and infrastructure energy sustainability and resilience; Reduce City greenhouse gas emissions; Mitigate City operational vulnerabilities to climate change.				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	Office of Performance and Data Analytics, Cincinnati Recreation Commission, Department of Transportation and Engineering, Department of Public Services, Department of Finance, Purchasing Division				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					

Mitigation Action	Continue to strategically pursue energy efficiency for city facilities		
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Convert streetlights to LED including electrifying gas lights				
Action #	07-36	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm				
Benefits (Loss Avoided)	Improve City building and infrastructure energy sustainability and resilience; Reduce City greenhouse gas emissions; Mitigate City operational vulnerabilities to climate change.				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	Office of Performance and Data Analytics, Cincinnati Recreation Commission, Department of Transportation and Engineering, Department of Public Services, Department of Finance, Purchasing Division				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Publish energy benchmarking data for city facilities on Cincy Insights				
Action #	07-37	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	36/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm				

Mitigation Action	Publish energy benchmarking data for city facilities on Cincy Insights		
Benefits (Loss Avoided)	Improve City building and infrastructure energy sustainability and resilience; Reduce City greenhouse gas emissions; Mitigate City operational vulnerabilities to climate change.		
Lead Agency/ Organization	Office of Performance and Data Analytics,		
Supporting Agency/ Organization	Office of Environment and Sustainability, Cincinnati Recreation Commission, Department of Transportation and Engineering, Department of Public Services, Department of Finance, Purchasing Division		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	TBD	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Focus city tree planting in neighborhoods with highest heat island effect as measured in the Climate Equity Indicators Report or most recent data				
Action #	07-38	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	38/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident				
Benefits (Loss Avoided)	Reduced heat island effect				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	City Council Cincinnati Parks Buildings and Inspections Department				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**5 years**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Provide incentives and support for the use of carbon crediting and/or carbon offset programs to fund tree planting, maintenance, land conservation, and forest rehabilitation				
Action #	07-39	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	*38/40*
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident				
Benefits (Loss Avoided)	Reduced heat island effect				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Cincinnati Parks Buildings and Inspections Department				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	5 years		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Plant more native tree species through education with non-profits, nurseries, and schools				
Action #	07-40	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	38/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident				
Benefits (Loss Avoided)	Reduced heat island effect				
Lead Agency/ Organization	Cincinnati Parks				
Supporting Agency/ Organization	City Council Office of Environment and Sustainability Buildings and Inspections Department				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					

Mitigation Action	Plant more native tree species through education with non-profits, nurseries, and schools		
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Implement policies that protect existing trees during development efforts				
Action #	07-41	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	*38/40*
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Heat Incident				
Benefits (Loss Avoided)	Reduced heat island effect				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Cincinnati Parks Buildings and Inspections Department				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Continue to implement affordable and mixed-income housing strategies to stabilize communities				
Action #	07-42	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A,D***		**Project Status**	New	

Mitigation Action	Continue to implement affordable and mixed-income housing strategies to stabilize communities		
Hazard(s) Mitigated	Civil Disorder/Riot, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Urban Fires		
Benefits (Loss Avoided)	Increase Social Cohesion, Reduce Social Impacts to Climate Vulnerabilities		
Lead Agency/ Organization	Department of Community and Economic Development		
Supporting Agency/ Organization	City Council Office of Environment and Sustainability Department of Planning and Engagement Cincinnati Recreation Commission Groundwork Ohio River Valley Green Umbrella		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Develop neighborhood resilience hubs to foster community connection and increase emergency preparedness				
Action #	07-43	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A,D***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Urban Fires				
Benefits (Loss Avoided)	Increase Social Cohesion, Reduce Social Impacts to Climate Vulnerabilities				
Lead Agency/ Organization	Green Umbrella				
Supporting Agency/ Organization	City Council Office of Environment and Sustainability Department of Community and Economic Development Department of Planning and Engagement Cincinnati Recreation Commission Groundwork Ohio River Valley				

Mitigation Action	Develop neighborhood resilience hubs to foster community connection and increase emergency preparedness		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Fund and expand the Climate Safe Neighborhoods program to cultivate the social infrastructure for resilient communities and provide green workforce training				
Action #	07-44	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Urban Fires				
Benefits (Loss Avoided)	Increase Social Cohesion, Reduce Social Impacts to Climate Vulnerabilities				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Department of Community and Economic Development Department of Planning and Engagement Cincinnati Recreation Commission Groundwork Ohio River Valley Green Umbrella				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Develop a climate migration response plan				
Action #	07-45	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective A*** ***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Urban Fires				
Benefits (Loss Avoided)	Increase Social Cohesion, Reduce Social Impacts to Climate Vulnerabilities				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	City Council Department of Community and Economic Development Department of Planning and Engagement Cincinnati Recreation Commission Groundwork Ohio River Valley Green Umbrella				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Conduct inventories, assessments, and clean-ups of contaminated industrial sites, referred to as brownfields, in alignment with both community revitalization priorities and city planned reuse				
Action #	07-46	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	34/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective C** **Goal 4, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), Landslide				
Benefits (Loss Avoided)	Reduce sources of pollution; Clean up contaminated land; Protect landslide and flood prone areas				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	City Council MSD GCWW				

Mitigation Action	Conduct inventories, assessments, and clean-ups of contaminated industrial sites, referred to as brownfields, in alignment with both community revitalization priorities and city planned reuse		
	Buildings & Inspections Department Department of Community and Economic Development Department of Planning and Engagement		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Address emerging pollutants, including pharmaceuticals and personal care products that are endocrine-disrupting chemicals, and microplastics				
Action #	07-47	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	*34/40*
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective C** **Goal 4, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), Landslide				
Benefits (Loss Avoided)	Reduce sources of pollution; Clean up contaminated land; Protect landslide and flood prone areas				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability MSD GCWW Buildings & Inspections Department Department of Community and Economic Development Department of Planning and Engagement				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Protect landslide-prone hillsides and overland flood risk zones through land development policies, such as Low Impact Development				
Action #	07-48	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	34/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D Goal 2, Objective C Goal 4, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), Landslide				
Benefits (Loss Avoided)	Reduce sources of pollution; Clean up contaminated land; Protect landslide and flood prone areas				
Lead Agency/ Organization	Department of Planning and Engagement				
Supporting Agency/ Organization	Office of Environment and Sustainability City Council MSD GCWW Buildings & Inspections Department Department of Community and Economic Development				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Grow and expand programs such as WarmUp Cincy to support low-income renters, homeowners, and landlords of affordable housing with the installation of weatherization, energy efficiency, and healthy home upgrades				
Action #	07-49	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*33/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, HazMat Incident (e.g., Chemical Spill)				
Benefits (Loss Avoided)	Reduce climate impacts of extreme heat and extreme cold; Improve buildings and infrastructure resilience to climate change; Improve equitable access to energy resources; Improve building tightness to reduce exposure to large scale hazmat incidents.				
Lead Agency/ Organization	Buildings & Inspections Department				

Mitigation Action	Grow and expand programs such as WarmUp Cincy to support low-income renters, homeowners, and landlords of affordable housing with the installation of weatherization, energy efficiency, and healthy home upgrades		
Supporting Agency/ Organization	Office of Environment and Sustainability Buildings and Inspections Department		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BIL and IRA	**Estimated Cost**	TBD

Mitigation Action	Implement and fund programs to install solar on low-income housing				
Action #	07-50	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	33/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, HazMat Incident (e.g., Chemical Spill)				
Benefits (Loss Avoided)	Reduce climate impacts of extreme heat and extreme cold; Improve buildings and infrastructure resilience to climate change; Improve equitable access to energy resources; Improve building tightness to reduce exposure to large scale hazmat incidents.				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Buildings and Inspections Department				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Create policies that will increase the energy efficiency of residential single and multi-family buildings in order to decrease energy poverty				
Action #	07-51	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*33/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, HazMat Incident (e.g., Chemical Spill)				
Benefits (Loss Avoided)	Reduce climate impacts of extreme heat and extreme cold; Improve buildings and infrastructure resilience to climate change; Improve equitable access to energy resources; Improve building tightness to reduce exposure to large scale hazmat incidents.				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Office of Environment and Sustainability Buildings and Inspections Department				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BIL and IRA		**Estimated Cost**	TBD	

Mitigation Action	Install BC/DR software for improved planning and incident management, real-time dashboard, and for reporting				
Action #	07-52	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, D** **Goal 3, Objective A, B** **Goal 4, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Cyber Incident, Terrorism/Active Assailant				
Benefits (Loss Avoided)	Avoid losses up to $1 Million dollars, strengthen business continuity program, and remove barriers to decision making and communications for improved coordination of planning/response.				
Lead Agency/ Organization	University of Cincinnati				
Supporting Agency/ Organization					
Participating Jurisdictions	City of Cincinnati				

Mitigation Action	Install BC/DR software for improved planning and incident management, real-time dashboard, and for reporting		
Implementation Plan			
Project Duration	**2 years**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	$150,000 (1 -Year) $100,000 (Per Year to Maintain)

Mitigation Action	Harden city buildings and infrastructure protections to critical areas, city services, police and fire, power grid, and natural gas from storms and riots				
Action #	07-53	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*31/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C, D*** ***Goal 2, Objective A, B, B*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Cyber Incident, Earthquake, High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant				
Benefits (Loss Avoided)	Critical infrastructure is protected				
Lead Agency/ Organization	Emergency Management				
Supporting Agency/ Organization	City Council/Government				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**10 years**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	BRIC, HMGP, Local Resources		**Estimated Cost**	TBD	

Mitigation Action	Assess the condition of the city's Stormwater Management Utility stormwater infrastructure and reduce flooding risk to residents by repairing and/or upsizing the infrastructure				
Action #	07-54	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	38/40

Mitigation Action	Assess the condition of the city's Stormwater Management Utility stormwater infrastructure and reduce flooding risk to residents by repairing and/or upsizing the infrastructure		
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B** **Goal 3, A**	**Project Status**	New
Hazard(s) Mitigated	Flood (Flash), Infrastructure and Structural Failure (e.g., Bridge Collapse)		
Benefits (Loss Avoided)	Flood risk reduction, property protection		
Lead Agency/ Organization	Stormwater Management Utility		
Supporting Agency/ Organization	N/A		
Participating Jurisdictions	City of Cincinnati		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	Local Capital Program	**Estimated Cost**	$2 Million

Mitigation Action	Update mapping of high risk areas prone to landslide, overland and combined sewer overflow flooding				
Action #	07-55	**Year Initiated**	2018	**Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 2**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flooding (Flash), Landslide				
Benefits (Loss Avoided)	Property loss and damage				
Lead Agency/ Organization	CAGIS				
Supporting Agency/ Organization	• Extreme Weather Task Force • Metropolitan Sewer District • Greater Cincinnati Water Works • Storm Water Management Utility • Office of Performance and Data Analytics				
Participating Jurisdictions	Cincinnati City				
Implementation Plan	**Project Justification**: Mapping high risk areas (identifying & quantifying risk) allows the City, and residents to make informed planning and development decisions.				

Mitigation Action	Update mapping of high risk areas prone to landslide, overland and combined sewer overflow flooding		
	Project Description: Create an online mapping tool, clearly marking areas prone to landslide, overland and combined sewer overflow flooding. **Project Objectives**: Identifying areas prone to flooding and landslides. It will include the following information: • Historical streams • Existing waterways • Floodway (FEMA) • Areas prone to landslides (DOTE) • SMU Capital Improvement projects • Areas prone to combined sewer backups **Constraints**: Map functionality requirements. CAGIS has access to a set of tools for map query and discovery. If the project requires custom tools the time to develop them needs to be added Decision on what level of data to add from the sewer backup analysis. **Assumptions**: Could be helpful research tool for home buyers. **Project Deliverable**: A web mapping application		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Budget neutral- dedicating staff hours 10-20hrs over two weeks for initial mock up- Cost absorbed by CAGIS.	**Estimated Cost**	Budget neutral- dedicating staff hours 10-20hrs over two weeks for initial mock up- Cost absorbed by CAGIS.

Mitigation Action	Implement the City's Coordinated Site Plan Review Process (ensuring all environmental factors are fully assessed prior to construction or development)				
Action #	07-56	**Year Initiated**	*2017*	**Prioritization Score**	*26/35*
Goal(s)/Objective(s) Addressed	***Goal 1***		**Project Status**	Completed	
Hazard(s) Mitigated	Dam/Levee Failure, Earthquake, Flood (Riverine), Flood (Flash), Landslide, Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion)				
Benefits (Loss Avoided)	Enhance planning and plan integration				
Lead Agency/ Organization	Building Inspections				
Supporting Agency/ Organization	City Council				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan	**Project Justification**: Cincinnati area geological conditions, specifically hillside and floodplain conditions. The need to centralize data as well as gather all crucial departmental feedback. Creating a more streamlined and comprehensive review of each proposed development.				

Mitigation Action	Implement the City's Coordinated Site Plan Review Process (ensuring all environmental factors are fully assessed prior to construction or development)		
	Project Description: The site review process applies to developments that are subdividing or combining a parcel of land, or making infrastructure improvements to support a new development. Examples include Subdivision Improvement Plans (SIP) and Deed Stamps. OPDA, with several departments are proposing a centralized, coordinated process for reviewing site plan projects. **Project Deliverable**: 1. Centralized information for Coordinated Site Plan Process, including a centralized application process 2. Centralized information repository for applications 3. Establishment of the Coordinated Site Plan Review Committee 4. Implement Coordinated Site Plan Review Process **Project Objectives**: Centralized application process with centralized information for a streamlined and coordinated review process involving all necessary city departments. **Constraints:** Procuring and implementing Open Counter's Residential Portal **Assumptions:** Creating a streamlined process, the customer will have coordinated feedback from each agency in the review process. This will also reduce contradicting conditions given by each reviewing agency and create a singular response for the customer. There will also be one point of entry and a clear process for each development.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Annual Contract	**Estimated Cost**	**Medium** ($40,000 annual contract for Open Counter, as an expansion of the Business Development Tool)

Mitigation Action	Implement the Mass Notification System Rave-Alert (Opt-in emergency alerts across mobile phones, landlines, email, text, social media etc)				
Action #	07-57	**Year Initiated**	2017	**Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	**Goal 1** **Goal 3**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increased community knowledge about hazard events				
Lead Agency/ Organization	Enterprise Technology Solutions				
Supporting Agency/ Organization	• Extreme Weather Task Force • CMO Communications Office				

Mitigation Action	Implement the Mass Notification System Rave-Alert (Opt-in emergency alerts across mobile phones, landlines, email, text, social media etc)		
	• Cincinnati Fire Department • Cincinnati Police Department		
Participating Jurisdictions	Cincinnati City		
Implementation Plan	**Project Justifications**: Community defined here-in as residents, businesses and visitors to the City of Cincinnati and Hamilton County. A mass notification system will allow the City to release emergency & nonemergency notifications to unlimited recipients, with an easy to use interface accessible from any internet connected device. These notifications can provide directives and/or information to the community that will assist Service response during extreme weather events and other emergencies. **Project Description**: Via a partnership with the Hamilton County Emergency Management Agency, the administration intends to utilize Rave-Alert: an opt in mass notification system designed to deliver emergency and non-emergency communications via text, email, and call. **Project Deliverable(s)**: • System Demonstrations • MOU with Hamilton County • Administrative Regulations • Assignment of Designated Department Notification Administrators • Testing & Training • Public Opt-in Release Posted via Web, Social Media, and Print • Launch & Use **Project Objective(s)**: System utilization. Improved communication and public notifications. **Constraints:** Timeline impacts due to contract negotiations, testing, and system training. • **Assumptions:** As the County continues to add partnered municipalities, the cost to the City of Cincinnati will decrease.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Internal Funds	**Estimated Cost**	**Medium** (from $10,000 to $100,000) • $54,000 ETS Budget Year 1, cost absorbed by department. Year 2: Shared cost agreement across departments utilizing system

Mitigation Action	Update the City's Emergency Response Plan "EOP"				
Action #	07-58	**Year Initiated**	*2017*	**Prioritization Score**	*27/35*
Goal(s)/Objective(s) Addressed	***Goal 1***		**Project Status**	Ongoing	

Mitigation Action	Update the City's Emergency Response Plan "EOP"		
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Enhance planning and plan integration		
Lead Agency/ Organization	Cincinnati Fire Department		
Supporting Agency/ Organization	• Extreme Weather Task Force • City Manager's Office • Health Department • Transportation and Engineering		
Participating Jurisdictions	Cincinnati City		
Implementation Plan	**Project Justifications**: Emergency planning improves preparedness and response. The EOP outlines how City departments will prepare for, respond to, recover from, and mitigate the impact of a disaster. In addition, the plan will facilitate a continuing sequence of analyses, plan development, training, and drills to increase the City's disaster preparedness. **Project Description**: Update the City's EOP (specifically address issues of mass-care, transportation and evacuation, shelter management, and public health provisions). **Project Deliverable(s)**: 1. Review current City EOP and the EOPs from individual departments 2. Address edits, draft additions and consult Hamilton Emergency Management agency for recommended inclusions 3. Proof Document 4. Publish Update **Project Objective(s)**: Published Updated EOP. The plan identifies the responsibilities, functions and working relationships among and with various City departments and outside agencies. **Constraints:** CFD staffing limitations devoted to administrative functions. Individual department EOPs may require updating or revision. **Assumptions:** The 2006 EOP should not require complete revision		
Project Duration	**2 years**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years) 1. Review current City EOP and the EOPs from individual departments: October–November 2017, partially completed

Mitigation Action	Update the City's Emergency Response Plan "EOP"		
			2. Meet with Departments solidify Emergency Support Functions, not yet started 3. Address edits, draft additions, and consult Hamilton Emergency Management agency for recommended inclusions: November 2017, started 4. Proof Document: November 2017, partially completed Publish Update: December 2017, NLT January 2018
Potential Funding Source	Cost absorbed by CFD	**Estimated Cost**	Budget Neutral

Mitigation Action	Identify and provide critical facilities with backup generators, batteries, and fuel				
Action #	07-59	**Year Initiated**	2017	**Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	**Goal 1**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Continuity of operations by ensuring essential functions are operational				
Lead Agency/ Organization	Department of Public Services				
Supporting Agency/ Organization	• Extreme Weather Task Force • Cincinnati Fire Department • Purchasing Division • City Manager's Office • Enterprise Technology Solutions • DPS-Fleet • Cincinnati Police Department				
Participating Jurisdictions	Cincinnati City				
Implementation Plan	**Project Justifications**: The City maintains required auxiliary, emergency, and standby power systems for city operated utilities and critical city facilities. However, with the increasing threat				

Mitigation Action	Identify and provide critical facilities with backup generators, batteries, and fuel		
	of Extreme Weather it is imperative that the City provide a reliable and stable supply of electricity under a wide range of operating conditions. **Project Description**: A comprehensive assessment of critical City facilities' auxiliary and onsite emergency power, standby power, and optional standby power systems. Grading critical facility redundant and nonredundant electrical supplies and current inventories of battery powered supply and backup generator supply. Determining needs and recommendations for additional support, purchases, or maintenance. **Project Deliverable(s)**: 1. Assessment/Inventory across departments (ongoing testing, maintenance and exercising requirements) 2. Research/determination of best practices and equipment supply 3. Report: State of backup power supply based on building risk category and backup power requirements 4. Recommendations for procurement and/or action **Project Objective(s)**: Improve power reliability and provide assurance that critical City facilities can maintain a power supplies under a wide range of operating conditions. **Constraints:** Staffing and monetary constraints **Assumptions:** Existing systems are in good shape. Additions to cover all critical facilities will be required. On-going testing, maintenance and exercising of systems will be required. Infrastructure investment will be required to create redundant systems and to secure utility supplies to critical		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years) 1. Assessment/Inventory across departments: January 2018, partially completed 2. Research/determination of best practices and equipment supply: January 2018, mostly completed 3. Report: state of backup power supply based on building risk category and backup power requirements: February 2018, started Recommendations for procurement and/or action: March 2018
Potential Funding Source	TBD	**Estimated Cost**	Budget neutral research and reporting. Recommended changes or purchases: Cost currently unknown.

Mitigation Action	Increase emergency response and debris management capacity				
Action #	07-60	**Year Initiated**	*2017*	**Prioritization Score**	*28/35*

Mitigation Action	Increase emergency response and debris management capacity		
Goal(s)/Objective(s) Addressed	***Goal 1***	**Project Status**	Ongoing
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Increase capabilities to recover from disaster		
Lead Agency/ Organization	Cincinnati Park Board		
Supporting Agency/ Organization	• Extreme Weather Task Force • Purchasing Division • Department of Public Services		
Participating Jurisdictions	Cincinnati City		
Implementation Plan	**Project Justifications**: Extreme weather events such as storms, tornados, and floods damage structures, their contents, and trees which create a sudden demand for debris collection, coordination, temporary storage, processing, and removal. **Project Description**: Create a debris management plan according to FEMA guidelines and that include staff roles and responsibilities, situations and assumptions, debris clearance and collection, debris management sites, potential for contracted services, private property debris removal and demolition of private structures, health and safety, and public information. **Project Deliverable(s)**: 1. Debris Management Plan in accordance with FEMA guidelines 2. Increase capacity for debris management via interdepartmental collaboration, private/public partnership **Project Objective(s)**: A debris management process that is widely accepted and easy to implement that identifies assets and procedures for rapid response to extreme weather events. **Constraints:** No monetary constraints, only staff time commitment limitations **Assumptions:** • Existing plans can be updated and included, instead of creating entirely new procedures. • Equipment and personnel inventories are current. Availability of vendors and potential mutual aid partners		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years) Steps to completion: 1. Review and implement FEMA debris management plan process, November 2017, mostly completed 2. Review existing Parks Emergency Response plan and other existing debris management plans,

Mitigation Action	Increase emergency response and debris management capacity		
			November 2017, mostly completed 3. Create inventory of existing assets, personnel, and debris management sites, December 2017, partially completed 4. Review and discuss contracting and/or mutual aid agreements, January 2018, started 5. First draft document March 2018, started 6. Second draft document April 2018 Final review, July 2018
Potential Funding Source	Local Resources, FEMA PA	**Estimated Cost**	TBD

Mitigation Action	Map the City's heat islands and identify vulnerable populations needing outreach				
Action #	07-61	**Year Initiated**	2017	**Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	**Goal 2**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Heat Incident				
Benefits (Loss Avoided)	Preserve life and mitigate casualties				
Lead Agency/ Organization	Office of Environment and Sustainability				
Supporting Agency/ Organization	• Extreme Weather Task Force • Office of Environment and Sustainability • Office of Performance Data Analytics • University of Cincinnati				
Participating Jurisdictions	Cincinnati City				
Implementation Plan	**Project Justifications**: Cincinnati's neighborhoods will face different risks associated with climate disruption based on physical, geographical, demographic, and socio-economic conditions. This assessment will help the city understand each neighborhood's points of vulnerability, and identify recommendations to mitigate risk. **Project Description**: The Neighborhood Vulnerability Assessment (NVA) will evaluate the potential risks posed by our changing climate. The NVA is a data collection effort with four dimensions: 1. Health and Wellbeing				

Mitigation Action	Map the City's heat islands and identify vulnerable populations needing outreach		
	2. Economy and Society 3. Infrastructure and Ecosystem 4. Demographic Factors. The NVA will identify at-risk communities, and allow resilience recommendations to be tailored to communities. **Project Deliverable(s)**: 1. Neighborhood Vulnerability Assessment (NVA) - An inventory of health, economic, physical, and demographic metrics for each neighborhood of Cincinnati. The data will be packaged as a dashboard on CincyInsights 2. Urban Heat Island Assessment (UHIA) - A map of surface temperatures across the city, to help identify at-risk areas, and causes of heat discrepancies. The data will be packaged as a dashboard on CincyInsights. 3. Completion of Landstat imaging and climate modeling **Project Objective(s)**: The project seeks to identify specific climate-related risks faced by each neighborhood. An understanding of the risk will allow for neighborhood-specific risk communication and mitigation strategies. **Constraints:** Funding for contractor (TBD) **Assumptions:** N/A		
Project Duration	TBD	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years) 1. Neighborhood Vulnerability Assessment will be completed and available on Cincy Insights, February or NLT March 2018 **2.** Urban Heat Island Assessment will be completed within 6 months of an executed MOU with UC Completion of Landstat imaging and climate modeling
Potential Funding Source	The Neighborhood Vulnerability Assessment can be completed with staff time. Cost absorbed by OES.	**Estimated Cost**	**Medium** (The estimated cost for University of Cincinnati researchers to complete an Urban Heat Island Assessment for the City of Cincinnati will be $20,000)

Mitigation Action	Outreach and Public engagement campaign on extreme weather preparedness				
Action #	07-62	**Year Initiated**	*2017*	**Prioritization Score**	*27/35*
Goal(s)/Objective(s) Addressed	***Goal 3***		**Project Status**	Ongoing	

Mitigation Action	Outreach and Public engagement campaign on extreme weather preparedness		
Hazard(s) Mitigated	Dam/Levee Failure, Extreme Cold Incident, Extreme Heat Incident, Flood (Riverine), Flood (Flash), Landslide, Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Wildfires		
Benefits (Loss Avoided)	Preserve life and mitigate casualties		
Lead Agency/ Organization	City Manager's Office (CMO) Communications Office		
Supporting Agency/ Organization	• Extreme Weather Task Force • CMO, Communications • Office of Environment and Sustainability • Health Department • Cincinnati Fire Department		
Participating Jurisdictions	Cincinnati City		
Implementation Plan	**Project Justifications**: Educating the public about extreme weather preparedness can potentially minimize risk and impact severity of extreme weather events. **Project Description**: Partner with the Hamilton County Emergency Management & Homeland Security Agency (HCEMHSA) to address citizen emergency preparedness. Disseminate citizen preparedness publications and links **Project Deliverable(s)**: 1. Strategy Partnership with HCEMHSA 2. Employ Engagement: • The City's Website • Social Media (Twitter, Facebook, LinkedIn, Next Door) • PSA's/Citi-Cable **Project Objective(s)**: Online, print, and public service announcements intended to equip residents with tips and tools to better prepare for extreme weather events. **Constraints:** Financial resources **Assumptions:** Adequate City staff available to assist with content development		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing** 1. Strategy Partnership with HCEMHSA, November 2017, Started 2. Ongoing Engagement: December 2017/January 2018 • The City's Website • Social Media (Twitter, Facebook, LinkedIn, Next Door) PSA's/Citi-Cable
Potential Funding Source	Staff Time, Local resources	**Estimated Cost**	• Printing Costs: TBD • Social Media Costs: TBD • These things all influence cost: ○ Message boost length ○ Designate goal; reach, link clicks, engagement, likes etc.

Mitigation Action	Outreach and Public engagement campaign on extreme weather preparedness		
			○ Type of message; video, scrolling images, static image, etc. Demographic/ Reach settings

Mitigation Action	Institute a buy-out plan for flood prone structures				
Action #	07-63	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 2, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning Development				
Participating Jurisdictions	Cincinnati City				
Implementation Plan	Identify and mitigate repetitive loss properties.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	FEMA, Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	07-64	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion),				

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
	Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches		
Participating Jurisdictions	Cincinnati City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources, BRIC, HMGP	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	07-65	**Year Initiated**	2013	**Prioritization Score**	21/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	**Completed**	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Cincinnati City				
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Cincinnati residents can sign up for. Completed 2023.				

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Build/establish shelters with generators				
Action #	07-66	**Year Initiated**	*2013*	**Prioritization Score**	*20/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Terrorism/Active Assailant, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Establish shelters for residents and ensure power to critical facilities				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Cincinnati City				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, HMGP		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct engineering impact studies on flood mitigation				
Action #	07-67	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm				

Mitigation Action	Conduct engineering impact studies on flood mitigation		
Benefits (Loss Avoided)	Identify flood-prone areas		
Lead Agency/ Organization	Building and Inspections, Stormwater Management		
Supporting Agency/ Organization	Hamilton County Engineer's Office, Army Corp of Engineers		
Participating Jurisdictions	Cincinnati City		
Implementation Plan			
Project Duration	TBD	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources, OCRA	**Estimated Cost**	**Medium** ($10,000 to $100,000)

Mitigation Action	Require manufactured homes to have tie-downs				
Action #	07-68	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B*** ***Goal 2, Objective B***		**Project Status**	Completed	
Hazard(s) Mitigated	High Wind and Tornado				
Benefits (Loss Avoided)	Property damage and life safety				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Building Inspections				
Participating Jurisdictions	City of Cincinnati				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local Resources		**Estimated Cost**	TBD	

Cleves – Village

Mitigation Strategies & Actions

Mitigation Action	Increase capacity of streams and culverts in lower region of village (downstream)				
Action #	08-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C, D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Reduce flooding				
Lead Agency/ Organization	Cleves Village Council				
Supporting Agency/ Organization	Hamilton County				
Participating Jurisdictions	Cleves Village				
Implementation Plan					
Project Duration	**2 years**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	EPA, BRIC, HMGP, FEMA PA, Local Resources		**Estimated Cost**	$400,000	

Mitigation Action	Institute a buy-out plan for flood prone structures				
Action #	08-02	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 2, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	Village Council				

Mitigation Action	Institute a buy-out plan for flood prone structures		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning Development		
Participating Jurisdictions	Cleves Village		
Implementation Plan	Identify and mitigate repetitive loss properties.		
Project Duration	Ongoing	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	FMA, Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	08-03	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Cleves Village				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC, HMGP		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	08-04	**Year Initiated**	2013	**Prioritization Score**	21/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Cleves Village				
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Cleves residents can sign up for. Completed 2023.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels				
Action #	08-05	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels		
Participating Jurisdictions	Cleves Village		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, HMGP, FEMA PA, OCRA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Build/establish shelters with generators				
Action #	08-06	**Year Initiated**	2013	**Prioritization Score**	20/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Terrorism/Active Assailant, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Establish shelters for residents and ensure power to critical facilities				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Cleves Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, HMGP		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads				
Action #	08-07	**Year Initiated**	*2013*	**Prioritization Score**	*20/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 2, Objective C***		**Project Status**	Ongoing	

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads		
Hazard(s) Mitigated	Flood (Flash), Severe Winter Storm, Hazardous Materials Incident, Infrastructure Failure, Mass Transportation Incident		
Benefits (Loss Avoided)	Improve safety on roadways		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Council, Hamilton County Engineer's Office, ODOT		
Participating Jurisdictions	Cleves Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	ODNR, EPA, PROTECT, CDBG	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop and implement safety education for residents and business using natural gas				
Action #	08-08	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Flood (Riverine), Flood (Flash), Severe Winter Storm, High Wind and Tornado, Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Public education and outreach				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Cleves Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Establish mutual aid response agreements within the county				
Action #	08-09	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase coordination and collaboration				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Partnering Local Jurisdictions				
Participating Jurisdictions	Cleves Villages				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (Less than $10,000)	

Mitigation Action	Conduct a study to re-engineer the railroad crossings				
Action #	08-10	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Better understand rail transportation issues in the community				
Lead Agency/ Organization	Village Council				

Mitigation Action	Conduct a study to re-engineer the railroad crossings		
Supporting Agency/ Organization	Railroads, Hamilton County Engineer's Office		
Participating Jurisdictions	Cleves Village		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	ODOT, EPA, FHWA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Harden bridges				
Action #	08-11	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Severe Winter Storm, High Wind and Tornado, Infrastructure Failure				
Benefits (Loss Avoided)	Protect and strengthen infrastructure				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, ODOT				
Participating Jurisdictions	Cleves Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	PROTECT, ODOT		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop ordinances to require improved building standards and floodplain ordinances				
Action #	08-12	**Year Initiated**	2013	**Prioritization Score**	26*/84*

Mitigation Action	Develop ordinances to require improved building standards and floodplain ordinances		
Goal(s)/Objective(s) Addressed	**Goal 2, Objective A, B**	**Project Status**	Ongoing
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm		
Benefits (Loss Avoided)	Reduce property damages due to flooding		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Cleves Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Colerain – Township

Mitigation Strategies & Actions

Mitigation Action	Educate residents on development of disaster preparedness kits and work to get kits made and distributed				
Action #	09-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 4, Objective D***		**Project Status**	New	
Hazard(s) Mitigated	Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Urban Fires				
Benefits (Loss Avoided)	Preparedness				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Colerain Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	Low (Less than $10,000)	

Mitigation Action	Identify various shelters in township; establish sheltering plans and partnerships. Equip and retrofit the township's community center with a backup power supply generator for use as a shelter				
Action #	09-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				

Mitigation Action	Identify various shelters in township; establish sheltering plans and partnerships. Equip and retrofit the township's community center with a backup power supply generator for use as a shelter		
Benefits (Loss Avoided)	Provide sheltering to residents		
Lead Agency/ Organization	Colerain Fire Department		
Supporting Agency/ Organization	American Red Cross		
Participating Jurisdictions	Colerain Township		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	Local resources, Bric, HMGP	**Estimated Cost**	**High** (greater than $100,000)

Columbia – Township

Mitigation Strategies & Actions

Mitigation Action	Mitigate Route 50 flooding east of Newtown Road				
Action #	10-01	**Year Initiated**	2018	**STAPLEE Prioritization Score**	20/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Mass Transportation Incident				
Benefits (Loss Avoided)	Traffic flow, safety				
Lead Agency/ Organization	Township Trustees, ODOT				
Supporting Agency/ Organization	Hamilton County Engineer's Office				
Participating Jurisdictions	Columbia Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	State Funds		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Mitigate urban flooding in Madison Place area during significant rain events				
Action #	10-02	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*29/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 3, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Property preservation; public health; life safety				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Metropolitan Sewer District, Hamilton County Engineer’s Office, Hamilton County Stormwater District				

Mitigation Action	Mitigate urban flooding in Madison Place area during significant rain events		
Participating Jurisdictions	Columbia Township		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BRIC, Township Funds	**Estimated Cost**	**High** (greater than $100,000

Crosby - Township

Mitigation Strategies & Actions

Mitigation Action	Relocating Fire department to be more centrally located				
Action #	11-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B*** ***Goal 3, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Earthquake, HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Terrorism/Active Assailant, Urban Fires				
Benefits (Loss Avoided)	Better Service				
Lead Agency/ Organization	Trustee				
Supporting Agency/ Organization	Fire Department				
Participating Jurisdictions	Crosby Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	BRIC		**Estimated Cost**	High ($3-4 million)	

Mitigation Action	Promoting insurance to residents (homeowners and renting)				
Action #	11-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	**Goal A, B, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), High Wind and Tornado, Severe Winter Storm (e.g., Ice Storm), Urban Fires				
Benefits (Loss Avoided)	Better insurance rates for residents				
Lead Agency/ Organization	Fire Department				

Mitigation Action	Promoting insurance to residents (homeowners and renting)		
Supporting Agency/ Organization	EMHSA		
Participating Jurisdictions	Crosby Township		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	N/A	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Commodity flow study (New Haven Rd. and State Route 128)				
Action #	11-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	35/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Better understand HAZMAT transported through the community				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Township Trustees				
Participating Jurisdictions	Crosby Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources, BRIC		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Obtain a generator and transfer switch for the Fire House				
Action #	11-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*31/35*

Mitigation Action	Obtain a generator and transfer switch for the Fire House		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***	**Project Status**	Ongoing
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Infrastructure and Structural Failure		
Benefits (Loss Avoided)	Harden critical infrastructure		
Lead Agency/ Organization	Fire Department		
Supporting Agency/ Organization	Township Trustees		
Participating Jurisdictions	Crosby Township		
Implementation Plan	Obtain a generator and transfer switch for the Fire House (9139 Baughman Rd)		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, HMGP	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Flood zone study for the community of New Haven				
Action #	11-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	35/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	**Deferred**	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Understand flood risk				
Lead Agency/ Organization	Crosby Township Trustees				
Supporting Agency/ Organization	Crosby Township Fire				
Participating Jurisdictions	Crosby Township				
Implementation Plan					
Project Duration	**Deferred**		**Estimated Completion Date**	**Deferred**	
Potential Funding Source	Local Resources, FMA,		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Deer Park – City

Mitigation Strategies & Actions

Mitigation Action	Phase 2 of the Blue Ash Street scape project which includes new electric poles, storm were replacements, sidewalks, parking, and gateway into SLVT				
Action #	12-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*40/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B, C***		**Project Status**	New	
Hazard(s) Mitigated	Earthquake, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Mass Transportation Incident (e.g., Train Derailment), Severe Thunderstorm, Urban Fires				
Benefits (Loss Avoided)	Transportation Safety/ Reinforced Infrastructure				
Lead Agency/ Organization	BJ – CM Office				
Supporting Agency/ Organization	Duke Energy/ ODOT/ OKI/ MSI				
Participating Jurisdictions	Deer Park				
Implementation Plan					
Project Duration	**2 years**		**Estimated Completion Date**	**2027**	
Potential Funding Source	Local Resources		**Estimated Cost**	$6,000,000	

Mitigation Action	Pave, address the fire hydrants, and sidewalk on Plienfeld Rd.				
Action #	12-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	40/40
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B, C**		**Project Status**	New	
Hazard(s) Mitigated	Earthquake, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Mass Transportation Incident (e.g., Train Derailment), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm),Urban Fires				
Benefits (Loss Avoided)	Improve infrastructure and Fire Safety				
Lead Agency/ Organization	City Manager's Office				

Mitigation Action	Pave, address the fire hydrants, and sidewalk on Plienfeld Rd.		
Supporting Agency/ Organization	Sorla/ HCEO/ Cincinnati Water Works		
Participating Jurisdictions	Deer Park City		
Implementation Plan			
Project Duration	**1 year**	**Estimated Completion Date**	**2024**
Potential Funding Source	Local funding	**Estimated Cost**	**High** ($800,000)

Mitigation Action	Blue Ash Road streetscape project. As part of this project, Duke Energy transmission lines are currently wood poles and would need to be replaced with steel poles				
Action #	12-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	31/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Thunderstorm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Improve infrastructure				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Duke Energy, Railroad, Hamilton County				
Participating Jurisdictions	Deer Park City				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Duke Energy, PROTECT, HMGP		**Estimated Cost**	**High** ($3 million)	

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels				
Action #	12-04	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***	**Project Status**	Ongoing
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm		
Benefits (Loss Avoided)	Mitigate flood damages and losses		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development		
Participating Jurisdictions	Deer Park City		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, HMGP, CDBG, OCRA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Build/establish shelters with generators				
Action #	12-05	**Year Initiated**	2013	**Prioritization Score**	20/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Establish shelters for residents and ensure power to critical facilities				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Deer Park City				
Implementation Plan	Build and establish shelters, especially in areas with mobile home parks.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	

Mitigation Action	Build/establish shelters with generators		
Potential Funding Source	BRIC, HMGP, CDBG, Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000

Mitigation Action	Conduct engineering impact studies on flood mitigation				
Action #	12-06	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Identify flood-prone areas				
Lead Agency/ Organization	Deerk Park City Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Army Corp of Engineers				
Participating Jurisdictions	Deer Park City, Hamilton County				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	FMA, OCRA		**Estimated Cost**	**Medium** ($10,000 to $100,000)	

Delhi – Township

Mitigation Strategies & Actions

Mitigation Action	Update and separate the combined sewer system, Delhi Business district (Greenwell to Anderson Ferry)				
Action #	13-01	**Year Initiated**	*2024*	**STAPLEE+E Prioritization Score**	*24/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C, D*** ***Goal 2, Objective A, B*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), HazMat Incident (e.g., Chemical Spill), Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Reduce sewer overflow				
Lead Agency/ Organization	Delhi Township Trustees, Public Works				
Supporting Agency/ Organization	Metropolitan Sewer District				
Participating Jurisdictions	Delhi Township, Hamilton County				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	MSD, HMGP, State funds, Local resources		**Estimated Cost**	High ($100 Million)	

Mitigation Action	Update mass casualty plans to address emergency response to a mass transportation incident				
Action #	13-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B, D** **Goal 2, Objective C** **Goal 3, Objective A, B**		**Project Status**	**Completed**	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident, Mass Transportation Incident, Infrastructure and Structural Failure, Terrorism/Active Assailant				
Benefits (Loss Avoided)	Prepare for mass casualty incident				

Mitigation Action	Update mass casualty plans to address emergency response to a mass transportation incident		
Lead Agency/ Organization	Delhi Township Fire Department		
Supporting Agency/ Organization	Delhi Township Public Works/Police		
Participating Jurisdictions	Delhi Township		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** ($10,000-100,000)

Mitigation Action	Provide updated agency and multi-agency preparedness for active shooter incidents in jurisdictional educational facilities.				
Action #	13-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*20/35*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B*** ***Goal 3, Objective A, B***		**Project Status**	**Completed**	
Hazard(s) Mitigated	Terrorism/Active Assailant				
Benefits (Loss Avoided)	Loss of life, Reduce fatalities				
Lead Agency/ Organization	Delhi Township Fire Department				
Supporting Agency/ Organization	Delhi Township Police Department				
Participating Jurisdictions	Delhi Township				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local Resources, School District		**Estimated Cost**	**Medium** ($10,000)	

Mitigation Action	Purchase and update generators for key community facilities				
Action #	13-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, D**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Delhi Public Works				
Supporting Agency/ Organization	Delhi Township Trustees				
Participating Jurisdictions	Delhi Township				
Implementation Plan	Purchase and update generators for key community facilities. Delhi has a total of six (6) emergency generators for "first responder" buildings. Two of those generators are older than 20 years.				
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years))	
Potential Funding Source	BRIC, HMGP		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Pre-Disaster Mitigation (PDM) Grant Program Acquisition Project				
Action #	13-05	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*35/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Phase 1 and 2 are completed; over 20 houses have been removed				
Lead Agency/ Organization	Delhi Township Public Works				

Mitigation Action	Pre-Disaster Mitigation (PDM) Grant Program Acquisition Project		
Supporting Agency/ Organization	Metropolitan Sewer District MSD		
Participating Jurisdictions	Delhi Township		
Implementation Plan	Rapid Run between Anderson Ferry and Neeb Road has been plagued with overland flooding for years. Beginning in 2009 the township applied for FEMA grants with MSD providing the local match. The township received three grants totaling over $10 million from FEMA and MSD for a local match and have been able to purchase 36 homes, demolish them, and leave behind perpetual green space. After 13 years the township finished this project in March 2023. Phase I – 8/9 – March 2013 Phase II – 11/13 – August 2013 Phase III – 16/24 – March 2023		
Project Duration	**Completed**	**Completion Date**	**May 17, 2023**
Funding Source	Currently funded by Pre-Disaster Mitigation (PDM) Grant Program FY 2017	**Estimated Cost**	**High** (4 million)

Elmwood Place – Village

Mitigation Strategies & Actions

Mitigation Action	Relocate Public Works and the firehouse to less vulnerable location				
Action #	14-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*39/40*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective B***		**Project Status**	New	
Hazard(s) Mitigated	Earthquake, HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Severe Winter Storm (e.g., Ice Storm), Urban Fires, Wildfire				
Benefits (Loss Avoided)	Maintain essential services				
Lead Agency/ Organization	Mayor's Office				
Supporting Agency/ Organization	Fire Department				
Participating Jurisdictions	Elmwood Place				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	HMGP, State funds, local resources		**Estimated Cost**	$750,000	

Ongoing mitigation strategies for this jurisdiction are addressed in the "Hamilton County Jurisdiction Profile.

Evendale – Village

Mitigation Strategies & Actions

Mitigation Action	Campus hardening of village grounds for community safety				
Action #	15-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*38/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Terrorism/Active Assailant				
Benefits (Loss Avoided)	Prevent loss of life and injuries				
Lead Agency/ Organization	Safety Task force, Police, Fire, Service Departments				
Supporting Agency/ Organization					
Participating Jurisdictions	Evendale				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	General Funds		**Estimated Cost**	$400,000	

Mitigation Action	Replace and upgrade generators at community buildings including Police, Fire, and Recreation. Procure portable generators for traffic signals during power outages				
Action #	15-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				

Mitigation Action	Replace and upgrade generators at community buildings including Police, Fire, and Recreation. Procure portable generators for traffic signals during power outages		
Lead Agency/ Organization	Evendale Service Department		
Supporting Agency/ Organization			
Participating Jurisdictions	Evendale Village		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources, BRIC, HMGP	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Equip existing facilities as safe rooms/shelters				
Action #	15-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*29/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase capability to safeguard and shelter individuals				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Evendale Village				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, OCRA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop and implement safety education for residents and business using natural gas				
Action #	15-04	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Flood (Riverine), Flood (Flash), Severe Winter Storm, High Wind and Tornado, Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Public education and outreach				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Evendale Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Develop independent fuel depot				
Action #	15-05	**Year Initiated**	*2007*	**Prioritization Score**	
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	**Completed**	
Hazard(s) Mitigated					
Benefits (Loss Avoided)	Earthquake, Flood (Riverine), Flood (Flash), Severe Winter Storm, High Wind and Tornado				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Evendale				
Implementation Plan	Completed in 2008				

Mitigation Action	Develop independent fuel depot		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Completed	**Estimated Cost**	Completed

Mitigation Action	Build/establish shelters with generators for smaller jurisdictions and mobile home parks				
Action #	15-06	**Year Initiated**	2013	**Prioritization Score**	20
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Earthquake, Flood (Riverine), Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Hazardous Materials Incident				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Village Council, County EMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County, Cincinnati, Deer Park, Evendale, Harrison, Lincoln Heights, Loveland, Mt Healthy, Silverton, Springdale, Cleves				
Implementation Plan	This action can be deleted because it is covered by other actions in the plan.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Deleted		**Estimated Cost**	Deleted	

Mitigation Action	Establish mutual aid response agreements within the county				
Action #	15-07	**Year Initiated**	*2013*	**Prioritization Score**	*34/84*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Mitigate damages through supported response efforts				

Mitigation Action	Establish mutual aid response agreements within the county		
Lead Agency/ Organization	Police, Fire, Service Departments		
Supporting Agency/ Organization			
Participating Jurisdictions	Evendale		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources	**Estimated Cost**	TBD

Fairfax – Village

Mitigation Strategies & Actions

Mitigation Action	Prepare and retrofit the R.G. Cribbet Community Center as an emergency community shelter; includes generator, handicapped access; ADA compliant restroom facilities; stuck up on supplies (cots, blankets)				
Action #	16-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective B*** ***Goal 3, Objective A, B*** ***Goal 4, Objective C***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant, Urban Fires, Wildfire				
Benefits (Loss Avoided)	Avoid financial loss/strain to residents				
Lead Agency/ Organization	Village of Fairfax Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Village of Fairfax				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	HMGP, BRIC		**Estimated Cost**	**High** ($150,000)	

Mitigation Action	Property acquisition of homes affected by hillside erosion on Eleanor				
Action #	16-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	25/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B, C** **Goal 2, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Landslide, Severe Thunderstorm, Infrastructure and Structural Failure				

Mitigation Action	Property acquisition of homes affected by hillside erosion on Eleanor		
Benefits (Loss Avoided)	Mitigate property damage		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Fairfax Village		
Implementation Plan	Property acquisition of homes affected by hillside erosion on Eleanor. Approximately 2-4 homes need to be acquired.		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	FEMA PDM, HMGP or FMA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Mitigate debris build up in Little Duck Creek at Railroad Bridge				
Action #	16-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*25/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C*** ***Goal 2, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash), Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Property damage loss avoided				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Fairfax Village				
Implementation Plan	Mitigate debris build up in Little Duck Creek at Railroad Bridge. Remove center pier to allow water/debris to flow through bridge area. Prevent backflow/flash flooding to Little Duck Creek area that affects residential homes.				
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	FEMA BRIC, HMGP or FMA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Institute a buy-out plan for flood prone structures				
Action #	16-04	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 2, Objective A**		**Project Status**	**Completed**	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning Development				
Participating Jurisdictions	Fairfax Village				
Implementation Plan	Identify and mitigate repetitive loss properties.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	FMA, Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	16-05	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Fairfax Village (Administrator, Public Works Supervisor)				
Supporting Agency/ Organization	Hamilton County EMHSA				

Mitigation Action	Acquire transfer switches/generators for all shelters		
Participating Jurisdictions	Fairfax Village		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, FEMA, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct an engineering study to mitigate landslide and erosion issues				
Action #	16-06	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Landslide, Severe Thunderstorm, Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion)				
Benefits (Loss Avoided)	Identify hazard-prone areas in the City				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Planning Development, Hamilton County Engineer's Office				
Participating Jurisdictions	Fairfax Village				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	CDBG, OCRA, Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct engineering studies on flood mitigation				
Action #	16-07	**Year Initiated**	*2013*	**Prioritization Score**	*25/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	**Deleted**	

Mitigation Action	Conduct engineering studies on flood mitigation		
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm		
Benefits (Loss Avoided)			
Lead Agency/ Organization	Village Council,		
Supporting Agency/ Organization	County EMA, Village Administrator		
Participating Jurisdictions	Hamilton County, Cincinnati, Deer Park, Fairfax, Madeira, Silverton, Woodlawn		
Implementation Plan	This action can be deleted as is has been addressed.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local resources	**Estimated Cost**	TBD

Mitigation Action	Establish mutual aid response agreements within the county				
Action #	16-08	**Year Initiated**	2013	**Prioritization Score**	34/84
Goal(s)/Objective(s) Addressed	**Goal 3, Objective B**		**Project Status**	Deleted	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Response assistance				
Lead Agency/ Organization	County EMA, Community Councils				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County, Mariemont, Addyston, Cleves, Evendale, Fairfax, Newtown, Terrace Park				
Implementation Plan	This action can be deleted. It has been addressed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local resources		**Estimated Cost**	**TBD**	

Mitigation Action	Acquire communication radios for emergency personnel				
Action #	16-09	**Year Initiated**	*2013*	**Prioritization Score**	*27/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Improve emergency communication capabilities				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Fairfax Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	SAFER, HSGP, SHSP Local resources		**Estimated Cost**	TBD	

Forest Park – City

Mitigation Strategies & Actions

Mitigation Action	Tabletop exercise for city employees and educate the public on disaster preparedness for their homes and residences				
Action #	17-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*31/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 2, Objective A, C*** ***Goal 3, Objective B*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Cyber Incident, Earthquake, Extreme Cold Incident, Extreme Heat Incident, HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Public Health Emergency (e.g.), Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm),				
Benefits (Loss Avoided)	Disaster preparedness, property and life protection				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	City of Forest Park				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources (City Funds)		**Estimated Cost**	Low ($5,000)	

Mitigation Action	Identity shelter locations, capacities and capabilities, coordinate volunteers and donations				
Action #	17-02	**Year Initiated**	2024	**STAPLEE+E Prioritization Score**	30/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A** **Goal 2, Objective A** **Goal 3, Objective B** **Goal 4, Objective D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Mass Transportation Incident (e.g., Train Derailment), Severe Winter Storm (e.g., Ice Storm), Wildfire				
Benefits (Loss Avoided)	Community assistance				
Lead Agency/ Organization	City of Forest Park				

Mitigation Action	Identity shelter locations, capacities and capabilities, coordinate volunteers and donations		
Supporting Agency/ Organization	Hamilton County, Red Cross, FEMA, Winton Woods School District		
Participating Jurisdictions	Hamilton County, City of Forest Park		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources	**Estimated Cost**	TBD

Mitigation Action	Allowing for more access to safe rooms for high wind events at existing homes/apartments/public places. Any new residential home/public assemblies are required to have a "safe room/place" built for that structure				
Action #	17-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E Goal 2, Objective B Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Thunderstorm, High Wind and Tornado				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Zoning/Building Department				
Supporting Agency/ Organization					
Participating Jurisdictions	Forest Park City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	WW-5 Conduct winter weather risk awareness activities. Strategies to drive safety in driver education classes; educating about fuel-burning equipment and alarms				
Action #	17-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*25/35*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A, B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm, Fire, Mass Transportation Incident				
Benefits (Loss Avoided)	Life safety, property protection				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	WWCSD, AAA, local businesses				
Participating Jurisdictions	Forest Park City				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** from $10,000 to $100,000	

Mitigation Action	Conduct lightning awareness programs. Teach students about the dangers of lightning and how to take precautions				
Action #	17-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Thunderstorm				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Recreation, Duke Energy				
Participating Jurisdictions	Forest Park City				
Implementation Plan					

Mitigation Action	Conduct lightning awareness programs. Teach students about the dangers of lightning and how to take precautions		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	17-06	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Public Works, School District				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Forest Park City				
Implementation Plan	Procure additional generators for schools and government buildings				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct a study on winter snow maintenance of older homes				
Action #	17-07	**Year Initiated**	2013	**Prioritization Score**	19/84

Mitigation Action	Conduct a study on winter snow maintenance of older homes		
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**	**Project Status**	Ongoing
Hazard(s) Mitigated	Extreme Cold Incident, Severe Winter Storm		
Benefits (Loss Avoided)	Identify and monitor problem areas		
Lead Agency/ Organization	Forest Park City Building Dept.		
Supporting Agency/ Organization			
Participating Jurisdictions	Forest Park City		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Community Grants, Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Seek Storm Water Repair Grant				
Action #	17-08	**Year Initiated**	*2007*	**Prioritization Score**	*24*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Protect building stock				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Forest Park City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources, HMGP		**Estimated Cost**	**Medium** from $10,000 to $100,000	

Mitigation Action	Develop an enhanced county-wide emergency notification communication system				
Action #	17-09	**Year Initiated**	2013	**Prioritization Score**	14/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	Deleted	
Hazard(s) Mitigated					
Benefits (Loss Avoided)					
Lead Agency/ Organization	County EMA, FP IT				
Supporting Agency/ Organization					
Participating Jurisdictions					
Implementation Plan	This action can be deleted. It has already been addressed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**		

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	17-10	**Year Initiated**	*2013*	**Prioritization Score**	*30/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)					
Lead Agency/ Organization	Community Councils. Trustees, County EMHSA				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County, Arlington Heights, Cheviot, Forest Park, Lincoln Heights, Mariemont, Mt Healthy, North College Hill, Norwood, Reading, Sharonville, Golf Manor, Greenhills, Woodlawn				

Mitigation Action	Enhance snow removal equipment and supplies		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	USDOT, FHWA, ODOT, Local Resources	**Estimated Cost**	TBD

Glendale – Village

Mitigation Strategies & Actions

Mitigation Action	Continued replacement of aging water, wastewater and stormwater infrastructure				
Action #	18-01	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	36/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, D Goal 2, Objective A, B , C Goal 3, Objective A, B Goal 4, Objective B, C**		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Drought, Flood (Flash), Flood (Riverine), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm				
Benefits (Loss Avoided)	Reducing infrastructure failure, property loss, and service interruption				
Lead Agency/ Organization	Utility Department, Street Department				
Supporting Agency/ Organization	Village Administration, Village Council				
Participating Jurisdictions	Village of Glendale				
Implementation Plan	Includes water main replacement, sewer main replacement, storm sewer line replacement, and other stormwater mitigation infrastructure, designed around existing residential and commercial development,				
Project Duration	5 years		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	HMGP, BRIC, Local resources		**Estimated Cost**	TBD	

Mitigation Action	Permanent generator installation at Glendale Fire Station/Town Hall to power necessary Fire Department equipment and make Town Hall space functional for use as warming/cooling center, Point of Dispensing, etc.				
Action #	18-02	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*35/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A Goal 2, Objective B, C Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Extreme Cold Incident, Extreme Heat Incident, High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Maintains electricity, heat, AC to public building, POD facility				

Mitigation Action	Permanent generator installation at Glendale Fire Station/Town Hall to power necessary Fire Department equipment and make Town Hall space functional for use as warming/cooling center, Point of Dispensing, etc.		
Lead Agency/ Organization	Fire Department		
Supporting Agency/ Organization	Police Department, Village Council		
Participating Jurisdictions	Village of Glendale		
Implementation Plan			
Project Duration	**2 years**	**Estimated Completion Date**	**2025**
Potential Funding Source	Federal, State Grants, Local Funds	**Estimated Cost**	High ($100,000)

Mitigation Action	Replace Fire apparatus on rotating 10-15 year lifecycle.				
Action #	18-03	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B Goal 3, Objective A, B Goal 4, Objective B**		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Severe Thunderstorm, Urban Fires, Wildfires				
Benefits (Loss Avoided)	Enhanced equipment safety and effectiveness, less maintenance				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Village Council				
Participating Jurisdictions	Village of Glendale				
Implementation Plan	Pumper to be replaced in 2025, Engine needing replacement in approximately 2036. Costs of replacement are unknown.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	SAFER, Local Funds		**Estimated Cost**	**High** greater than $100,00	

Mitigation Action	Purchase portable generator				
Action #	18-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	33/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Public Works				
Participating Jurisdictions	Glendale Village				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	HMGP, BRIC		**Estimated Cost**	**Medium** ($10,000)	

Mitigation Action	Water main/hydrant replacement				
Action #	18-05	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Drought, Extreme Cold Incident, Extreme Heat Incident, Fire				
Benefits (Loss Avoided)	Water loss to the community and region				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					

Mitigation Action	Water main/hydrant replacement		
Participating Jurisdictions	Glendale Village		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local utility companies, community grants	**Estimated Cost**	**High** (from $100,000)

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options				
Action #	18-06	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	**Deferred**	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect infrastructure and building stock				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Metropolitan Sewer District, Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	Glendale Village				
Implementation Plan	There has not been a comprehensive county-wide plan on mitigating storm and sewer lines with regards to the impacts of flooding since the 1960s and no one entity would oversee a planning project of this magnitude. Multiple jurisdictions and departments/agencies would be involved if funding were available.				
Project Duration	**Deferred**		**Estimated Completion Date**	**Deferred**	
Potential Funding Source	Local Resources, ODNR, FEMA, FHWA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Expand inventory of emergency equipment				
Action #	18-07	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase response capabilities				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Glendale Village				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct a study to evaluate inertial valves				
Action #	18-08	**Year Initiated**	2013	**Prioritization Score**	21/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A** **Goal 2, Objective C**		**Project Status**	Deleted	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)					
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					

Mitigation Action	Conduct a study to evaluate inertial valves		
Participating Jurisdictions	Glendale Village		
Implementation Plan	This action can be deleted. It is no longer needed.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Evaluation of backflow devices for sanitary systems				
Action #	18-09	**Year Initiated**	*2007*	**Prioritization Score**	*24*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Deleted	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Protect infrastructure				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Glendale Village				
Participating Jurisdictions					
Implementation Plan	This action can be deleted. It is no longer needed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Golf Manor – Village

Mitigation Strategies & Actions

Mitigation Action	Installation of permanent generator in the community hall, PD building and remodeling and refurnishing of kitchen facility to provide meals and food storage in case of public shelter emergency needs.				
Action #	19-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*40/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A, B*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Cyber Incident, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant, Urban Fires, Wildfire				
Benefits (Loss Avoided)	Public Shelter will help avoid public unrest due to loss of power, communications and will centralize recovery, mitigation, and unified command				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Golf Manor				
Implementation Plan					
Project Duration	**1 year**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	FEMA, State, Local Resources, Private Donations		**Estimated Cost**	$950,000	

Mitigation Action	Rebuild salt storage facility and purchase plowing (salt) equipment				
Action #	19-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	32/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				

Mitigation Action	Rebuild salt storage facility and purchase plowing (salt) equipment		
Benefits (Loss Avoided)	Reduce road hazards. Able to store more and share with adjacent communities in emergency		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Golf Manor Village		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** ($50,000 facility, $60,000 equipment)

Mitigation Action	Conversion of municipal building basement to operations center/shelter				
Action #	19-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*28/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D, E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards, Extreme Cold Incident, Extreme Heat Incident, Flood (Riverine), Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Civil Disorder/Riot, Infrastructure and Structural Failure, Public Health Emergency, Terrorism/Active Assailant				
Benefits (Loss Avoided)	Establish shelters for residents and continuity of operations				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Golf Manor Village				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Acquisition of property on stover cul-de-sac to mitigate infrastructure damage from storm flooding				
Action #	19-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	28/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm, Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Mitigate damages to personal property and road. Address drainage issues impacting infrastructure				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Golf Manor Village				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	FMA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	19-05	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
Participating Jurisdictions			
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, BRIC, HMGP	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	19-06	**Year Initiated**	2013	**Prioritization Score**	28/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Golf Manor Village				
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Golf Manor residents can sign up for. Completed 2023.				
Project Duration	Completed		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Equip existing facilities as safe rooms/shelters				
Action #	19-07	**Year Initiated**	*2013*	**Prioritization Score**	*29/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase capability to safeguard and shelter individuals				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Golf Manor Village				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, OCRA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	19-08	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					

Mitigation Action	Enhance snow removal equipment and supplies		
Participating Jurisdictions	Golf Manor Village		
Implementation Plan	Enhance/purchase snow removal equipment and supplies.		
Project Duration	TBD	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	USDOT, FHWA, ODOT, Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Green – Township

Mitigation Strategies & Actions

Mitigation Action	Reduce flash flooding impacts due to excessive rainfall as the result of increasing number of 100-year storms				
Action #	20-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*27/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A, C*** ***Goal 3, Objective B*** ***Goal 4, Objective A, B, D***		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash), Flood (Riverine), Landslide, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Property damage prevention				
Lead Agency/ Organization	Public Services				
Supporting Agency/ Organization	Hamilton County				
Participating Jurisdictions	Green Township/ Hamilton County				
Implementation Plan					
Project Duration	Ongoing		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	BRIC, CDBG, HMGP		**Estimated Cost**	$250,000 - $500,000	

Mitigation Action	Plan to house and shelter a large portion of the township's population in the event of an extreme natural incident (i.e. Tornado or power outage). Natural hazards are significant to Green Township's elderly population, residential structure, and utilities.				
Action #	20-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	21/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D** **Goal 2, Objective A, B, C** **Goal 3, Objective A, B** **Goal 3, Objective A, B, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, High Wind and Tornado, Infrastructure and Structure Failure (e.g., Bridge Collapse), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				

Mitigation Action	Plan to house and shelter a large portion of the township's population in the event of an extreme natural incident (i.e. Tornado or power outage). Natural hazards are significant to Green Township's elderly population, residential structure, and utilities.		
Benefits (Loss Avoided)	Life safety		
Lead Agency/ Organization	Green Township Fire Dept		
Supporting Agency/ Organization	AGI, Green Township Public Works		
Participating Jurisdictions	Green Township		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	TBD

Mitigation Action	Mass casualty/active shooter preparedness and prevention in local schools				
Action #	20-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D, E Goal 2, Objective B Goal 3, Objective A, B**		**Project Status**	Completed	
Hazard(s) Mitigated	Terrorism/Active Assailant				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Police				
Supporting Agency/ Organization	Fire/EMS, Local school boards				
Participating Jurisdictions	Fire/EMS, Local school boards				
Implementation Plan	Mass casualty/active shooter preparedness and prevention in local schools: Oak Hills local schools, Northwest local schools, Great Oaks JVS, Cincinnati Archdiocese				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local budget/state funding		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Mitigate hazardous materials transportation incident on I-74 (4 miles) between mm7 and mm14				
Action #	20-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*26/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D, E*** ***Goal 2, Objective C*** ***Goal 3, Objective A, B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Mitigate HAZMAT incidents on major roadway				
Lead Agency/ Organization	Fire/EMS				
Supporting Agency/ Organization	Police				
Participating Jurisdictions	Green Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local budget		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Mitigate transportation accidents on I-74 (4 miles) between mm7 and mm14				
Action #	20-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D** **Goal 2, Objective C** **Goal 3, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Mass Transportation Incident				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Fire/EMS				
Supporting Agency/ Organization	Police				
Participating Jurisdictions	Green Township				
Implementation Plan					

Mitigation Action	Mitigate transportation accidents on I-74 (4 miles) between mm7 and mm14		
Project Duration	TBD	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	ODOT, Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Mitigate sewer flooding on Antonius Drive				
Action #	20-06	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*24/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B***		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Mitigate flooding and property damage				
Lead Agency/ Organization	Green Township Public Service				
Supporting Agency/ Organization	Metropolitan Sewer District				
Participating Jurisdictions	Green Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	MSD		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Investigate mitigation alternatives at Muddy Creek Rd (3600 Block) to address sewer overflow flooding between Sylved Land and Allview Ct				
Action #	20-07	**Year Initiated**	2018	**STAPLEE Prioritization Score**	24/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Reduce flooding concerns and impacts				

Mitigation Action	Investigate mitigation alternatives at Muddy Creek Rd (3600 Block) to address sewer overflow flooding between Sylved Land and Allview Ct		
Lead Agency/ Organization	Green Township Public Services		
Supporting Agency/ Organization	Metropolitan Sewer District		
Participating Jurisdictions	Green Township		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	Metropolitan Sewer District	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Mitigate flooding on Johnson Rd at Haft Rd. Improve flow of stream under I-74 culvert				
Action #	20-08	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*23/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C***		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Flooding on roadway				
Lead Agency/ Organization	Green Township Trustees, ODOT				
Supporting Agency/ Organization					
Participating Jurisdictions	Green Township				
Implementation Plan	Mitigate flooding on Johnson Rd at Haft Rd. Improve flow of stream under I-74 culvert. Extreme flooding in the past has created issues. Issue was resolved by ODOT in 2017/2018*.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Greenhills – Village

Mitigation Strategies & Actions

Mitigation Action	Traffic infrastructure study of Winton Road corridor especially South of Cromwell				
Action #	21-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*40/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment)				
Benefits (Loss Avoided)	Life Safety				
Lead Agency/ Organization	Public Works				
Supporting Agency/ Organization	Law Enforcement				
Participating Jurisdictions	Greenhills				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	ODOT, Local Resources		**Estimated Cost**	Medium ($50,000)	

Mitigation Action	Installation of box culverts or rain gardens in multiple locations				
Action #	21-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	37/40
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Reduce storm water flooding issues				
Lead Agency/ Organization	Greenhills Public Works				
Supporting Agency/ Organization	Hamilton County Stormwater District				
Participating Jurisdictions	Greenhills				

Mitigation Action	Installation of box culverts or rain gardens in multiple locations		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, HMGP, FMA	**Estimated Cost**	High ($250,000)

Mitigation Action	Conduct regular maintenance for drainage systems and flood control structures				
Action #	21-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	31/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash), Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Preventing flooding and storm water overflow damages				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Public Works				
Participating Jurisdictions	Greenhills Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Protect infrastructure and critical facilities by purchasing generators for key buildings				
Action #	21-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*29/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood,				

Mitigation Action	Protect infrastructure and critical facilities by purchasing generators for key buildings		
	Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Mitigate infrastructure damage and ensure power to critical facilities		
Lead Agency/ Organization	Village Administration		
Supporting Agency/ Organization			
Participating Jurisdictions	Greenhills Village		
Implementation Plan	This action would prevent municipal facilities from losing power in the event of an emergency situation. This would allow Village operation to continue as normal in an emergency situation.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Establish standards for inspection and management of trees and tree pruning around power lines and drainage systems				
Action #	21-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	33/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Completed	
Hazard(s) Mitigated	Severe Thunderstorm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Reduce power failure				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Duke Energy				
Participating Jurisdictions	Greenhills Village				
Implementation Plan	Duke Energy conducts tree trimming and mitigation on an as needed basis and already has incorporated this mitigation practice as part of its daily operations.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	

Mitigation Action	Establish standards for inspection and management of trees and tree pruning around power lines and drainage systems		
Potential Funding Source	Local Funds, FEMA Public Assistance Grants	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Retrofitting public buildings to prevent wind damage				
Action #	21-06	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*33/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Thunderstorm, High Wind and Tornado				
Benefits (Loss Avoided)	Protects public buildings from damage and hazards				
Lead Agency/ Organization	Village Administration				
Supporting Agency/ Organization	Greenhills Building Official				
Participating Jurisdictions	Greenhills Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	21-07	**Year Initiated**	2013	**Prioritization Score**	21/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Warning and notification		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center		
Participating Jurisdictions	Greenhills Village		
Implementation Plan	This action can be deleted. It is covered by a countywide action.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	21-08	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, E***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Greenhills Village				
Implementation Plan					

Mitigation Action	Acquire transfer switches/generators for all shelters		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources, FEMA, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	21-09	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Greenhills Village				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	USDOT, FHWA, ODOT, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct a study on winter snow maintenance of older homes				
Action #	21-10	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	**Deferred**	
Hazard(s) Mitigated	Extreme Cold Incident, Severe Winter Storm				
Benefits (Loss Avoided)	Identify and monitor problem areas				

Mitigation Action	Conduct a study on winter snow maintenance of older homes		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Greenhills Village		
Implementation Plan			
Project Duration	**Deferred**	**Estimated Completion Date**	**Deferred**
Potential Funding Source	CDBG, Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Storm water repair grant				
Action #	21-11	**Year Initiated**	2007	**Prioritization Score**	
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Protect building stock				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Greenhills				
Implementation Plan					
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources, HMGP		**Estimated Cost**	**Medium** from $10,000 to $100,000	

Harrison – City

Mitigation Strategies & Actions

Mitigation Action	Replace existing overhead utilities with underground utilities to eliminate long power outages during extreme weather events				
Action #	22-01	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	*30/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B, D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A*** ***Goal 4, Objective B***		**Project Status**	New	
Hazard(s) Mitigated	High Wind and Tornado, Severe Thunderstorm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Utility Interruptions				
Lead Agency/ Organization	City of Harrison/Harrison Township				
Supporting Agency/ Organization	Duke				
Participating Jurisdictions	City of Harrison/Harrison Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	PROTECT, HMGP		**Estimated Cost**	High ($500,000+)	

Mitigation Action	Build/establish shelters with generators				
Action #	22-02	**Year Initiated**	*2013*	**Prioritization Score**	*20/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Terrorism, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Establish Shelters for residents and ensure power to critical facilities				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				

Mitigation Action	Build/establish shelters with generators		
Participating Jurisdictions	Harrison City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, HMGP. CDBG	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Update emergency operations plan for City of Harrison and Harrison Township				
Action #	22-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Enhance planning and plan integration				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Harrison City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Develop plan to shelter animals in a disaster				
Action #	22-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*28/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Life safety of pets and livestock				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Harrison City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** ($10,000 to $100,000)	

Mitigation Action	Build/establish shelters with generators				
Action #	22-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	20/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Terrorism/Active Assailant, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Establish shelters for residents and ensure power to critical facilities				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				

Mitigation Action	Build/establish shelters with generators		
Participating Jurisdictions	Harrison City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	FEMA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	22-06	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Harrison City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 5 years)	
Potential Funding Source	Local resources, FEMA, OCRA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Institute a buy-out plan for flood prone structures				
Action #	22-07	**Year Initiated**	2013	**Prioritization Score**	1/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective A**		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Flood (Riverine)				
Benefits (Loss Avoided)					
Lead Agency/ Organization	Community Leaders, County EMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County, Arlington Heights, Cincinnati, Harrison, Loveland, Reading, Addyston, Cleves, Fairfax, North Bend				
Implementation Plan	This action can be deleted. It is covered by other actions.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	FMA, local resources		**Estimated Cost**		

Mitigation Action	Develop an enhanced county-wide emergency notification communication system				
Action #	22-08	**Year Initiated**	*2017*	**Prioritization Score**	*14*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Timely warning system for Hamilton County residents				
Lead Agency/ Organization	Hamilton County EMHSA				
Supporting Agency/ Organization	Hamilton County Communications Center				

Mitigation Action	Develop an enhanced county-wide emergency notification communication system		
Participating Jurisdictions	Hamilton County and Applicable/Interested Jurisdictions		
Implementation Plan	This action can be deleted. It is covered by a countywide action.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Harrison – Township

Mitigation Strategies & Actions

Mitigation Action	Replace existing overhead utilities with underground utilities to eliminate long power outages during extreme weather events				
Action #	23-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*30/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B, D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A*** ***Goal 4, Objective B***		**Project Status**	New	
Hazard(s) Mitigated	High Wind and Tornado, Severe Thunderstorm (e.g., Ice Storm),				
Benefits (Loss Avoided)	Utility Interruptions				
Lead Agency/ Organization	City of Harrison/Harrison Township				
Supporting Agency/ Organization	Duke Energy				
Participating Jurisdictions	City of Harrison/Harrison Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	HMGP, CDBG		**Estimated Cost**	$500,00+	

Mitigation Action	Update emergency operations plan for City of Harrison Township				
Action #	23-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Update emergency operations plan for City of Harrison Township		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Enhance planning and preparedness		
Lead Agency/ Organization	Fire Department		
Supporting Agency/ Organization	Hamilton County EMA		
Participating Jurisdictions	Harrison Township		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop program/method to educate public on mitigate and preparedness				
Action #	23-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*31/35*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A, B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Public education				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Harrison Township				
Implementation Plan					

Mitigation Action	Develop program/method to educate public on mitigate and preparedness		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop plan to shelter animals in a disaster				
Action #	23-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	28/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E** **Goal 2, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Improve animal sheltering capabilities				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Township Trustees, Hamilton County EMHSA				
Participating Jurisdictions	Harrison Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Lincoln Heights – Village

Mitigation Strategies & Actions

Mitigation Action	Retrofitting and reinforce the Municipal Building for future hazards				
Action #	24-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*38/40*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Extreme Heat Incident, High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Severe Thunderstorm, Severe Winter Storm				
Benefits (Loss Avoided)	Strengthens Building				
Lead Agency/ Organization	Lincoln Heights Village Council				
Supporting Agency/ Organization	Public Works				
Participating Jurisdictions	Lincoln Heights				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	Local Resources, CDBG		**Estimated Cost**	$100,000	

Mitigation Action	Conduct a study to understand subsidence issues in the Village				
Action #	24-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	31/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Completed	
Hazard(s) Mitigated	Landslide (i.e., Sinkhole, Karst, Subsidence, Erosion), Infrastructure and Structural Failure, Mass Transportation Incident				
Benefits (Loss Avoided)	Road stabilization and improvements				
Lead Agency/ Organization	Village Council				

Mitigation Action	Conduct a study to understand subsidence issues in the Village		
Supporting Agency/ Organization	OPWC		
Participating Jurisdictions	Lincoln Heights Village		
Implementation Plan	Conduct study to understand subsidence issue in the Village. Several streets are experiencing subsidence due to needed maintenance and ongoing upgrades.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Municipal Road Fund, Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Conduct tree trimming and removal to address interference with utility/power lines				
Action #	24-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*29/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Thunderstorm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Power outages				
Lead Agency/ Organization	Duke Energy, Lincoln Heights Village (Local Service Department)				
Supporting Agency/ Organization					
Participating Jurisdictions	Lincoln Heights Village				
Implementation Plan	Conduct tree trimming and removal to address interference with utility/power lines, which is affecting residential areas in the Village.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	24-04	**Year Initiated**	2013	**Prioritization Score**	26/84

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**	**Project Status**	Ongoing
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Lincoln Heights Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, FEMA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification system				
Action #	24-05	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Village Council				

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification system		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center		
Participating Jurisdictions	Lincoln Heights Village		
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Lincoln Heights residents can sign up for. Completed 2023.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels				
Action #	24-06	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	Lincoln Heights Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	CDBG, HMGP, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Build/establish shelters with generators				
Action #	24-07	**Year Initiated**	*2013*	**Prioritization Score**	*20/84*

Mitigation Action	Build/establish shelters with generators		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***	**Project Status**	Completed
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Terrorism/Active Assailant, Infrastructure and Structural Failure		
Benefits (Loss Avoided)	Establish shelters for residents and ensure power to critical facilities		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Lincoln Heights Village		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	FEMA, Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	24-08	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Lincoln Heights Village				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	

Mitigation Action	Enhance snow removal equipment and supplies		
Potential Funding Source	USDOT, FHWA, ODOT, Local resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Acquire training, equipment and resources to handle small hazardous materials spills				
Action #	24-09	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Completed	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)	Enhanced capabilities to respond to HAZMAT incidents				
Lead Agency/ Organization	Fire Dept.				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Lincoln Heights Village				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Acquire storage and organizational equipment for municipal facilities				
Action #	24-10	**Year Initiated**	2013	**Prioritization Score**	24/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Acquire storage and organizational equipment for municipal facilities		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Increase response capabilities		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Lincoln Heights Village		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Remove Fuel Tanks at Municipal Site				
Action #	24-11	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Lincoln Heights Village				
Implementation Plan					

Mitigation Action	Remove Fuel Tanks at Municipal Site		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (less than $10,000)

Lockland – Village

Mitigation Strategies & Actions

Mitigation Action	Address erosion issue at the Municipal Building on the southside of the property to protect critical infrastructure and the bridge over West of the Mill Creek				
Action #	25-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*34/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective A, C*** ***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Landslide				
Benefits (Loss Avoided)	Loss of government infrastructure				
Lead Agency/ Organization	Village of Lockland Council				
Supporting Agency/ Organization	Army Corp of Engineers				
Participating Jurisdictions	Village of Lockland				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	HMGP, Local resources		**Estimated Cost**	$400,000	

Mitigation Action	Conduct study to determine hazardous materials coming through the Village from railroad and Interstate 75				
Action #	25-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	25/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Better understand what hazardous materials are transported through the community				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				

Mitigation Action	Conduct study to determine hazardous materials coming through the Village from railroad and Interstate 75		
Participating Jurisdictions	Lockland Village		
Implementation Plan	Conduct study to determine hazardous materials coming through the Village from railroad and Interstate 75		
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	ODOT, Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Identify existing facilities as safe rooms/shelters				
Action #	25-03	**Year Initiated**	*2013*	**Prioritization Score**	*29/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase capability to safeguard and shelter individuals				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Lockland Village				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	FEMA, OCRA		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	25-04	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Lockland Village				
Implementation Plan					
Project Duration	Ongoing		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC, OCRA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options				
Action #	25-05	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect infrastructure and building stock				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Metropolitan Sewer District, Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options		
Participating Jurisdictions	Lockland Village		
Implementation Plan	There has not been a comprehensive county-wide plan on mitigating storm and sewer lines with regards to the impacts of flooding since the 1960s and no one entity would oversee a planning project of this magnitude. Multiple jurisdictions and departments/agencies would be involved if funding were available.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources, ODNR, HMGP, CDBG, FHWA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Conduct an engineering study on the Lockland 'tunnel'				
Action #	25-06	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Deleted	
Hazard(s) Mitigated	Hazardous Materials Incident, Infrastructure Failure, Mass Transportation Incident				
Benefits (Loss Avoided)	Mitigate infrastructure damage				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	ODOT				
Participating Jurisdictions	Lockland Village				
Implementation Plan	This action can be deleted. It is no longer relevant.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Public/Private Partnership, FHWA, ODOT, FEMA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Implement industrial site buffering				
Action #	25-07	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*

Mitigation Action	Implement industrial site buffering		
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***	**Project Status**	Deleted
Hazard(s) Mitigated	Hazardous Materials Incident		
Benefits (Loss Avoided)	Life safety, environmental		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Lockland Village		
Implementation Plan	This action can be deleted. It is no longer relevant.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	EPA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Loveland – City

Mitigation Strategies & Actions

Mitigation Action	Hire a consultant to develop downtown-level and city-wide master plan including land-use, resiliency, sustainability, etc.				
Action #	26-01	**Year Initiated**	2018	**STAPLEE Prioritization Score**	33/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Landslide, Mass Transportation Incident				
Benefits (Loss Avoided)	Guide sustainable and effective development and growth				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Loveland City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local funds, Community Grants		**Estimated Cost**	**Medium** ($100,000)	

Mitigation Action	Institute a buyout plan for flood prone structures				
Action #	26-02	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C*** ***Goal 2, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning Development				

Mitigation Action	Institute a buyout plan for flood prone structures		
Participating Jurisdictions	Loveland City		
Implementation Plan	Identify and mitigate repetitive loss properties.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	FMA, Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels				
Action #	26-03	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	Loveland City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	HMGP, BRIC, OCRA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues				
Action #	26-04	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Completed	

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues		
Hazard(s) Mitigated	Earthquake, Flood (Flash), Landslide, Severe Thunderstorm, Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion)		
Benefits (Loss Avoided)	Identify hazard-prone areas in the City		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County Planning Development, Hamilton County Engineer's Office		
Participating Jurisdictions	Loveland City		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Community Development Grants, OCRA, FEMA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Clean up dumping along railroad lines				
Action #	26-05	**Year Initiated**	2007	**Prioritization Score**	20
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Address environmental concerns				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Railroads				
Participating Jurisdictions	Loveland City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	EPA, Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Build/establish shelters with generators for smaller jurisdictions and mobile home parks				
Action #	26-06	**Year Initiated**	*2013*	**Prioritization Score**	*20/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Hazardous Materials Incident				
Benefits (Loss Avoided)	Life safety protection measures				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	County EMA				
Participating Jurisdictions	Hamilton County, Cincinnati, Deer Park, Evendale, Harrison, Lincoln Heights, Loveland, Mt Healthy, Silverton, Springdale, Cleves				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	HMGP, BRIC,		**Estimated Cost**	TBD	

Mitigation Action	Protecting the Water Treatment facility power by burying the above ground electrical wires and install an automatic generator for backup power				
Action #	26-07	**Year Initiated**	2023	**Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C, D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Infrastructure and Structural Failure (e.g., Bridge Collapse), Public Health Emergency (e.g., Pandemic)				
Benefits (Loss Avoided)	Reduces the risk of fire and power outages due to downed lines.				
Lead Agency/ Organization	City of Loveland Public Works				
Supporting Agency/ Organization					
Participating Jurisdictions	Loveland City				
Implementation Plan					

Mitigation Action	Protecting the Water Treatment facility power by burying the above ground electrical wires and install an automatic generator for backup power		
Project Duration	7 years	**Estimated Completion Date**	**Long Term** (to be completed in more than 7 years)
Potential Funding Source	HMPG	**Estimated Cost**	**High** (more than $100,000)

Madeira – City

Mitigation Strategies & Actions

Mitigation Action	Improve the education of the public by using social media, websites, education materials for festivals and school visits to better prepare residents during most types of emergencies.				
Action #	27-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*38/40*
Goal(s)/Objective(s) Addressed	***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant, Urban Fires, Wildfires				
Benefits (Loss Avoided)	Emergency preparedness				
Lead Agency/ Organization	Madeira & Indian Hill Joint Fire District				
Supporting Agency/ Organization	Madeira PD, Indian Hill Rangers				
Participating Jurisdictions	Madeira				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resource		**Estimated Cost**	TBD	

Mitigation Action	Replace or repair culvert at Camargo Road				
Action #	27-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, C, D**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Landslide, Infrastructure Failure, Mass Transportation Incident				
Benefits (Loss Avoided)	Impact to Camargo Rd. This project will keep the main roadway open				

Mitigation Action	Replace or repair culvert at Camargo Road		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County Storm Water District, Hamilton County Engineer's Office		
Participating Jurisdictions	Madeira City		
Implementation Plan			
Project Duration	TBD	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	OH PW Comm, Hamilton County Storm Water District, Local Resources	**Estimated Cost**	**High** ($1 million)

Mitigation Action	Increase cyber security capabilities				
Action #	27-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*27/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 3, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Cyberattack				
Benefits (Loss Avoided)	Maintain security of confidential (tax) records				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Outside contractors to provide training				
Participating Jurisdictions	Madeira City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	27-04	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches				
Participating Jurisdictions	Madiera City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options				
Action #	27-05	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect infrastructure and building stock				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Metropolitan Sewer District, Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options		
Participating Jurisdictions	Madeira City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources, ODNR, FHWA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels				
Action #	27-06	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	Madiera City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	HMGP, BRIC, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct engineering impact studies on flood mitigation				
Action #	27-07	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	

Mitigation Action	Conduct engineering impact studies on flood mitigation		
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm		
Benefits (Loss Avoided)	Identify flood-prone areas		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County Engineer's Office, Army Corp of Engineers		
Participating Jurisdictions	Madeira City		
Implementation Plan	There has not been a comprehensive county-wide plan on mitigating storm and sewer lines with regards to the impacts of flooding since the 1960s and no one entity would oversee a planning project of this magnitude. Multiple jurisdictions and departments/agencies would be involved if funding were available.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, FMA	**Estimated Cost**	**Medium** ($10,000 to $100,000)

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues				
Action #	27-08	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Landslide, Severe Thunderstorm , Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion)				
Benefits (Loss Avoided)	Identify hazard-prone areas in the City				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County Planning Development, Hamilton County Engineer's Office				
Participating Jurisdictions	Madeira City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Community Development Grants, OCRA, BRIC		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Re-engineer Dawson Road				
Action #	27-09	**Year Initiated**	*2013*	**Prioritization Score**	*8/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Deleted	
Hazard(s) Mitigated	Flood (Flash), Mass Transportation Incident, Severe Thunderstorm, Severe Winter Storm				
Benefits (Loss Avoided)	Street flooding mitigation				
Lead Agency/ Organization	Community Leaders, County EMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Madeira				
Implementation Plan	There has not been a comprehensive county-wide plan on mitigating storm and sewer lines with regards to the impacts of flooding since the 1960s and no one entity would oversee a planning project of this magnitude. Multiple jurisdictions and departments/agencies would be involved if funding were available. This action can be deleted. It is no longer relevant.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	ODNR, ODOT, Local resources		**Estimated Cost**	TBD	

Mitigation Action	Develop and implement safety education for residents and business using natural gas				
Action #	27-10	**Year Initiated**	2013	**Prioritization Score**	32/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Deleted	
Hazard(s) Mitigated	Fire				
Benefits (Loss Avoided)	Life safety education				
Lead Agency/ Organization	Community Leaders, County EMHSA				
Supporting Agency/ Organization					

Mitigation Action	Develop and implement safety education for residents and business using natural gas		
Participating Jurisdictions	Arlington Heights, Cheviot, Indian Hills, Madeira. Milford, Reading, Springdale, Addyston, Cleves, Evendale		
Implementation Plan	This action can be deleted. It is no longer relevant.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	ODNR, FEMA	**Estimated Cost**	TBD

Mariemont – Village

Mitigation Strategies & Actions

Mitigation Action	Flood prevention of Whiskey Creek				
Action #	28-01	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	26/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D Goal 2, Objective A, B Goal 4, Objective D**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine)				
Benefits (Loss Avoided)	Property protection				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	ODNR				
Participating Jurisdictions	Mariemont Village				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	HMGP, FMA, Local resources		**Estimated Cost**	TBD	

Mitigation Action	Reinforce hillside slippage along Mariemont Ave.				
Action #	28-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	34/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, C Goal 2, Objective C**		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Flash), Landslide, Infrastructure Failure, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Loss of personal property				
Lead Agency/ Organization	Village Council				

Mitigation Action	Reinforce hillside slippage along Mariemont Ave.		
Supporting Agency/ Organization			
Participating Jurisdictions	Mariemont		
Implementation Plan	Mitigate area near Dogwood Park		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources, FEMA	**Estimated Cost**	**High** ($200,000)

Mitigation Action	Expand stormwater drainage under public roads to reduce flooding				
Action #	28-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*31/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective A*** ***Goal 3, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Control amount of water flow				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Mariemont Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Funds, HMGP		**Estimated Cost**	**High** ($225,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	28-04	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council, Mayor				
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches				
Participating Jurisdictions	Mariemont Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources, BRIC, HMGP		**Estimated Cost**	Medium (from $10,000 to $100,000)	

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	28-05	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated					
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Mayor				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system		
Participating Jurisdictions	Mariemont Village		
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Mariemont residents can sign up for. Completed 2023.		
Project Duration	Completed	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Equip existing facilities as safe rooms/shelters				
Action #	28-06	**Year Initiated**	2013	**Prioritization Score**	29/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase capability to safeguard and shelter individuals				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Mariemont Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, OCRA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	28-07	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Mariemont Village				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	USDOT, FHWA, ODOT, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Establish mutual aid response agreements within the county				
Action #	28-08	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase coordination and collaboration				
Lead Agency/ Organization	Village Council, Fire Department				
Supporting Agency/ Organization	Partnering Local Jurisdictions				

Mitigation Action	Establish mutual aid response agreements within the county		
Participating Jurisdictions	Mariemont Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (Less than $10,000)

Mitigation Action	Acquire training, equipment and resources to handle small hazardous materials spills				
Action #	28-09	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)	Enhanced capabilities to respond to HAZMAT incidents				
Lead Agency/ Organization	Fire Dept.				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Mariemont Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, EPA, SAFER		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Draft building ordinances to ensure safe building standards				
Action #	28-10	**Year Initiated**	2013	**Prioritization Score**	24/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Ongoing	

Mitigation Action	Draft building ordinances to ensure safe building standards		
Hazard(s) Mitigated	Earthquake, Severe Winter Storm, High Wind and Tornado, Fire, Infrastructure and Structural Failure		
Benefits (Loss Avoided)	Mitigate property damage		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Mariemont Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (less than $10,000)

Mitigation Action	Develop safety standards and emergency plans				
Action #	28-11	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Enhance planning and plan integration				
Lead Agency/ Organization	Mariemont Village Mayor				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Mariemont Village				
Implementation Plan					

Mitigation Action	Develop safety standards and emergency plans		
Project Duration	Ongoing	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Miami – Township

Mitigation Strategies & Actions

Mitigation Action	Add generators to Senior Center, Town Hall, and maintenance facility				
Action #	29-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*39/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective B, C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant, Wildfire				
Benefits (Loss Avoided)	Loss of use and loss of life				
Lead Agency/ Organization	Miami Township Trustees				
Supporting Agency/ Organization	Fire Department and Maintenance				
Participating Jurisdictions	Miami Township				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC		**Estimated Cost**	$50,000 - $100,000	

Mitigation Action	Install water lines in areas where public water is not currently provided				
Action #	29-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B, C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Wildfire, Fire				
Benefits (Loss Avoided)	Increase access to public water. Increase firefighting capabilities				
Lead Agency/ Organization	Township Trustees				

Mitigation Action	Install water lines in areas where public water is not currently provided		
Supporting Agency/ Organization	Greater Cincinnati Water Work, Cleves Water Works		
Participating Jurisdictions	Miami Township		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Montgomery – City

Mitigation Strategies & Actions

Mitigation Action	Community education program targeted and strategized to specific groups of residents for emergency preparedness based on their life situation (elderly, special needs, and group homes				
Action #	30-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*31/40*
Goal(s)/Objective(s) Addressed	***Goal 4, Objective A, D***		**Project Status**	New	
Hazard(s) Mitigated	Cyber Incident, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant				
Benefits (Loss Avoided)	Decline in emergency responses in disaster				
Lead Agency/ Organization	Communications and information services				
Supporting Agency/ Organization	Montgomery Administration, Police, Fire, and Public Works				
Participating Jurisdictions					
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	Local Resources, General Budget		**Estimated Cost**	Medium ($75,000)	

Mitigation Action	Institute public health awareness and prevention initiative to ensure the spread of illness and disease is mitigated/prevented				
Action #	30-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	25/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C** **Goal 3, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Civil Disorder/Riot, Public Health Emergency				
Benefits (Loss Avoided)	Public Health				
Lead Agency/ Organization	City Council				

Mitigation Action	Institute public health awareness and prevention initiative to ensure the spread of illness and disease is mitigated/prevented		
Supporting Agency/ Organization	Hamilton County Public Health, Bethesda North Hospital		
Participating Jurisdictions	Montgomery City		
Implementation Plan	Bethesda North Hospital is located in the city. People come to the facility for healthcare needs and may be contagious and/or potentially may spread illness/disease during a major public health crisis.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** ($35,000)

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	30-03	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Montgomery City				
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Montgomery residents can sign up for. Completed 2023.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Harden bridges				
Action #	30-04	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Severe Winter Storm, High Wind and Tornado, Infrastructure Failure				
Benefits (Loss Avoided)	Protect and strengthen infrastructure				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, ODOT				
Participating Jurisdictions	Montgomery City				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	PROTECT, HMGP, ODOT		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct a study to evaluate the structural integrity of Bethesda Hospital				
Action #	30-05	**Year Initiated**	*2013*	**Prioritization Score**	*24/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect critical infrastructure				
Lead Agency/ Organization	Bethesda Hospital, Montgomery City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Montgomery City				
Implementation Plan					

Mitigation Action	Conduct a study to evaluate the structural integrity of Bethesda Hospital		
Project Duration	TBD	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Obtain a GIS license to better map the community				
Action #	30-06	**Year Initiated**	2013	**Prioritization Score**	24/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Map hazards and risks				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Montgomery City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Low** (Less than $10,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	30-07	**Year Initiated**	*2013*	**Prioritization Score**	*2/84*

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***	**Project Status**	Ongoing
Hazard(s) Mitigated	Drought, Earthquake, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident		
Benefits (Loss Avoided)	Emergency power for vulnerable populations and emergency operations		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Hamilton County, Arlington Heights, Cheviot, Cincinnati, Forest Park, Indian Hills, Lincoln Heights, Madeira, Mariemont, Milford, Montgomery, North Bend, North College Hill, Norwood, Sharonville, Silverton, Wyoming, Cleves, Golf Manor, Terrace Park, Woodlawn		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	Local resources, FEMA	**Estimated Cost**	TBD

Mitigation Action	Acquire Gator Bags				
Action #	30-08	**Year Initiated**	2007	**Prioritization Score**	50
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Deleted	
Hazard(s) Mitigated	Drought				
Benefits (Loss Avoided)	Drought mitigation				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Montgomery				
Implementation Plan	This action can be deleted. It is no longer needed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	

Mitigation Action	Acquire Gator Bags		
Potential Funding Source	Local resources	**Estimated Cost**	TBD

Mt. Healthy – City

Mitigation Strategies & Actions

Mitigation Action	Purchase generators for extreme weather conditions and install them in municipality, schools, and churches.				
Action #	31-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*22/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 3, Objective B*** ***Goal 4, Objective B***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, High Wind and Tornado, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Citizen health and safety				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	School				
Participating Jurisdictions	Mt. Healthy City				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, HMGP		**Estimated Cost**	**Low** (Less than $10,000)	

Mitigation Action	Build/establish shelters with generators				
Action #	31-02	**Year Initiated**	2013	**Prioritization Score**	20/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Terrorism/Active Assailant, Infrastructure and Structure Failure				
Benefits (Loss Avoided)	Establish shelters for residents and ensure power to critical facilities				
Lead Agency/ Organization	City Council				

Mitigation Action	Build/establish shelters with generators		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Mt. Healthy City		
Implementation Plan			
Project Duration	Ongoing	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	31-03	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Mt. Healthy City				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	USDOT, FHWA, ODOT, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Require manufactured homes to have tie-downs				
Action #	31-04	**Year Initiated**	2013	**Prioritization Score**	19/84

Mitigation Action	Require manufactured homes to have tie-downs		
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B** **Goal 2, Objective B**	**Project Status**	Ongoing
Hazard(s) Mitigated	Severe Thunderstorm, High Wind and Tornado		
Benefits (Loss Avoided)	Life safety		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Mt Healthy City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Acquire training, equipment and resources to handle small hazardous materials spills				
Action #	31-05	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)	Enhanced capabilities to respond to HAZMAT incidents				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	City Council, Hamilton County EMHSA				
Participating Jurisdictions	Mt Healthy City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, SAFER		**Estimated Cost**	TBD	

Newtown – Village

Mitigation Strategies & Actions

Mitigation Action	Improvement to McCullough Run Retaining Wall to prevent flooding				
Action #	32-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*27/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 2, Objective A, C*** ***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion, Landslide				
Benefits (Loss Avoided)	Reduce Flooding				
Lead Agency/ Organization	Village of Newtown Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Village of Newtown				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	ODOT, HMGP, Local resources		**Estimated Cost**	TBD	

Mitigation Action	Inventory and identify equipment needed for disasters				
Action #	32-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	32/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Enhance planning and plan integration				

Mitigation Action	Inventory and identify equipment needed for disasters		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Newtown Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	FEMA, local funding	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification system				
Action #	32-03	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Newtown Village				
Implementation Plan	The County implemented Alert Hamilton County which Newtown residents can sign up for.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	32-04	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, E**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Newtown Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC, OCRA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Establish mutual aid response agreements within the county				
Action #	32-05	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				

Mitigation Action	Establish mutual aid response agreements within the county		
Benefits (Loss Avoided)	Increase coordination and collaboration		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Partnering Local Jurisdictions		
Participating Jurisdictions	Newtown Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (Less than $10,000)

North Bend – Village

Mitigation Strategies & Actions

Mitigation Action	Development of 14 acres Riverfront property in North Bend				
Action #	33-01	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	40/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D Goal 2, Objective A, B, C Goal 3, Objective A, B Goal 4, Objective A, B, C, D**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion)				
Benefits (Loss Avoided)	Avoid loss of property due to erosion and flooding				
Lead Agency/ Organization	Village of North Bend Council				
Supporting Agency/ Organization	Harrison-Symmes Memorial Foundation, Cindy Abrams, Bill Setiz				
Participating Jurisdictions	Village of North Bend (Hamilton County)				
Implementation Plan	The Village of North Bend has acquired approximately 14 acres of riverfront property which will be constructed in to a park for children and adults, a walking path, an event center; it will include an interpretive center for our rich history, a riverfront promenade, boat docks, beach volleyball, a restaurant and food trucks. This riverfront development area is designed to serve as both a local hub for everyday recreation, passive enjoyment and a wide variety of civic and cultural events. This location's shoreline features nearly one-quarter mile of waterfront access along the proposed promenade. The proposed William Henry Harrison Interpretive Center will serve as both a regional and national anchor for heritage tourism and afford stunning vistas across the North Bend of the Ohio To begin this Riverfront Development project, we need the Army Corps of Engineers to plan and install a flood wall. An estimate of the work plan is attached				
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, local foundations		**Estimated Cost**	High ($3,432,000)	

Mitigation Action	Create a Riverview Park off Harbor Road in North Bend, on newly purchased land from the Village of Cleves				
Action #	33-02	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*38/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C, D*** ***Goal 2, Objective C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective C***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Public Health Emergency (e.g., Pandemic), Urban Fires, Wildfires				
Benefits (Loss Avoided)	Greenspace				
Lead Agency/ Organization	Village of North Bend Council				
Supporting Agency/ Organization					
Participating Jurisdictions					
Implementation Plan	Paid the purchase land through a grant from Hamilton County of $400,0000 on almost 18 acres of riverfront property. They will need to hire a project manager and consult the proper port authority for guidance in building a retaining wall, we need grants and fundraising events to bring this Riverview Park to fruition. It will benefit the tri-state area.				
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	EPA, Local resources, fund-raising events		**Estimated Cost**	TBD	

Mitigation Action	Mitigate and address issue at the culvert on US 50 and St. Anne				
Action #	33-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	22/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Infrastructure Failure, Mass Transportation Incident				
Benefits (Loss Avoided)	Preserve life, mitigate casualties, and protect infrastructure				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	ODOT, Hamilton County Engineer's Office				

Mitigation Action	Mitigate and address issue at the culvert on US 50 and St. Anne		
Participating Jurisdictions	North Bend Village		
Implementation Plan	Address infrastructure and life safety concerns at this location		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	HMGP, BRIC	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Tree removal of dead trees from Ash virus				
Action #	33-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*20/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Deleted	
Hazard(s) Mitigated	Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Remove dead trees, to reduce secondary hazards (i.e. utility failure, fires)				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	North Bend Village				
Implementation Plan	This action can be deleted. It is no longer needed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Mitigate landslides on St. Anne to Shady Lane causing sidewalk deterioration and water ponding along US 50				
Action #	33-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	23/35

Mitigation Action	Mitigate landslides on St. Anne to Shady Lane causing sidewalk deterioration and water ponding along US 50		
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, C**	**Project Status**	Ongoing
Hazard(s) Mitigated	Landslide		
Benefits (Loss Avoided)	Protect infrastructure and improve safety on roadways		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	North Bend Village		
Implementation Plan	Mitigate landslides on St. Anne to Shady Lane causing sidewalk deterioration and water ponding along US 50, which is problematic to traffic going west on US 50.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Institute a buyout plan for flood prone structures. Identify repetitive loss properties impacted by flooding and landslides.				
Action #	33-06	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C*** ***Goal 2, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Landslide				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning Development				
Participating Jurisdictions	North Bend Village				
Implementation Plan	Identify and mitigate repetitive loss properties. Update flood control strategies. Form a planning team to address landslide and flood risk and identify several mitigation strategies/projects to mitigate both hazards.				
Project Duration	Ongoing		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	

Mitigation Action	Institute a buyout plan for flood prone structures. Identify repetitive loss properties impacted by flooding and landslides.		
Potential Funding Source	FMA, Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	33-07	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches				
Participating Jurisdictions	North Bend Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Implement industrial site buffering				
Action #	33-08	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	Ongoing	

Mitigation Action	Implement industrial site buffering		
Hazard(s) Mitigated	Hazardous Materials Incident		
Benefits (Loss Avoided)	Life safety, environmental		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization			
Participating Jurisdictions	North Bend Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	EPA, Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop ordinances to require improved building standards and floodplain ordinances				
Action #	33-09	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Riverine), Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	North Bend Village				
Implementation Plan	Meet with law/ordinance committee to form new ordinances, if necessary.				
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources		**Estimated Cost**	**Low** (less than $10,000)	

North College Hill – City

Mitigation Strategies & Actions

Mitigation Action	Development of community safe room				
Action #	34-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, E Goal 2, Objective B, C Goal 3, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Land Loss (e.g., Sinkhole/Subsidence/Erosion), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Protect lives during high wind events or extreme weather				
Lead Agency/ Organization	City Administration				
Supporting Agency/ Organization	Fire Department (FD)				
Participating Jurisdictions	North College Hill				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	State funds, BRIC, CDBG, local resources		**Estimated Cost**	$2,500,000	

Mitigation Action	Study and identify the necessity of safe room for residents. This could include location and size and design and installation				
Action #	34-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	22/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, E Goal 2, Objective B, C Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Severe Thunderstorm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Life Safety				
Lead Agency/ Organization	City Council				

Mitigation Action	Study and identify the necessity of safe room for residents. This could include location and size and design and installation		
Supporting Agency/ Organization	Hamilton County		
Participating Jurisdictions	North College Hill City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	Local resources	**Estimated Cost**	**High** ($250,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	34-03	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches				
Participating Jurisdictions	North College Hill City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	34-04	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	North College Hill City				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	USDOT, FHWA, ODOT, FEMA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills				
Action #	34-05	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Completed	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)	Enhanced capabilities to respond to HAZMAT incidents				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	City Council, Hamilton County EMHSA				
Participating Jurisdictions	North College Hill City				
Implementation Plan					

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Norwood – City

Mitigation Strategies & Actions

Mitigation Action	Upgrade infrastructure failure (e.g., to mains and distribution) for both water and stormwater to reduce localized flooding				
Action #	35-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*38/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C, D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Mass Transportation Incident (e.g., Train Derailment), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Flood reduction, property protection				
Lead Agency/ Organization	Norwood City Council				
Supporting Agency/ Organization	Hamilton County, City of Cincinnati Water				
Participating Jurisdictions	Norwood City				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	Local Funding, BRIC, HMGP, PROTECT		**Estimated Cost**	$30 - $40 million	

Mitigation Action	Develop a post-disaster recovery ordinance to ensure that repairs made to damaged structures follow a regulated, orderly process by requiring pre-repair permit(s) and a post-repair inspection				
Action #	35-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Develop a post-disaster recovery ordinance to ensure that repairs made to damaged structures follow a regulated, orderly process by requiring pre-repair permit(s) and a post-repair inspection		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure sustainable and effective recovery process		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Norwood City		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	35-03	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches				
Participating Jurisdictions	Norwood City				
Implementation Plan					

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local resources, BRIC	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Retrofit/harden fire stations				
Action #	35-04	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Riverine), Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Civil Disorder/Riot, Fire, Terrorism/Active Assailant, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect infrastructure				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Norwood City				
Implementation Plan					
Project Duration	Ongoing		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	HMGP, Community Development Block Grants		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	35-05	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and				

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system		
	Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Warning and notification		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center		
Participating Jurisdictions	Norwood City		
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Norwood residents can sign up for. Completed as of 2023.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	35-06	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Norwood City				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	USDOT, FHWA, ODOT, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct a study to re-engineer the railroad crossing				
Action #	35-07	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Better understand rail transportation issues in the community				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Railroads, Hamilton County Engineer's Office				
Participating Jurisdictions	Norwood City				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	ODOT, EPA, FHWA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills				
Action #	35-08	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)	Enhanced capabilities to respond to HAZMAT incidents				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Norwood City				
Implementation Plan					

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, SAFER	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Secure funding to reinstate former staffing levels for inspections and public education				
Action #	35-09	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective B***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Prevention and education				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Norwood City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	SAFER		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Reading – City

Mitigation Strategies & Actions

Mitigation Action	Build a new energy efficient City/Police/Fire building and generator to power the field house for emergency relocation of residents during emergencies				
Action #	36-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*30/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective B*** ***Goal 3, Objective A, B*** ***Goal 4, Objective B, D***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Public safety and security				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Reading				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	Local resources, BRIC, CDBG		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Institute a buyout plan for flood prone structures				
Action #	36-02	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 2, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Eliminate repetitive loss properties				
Lead Agency/ Organization	City Council				

Mitigation Action	Institute a buyout plan for flood prone structures		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Planning Development		
Participating Jurisdictions	Reading City		
Implementation Plan	Identify and mitigate repetitive loss properties.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	FEMA, Local Resources	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels				
Action #	36-03	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C***		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	Reading City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	FEMA, OCRA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	36-04	**Year Initiated**	2013	**Prioritization Score**	26/84

Mitigation Action	Acquire transfer switches/generators for all shelters		
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, E**	**Project Status**	Ongoing
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Reading City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources, BRIC, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues				
Action #	36-05	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Landslide, Severe Thunderstorm, Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion)				
Benefits (Loss Avoided)	Identify hazard-prone areas in the City				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County Planning & Development, Hamilton County Engineer's Office				
Participating Jurisdictions	Reading City				

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Community Development Grants, OCRA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Enhance snow removal equipment and supplies				
Action #	36-06	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Reading City				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	USDOT, FHWA, ODOT, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop and implement a water conservation plan				
Action #	36-07	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Drought, Extreme Heat Incident				

Mitigation Action	Develop and implement a water conservation plan		
Benefits (Loss Avoided)	Ensure water conservation efforts and long-term sustainability efforts are part of the strategic vision of the community.		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County Soil and Water Conservation District		
Participating Jurisdictions	Reading City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	ODNR, FMA, FHWA, USDA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas				
Action #	36-08	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Flood (Riverine), Flood (Flash), Severe Winter Storm, High Wind and Tornado, Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Public education and outreach				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Reading City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Update tree trimming ordinances				
Action #	36-09	**Year Initiated**	*2007*	**Prioritization Score**	*21*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	Completed	
Hazard(s) Mitigated	Severe Thunderstorm, Severe Winter, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Reduce power failure and damage to building stock				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Reading City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

St. Bernard – Village

Mitigation Strategies & Actions

Mitigation Action	Upgrade to an Emergency Operation Center				
Action #	37-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective B*** ***Goal 3, Objective A*** ***Goal 4, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Dam/Levee Failure, Earthquake, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Terrorism/Active Assailant, Urban Fires				
Benefits (Loss Avoided)	Mitigation/Prevention of loss of services				
Lead Agency/ Organization	Police, Fire				
Supporting Agency/ Organization	Village Administration				
Participating Jurisdictions	St. Bernard				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, CDBG		**Estimated Cost**	**Medium** from $10,000 to $100,000	

Mitigation Action	Install portable computers in emergency vehicles				
Action #	37-02	**Year Initiated**	2013	**Prioritization Score**	25/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Install portable computers in emergency vehicles		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Protection of lives through enhanced response capabilities		
Lead Agency/ Organization	St. Bernard Fire or Police Department		
Supporting Agency/ Organization			
Participating Jurisdictions	St. Bernard Village		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Public/private partnership, local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills				
Action #	37-03	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B***		**Project Status**	Completed	
Hazard(s) Mitigated	Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)	Enhanced capabilities to respond to HAZMAT incidents				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	St. Bernard Village				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Storm sewer upgrade				
Action #	37-04	**Year Initiated**	2007	**Prioritization Score**	
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A** **Goal 2, Objective A**		**Project Status**	Deleted	
Hazard(s) Mitigated	Flood (Flash), Landslide				
Benefits (Loss Avoided)	Flash Flood mitigation				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	St. Bernard Village				
Implementation Plan	This action can be deleted. It is no longer relevant.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	BRIC		**Estimated Cost**	TBD	

Mitigation Action	Acquire transfer switches/generators for all shelters				
Action #	37-05	**Year Initiated**	*2013*	**Prioritization Score**	*24/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Public safety and protection				
Lead Agency/ Organization	Community Leaders, County EMA				

Mitigation Action	Acquire transfer switches/generators for all shelters		
Supporting Agency/ Organization			
Participating Jurisdictions	Hamilton County, Arlington Heights, Harrison, Reading, St Bernard, Addyston, Amberley, Fairfax, Greenhills, Lockland, Newtown		
Implementation Plan	This action can be deleted. It is no longer relevant		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local resources, OCRA	**Estimated Cost**	TBD

Sharonville – City

Mitigation Strategies & Actions

Mitigation Action	Increase the ability and ease of mobile communication between agencies and municipalities.				
Action #	38-01	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	40/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D** **Goal 2, Objective B** **Goal 4, Objective B**		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Dam/Levee Failure, Earthquake, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Severe Thunderstorm, Terrorism/Active Assailant, Urban Fires, Wildfire				
Benefits (Loss Avoided)	Improve interoperable communications between responding agencies.				
Lead Agency/ Organization	State EMA				
Supporting Agency/ Organization	Hamilton County EMHSA, County Communications center				
Participating Jurisdictions	State of Ohio				
Implementation Plan	Large-scale incidents in Ohio tend to be localized, i.e., Tornados affect a municipality or county, vs. a hurricane affecting multiple counties or a large area of the state. Emergency services for large-scale events are generally called from multiple counties with varying radio communication systems. While state-wide radio channels exist and patching is available, doing so is cumbersome and time-consuming. Mitigation action: Creation and implementation of an easily accessible radio channel bank programmed on all emergency services radios in the state, including police, fire, and public works.				
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	State and local resources		**Estimated Cost**	**High** ($2M)	

Mitigation Action	Decrease emergency response times and increase public travel options over and/or around rail crossing				
Action #	38-02	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*33/40*

Mitigation Action	Decrease emergency response times and increase public travel options over and/or around rail crossing		
Goal(s)/Objective(s) Addressed	***Goal 2, Objective A*** ***Goal 3, Objective B***	**Project Status**	New
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), Urban Fires		
Benefits (Loss Avoided)	Life safety and emergency response capabilities		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Rail Industry		
Participating Jurisdictions	Sharonville		
Implementation Plan	Sharonville has 6 rail crossings city wide all on major roadways. These crossings frequently cause delay with emergency response as well has the potential to overwhelm major roadways with traffic in the event of evacuation order.		
Project Duration	**4 years**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	Rail Industry	**Estimated Cost**	TBD

Mitigation Action	Create main street open ditch stormwater. Remove underground culvert and create open ditch to improve capacity and flow of stormwater				
Action #	38-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	32/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, C** **Goal 2, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Address stormwater capacity issues				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Sharonville City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	

Mitigation Action	Create main street open ditch stormwater. Remove underground culvert and create open ditch to improve capacity and flow of stormwater		
Potential Funding Source	HMGP, BRIC	**Estimated Cost**	**High** ($2M)

Mitigation Action	Kemper Road basin flood control mitigation				
Action #	38-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*34/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C*** ***Goal 2, Objective A***		**Project Status**	Completed	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Flood damage to public and private property				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Mill Creek Watershed				
Participating Jurisdictions	Sharonville City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	State of Ohio, City of Sharonville		**Estimated Cost**	**High** ($350,000-$450,000)	

Mitigation Action	Conduct a study to re-engineer the railroad crossings				
Action #	38-05	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Better understand rail transportation issues in the community				
Lead Agency/ Organization	City Council				

Mitigation Action	Conduct a study to re-engineer the railroad crossings		
Supporting Agency/ Organization	Railroads, Hamilton County Engineer's Office		
Participating Jurisdictions	Sharonville City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	ODOT, EPA, FHWA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct a study to address “large scale gridlock/chaos” resulting from power outages				
Action #	38-06	**Year Initiated**	*2013*	**Prioritization Score**	*20/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Civil Disorder/Riot, Cyberattack, Terrorism/Active Assailant, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Understand the social, political, and economic impacts of a major utility failure incident.				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Sharonville City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	38-07	**Year Initiated**	2013	**Prioritization Score**	2/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Deleted	
Hazard(s) Mitigated	Drought, Earthquake, Flood (Riverine), Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident				
Benefits (Loss Avoided)					
Lead Agency/ Organization	City Council, County EMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County, Arlington Heights, Cheviot, Cincinnati, Forest Park, Indian Hills, Lincoln Heights, Madeira, Mariemont, Milford, Montgomery, North Bend, North College Hill, Norwood, Sharonville, Silverton, Wyoming, Cleves, Golf Manor, Terrace Park, Woodlawn				
Implementation Plan	Delete this action. It is addressed under other actions.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**		

Mitigation Action	Develop an enhanced county-wide emergency notification communication system				
Action #	38-08	**Year Initiated**	*2013*	**Prioritization Score**	*14/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Life safety and property protection				
Lead Agency/ Organization	City Council, County EMA				
Supporting Agency/ Organization					

Mitigation Action	Develop an enhanced county-wide emergency notification communication system		
Participating Jurisdictions	Hamilton County, Blue Ash, Cincinnati, Forest Park, Harrison, Lincoln Heights, Mariemont, Montgomery, Norwood, Sharonville, Addyston, Cleves, Golf Manor, Greenhills, Newtown, Terrace Park, Woodlawn		
Implementation Plan	This action can be deleted. It is already addressed as a countywide action.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local resources	**Estimated Cost**	TBD

Mitigation Action	Enhanced snow removal equipment and supplies				
Action #	38-09	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	**Deleted**	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	Sharonville City				
Supporting Agency/ Organization					
Participating Jurisdictions	Sharonville City				
Implementation Plan	This action can be deleted. It is no longer relevant.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	USDOT, FHWA, ODOT, Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Silverton – Village

Mitigation Strategies & Actions

Mitigation Action	Storm water management study for N. Berkeley and S. Berkeley streets and possible mitigation projects				
Action #	39-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Reduce localized flooding and property damage				
Lead Agency/ Organization	Silverton Public Works				
Supporting Agency/ Organization					
Participating Jurisdictions	Silverton				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	CDBG, State fund, BRIC, FMA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Request MSD to separate combined sewers on Montgomery Road, Stoll, and Diehl				
Action #	39-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	32/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Public Health Emergency				
Benefits (Loss Avoided)	Avoidance of illicit discharge				
Lead Agency/ Organization	Village Council, Metropolitan Sewer District				
Supporting Agency/ Organization					
Participating Jurisdictions	Silverton Village				

Mitigation Action	Request MSD to separate combined sewers on Montgomery Road, Stoll, and Diehl		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	Local Resources/Funds, Sewer Rates	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Identify and confirm shelter locations				
Action #	39-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*35/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Loss of life				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Sheriff, Deer Park Silverton Fire				
Participating Jurisdictions	Silverton Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (Less than $10,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	39-04	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Silverton Village				
Implementation Plan	Acquiring backup generator for new Town Hall at 6943 Montgomery Road to support HCSO District 4. Have 1 in place already for 6860 Plainfield but this will be a brewery starting in 2018.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Build/establish shelters with generators				
Action #	39-05	**Year Initiated**	*2013*	**Prioritization Score**	*20/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Fire, Hazardous Materials Incident, Terrorism/Active Assailant, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Establish shelters for residents and ensure power to critical facilities				
Lead Agency/ Organization	Village Council				

Mitigation Action	Build/establish shelters with generators		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Silverton Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, HMGP, CDBG	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct engineering impact studies on flood mitigation				
Action #	39-06	**Year Initiated**	2013	**Prioritization Score**	23/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Deleted	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Identify flood-prone areas				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Army Corp of Engineers				
Participating Jurisdictions	Silverton Village				
Implementation Plan	Configurations complete on Stewart Rd. and Culvert pipe installed. This action can be deleted. Other actions mitigated the need for this activity.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	FEMA, OCRA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Conduct a study to re-engineer the railroad crossing				
Action #	39-07	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*

Mitigation Action	Conduct a study to re-engineer the railroad crossing		
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***	**Project Status**	Deleted
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident		
Benefits (Loss Avoided)	Better understand rail transportation issues in the community		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Railroads, Hamilton County Engineer's Office		
Participating Jurisdictions	Silverton Village		
Implementation Plan	This action can be deleted. It is no longer relevant.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	ODOT, EPA, FHWA	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Improve storm water management				
Action #	39-08	**Year Initiated**	2007	**Prioritization Score**	22
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 2, Objective A**		**Project Status**	Deleted	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Protect infrastructure from flooding				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Silverton Village				
Implementation Plan	This action can be deleted. Other actions more specifically addressed the need.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Restructure the intersection of Plainfield and Montgomery Roads				
Action #	39-09	**Year Initiated**	*2007*	**Prioritization Score**	*22*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Deleted	
Hazard(s) Mitigated	Mass Transportation Incident				
Benefits (Loss Avoided)	Improve infrastructure				
Lead Agency/ Organization	Silverton Village				
Supporting Agency/ Organization					
Participating Jurisdictions	Silverton Village				
Implementation Plan	This action can be deleted. It is no longer relevant.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Springdale – City

Mitigation Strategies & Actions

Mitigation Action	Replaced the Emergency Generators for City-owned facilities used for Public Service, EOC, and as warming/cooling centers				
Action #	40-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*35/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash) , Flood (Riverine), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Emergency service continuity, life safety support to the public				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	City of Springdale				
Implementation Plan	Aging generators used at all five City facilities are beyond their useful life expectancy and need to be replaced. Current generators are undersized and will not power many essential work areas				
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BRIC, Ohio EMA, Hamilton County EMA, Clean Air Grants		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Flash Flooding on and around Tricon Road				
Action #	40-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	31/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective A, B, C** **Goal 3, Objective A, B** **Goal 4, Objective A, B, C, D**		**Project Status**	Ongoing	

Mitigation Action	Flash Flooding on and around Tricon Road		
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion)		
Benefits (Loss Avoided)	Property protection		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization			
Participating Jurisdictions	City of Springdale, MSD		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC, HMGP, Local resources	**Estimated Cost**	TBD

Mitigation Action	Improvements/upgrades to the City's Emergency Operations Center				
Action #	40-03	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*37/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C, D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective A, B, C, D***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Civil Disorder/Riot, Cyber Incident, Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant, Urban Fires				
Benefits (Loss Avoided)	Improved emergency coordination				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	City of Springdale				
Implementation Plan	The City seeks to procure necessary resources to improve functionality of it's EOC. IT, communications, and the ability to deploy equipment to field locations will be the priority.				

Mitigation Action	Improvements/upgrades to the City's Emergency Operations Center		
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	BRIC, EOCGP, ODH	**Estimated Cost**	High ($250, 000)

Mitigation Action	Conduct tabletop exercises to increase preparedness, work with the local EMA's Mass Care Coordinator, and develop community education opportunities to increase preparedness				
Action #	40-04	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*35/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, D*** ***Goal 2, Objective B*** ***Goal 4, Objective A, B, C, D***		**Project Status**	New	
Hazard(s) Mitigated	Cyber Incident, HazMat Incident (e.g., Chemical Spill), Infrastructure and Structural Failure (e.g., Bridge Collapse), Terrorism/Active Assailant, Urban Fires				
Benefits (Loss Avoided)	Emergency response preparedness				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization	City Administration, Police Department, Public Works, Recreation, Health				
Participating Jurisdictions	City of Springdale				
Implementation Plan					
Project Duration	1 year		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	To increase storm drainage capacity through installation of more regional retention to prevent flooding in the community and further downstream				
Action #	40-05	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	29/40
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, C, D** **Goal 2, Objective B** **Goal 4, Objective A**		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Flash), Flood (Riverine), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Severe Thunderstorm				

Mitigation Action	To increase storm drainage capacity through installation of more regional retention to prevent flooding in the community and further downstream		
Benefits (Loss Avoided)	Protection of property, reduction of flood insurance claims		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Mill Creek Conservancy		
Participating Jurisdictions	City of Springdale		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	OEPA, ODOT, FMA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Increase operational capabilities of the established emergency operations center including security upgrades (physical and cyber), IT Upgrades, and plan revisions/trainings				
Action #	40-06	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*35/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A, B*** ***Goal 4, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Civil Disorder/Riot, Cyber Incident, Dam/Levee Failure, Extreme Cold Incident, Extreme Heat Incident, HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (Pandemic), Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant				
Benefits (Loss Avoided)	Continuity of Operations				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	City of Springdale				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** from $10,000 to $100,000	

Mitigation Action	Coordinate with commercial property owners regarding flood-prone properties				
Action #	40-07	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Mitigate flooding and property damages				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Mill Creek Valley Conservancy District				
Participating Jurisdictions	Springdale City				
Implementation Plan	Springdale is working with a commercial property owner to donate a flood-prone property to the Mill Creek Valley Conservancy District				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Funds, Donations		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Mitigation of railroad overpass at SR 747				
Action #	40-08	**Year Initiated**	*2007*	**Prioritization Score**	
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Deleted	
Hazard(s) Mitigated	Severe Thunderstorm, Severe Winter Storm, Hazardous Materials Incident				
Benefits (Loss Avoided)	Infrastructure failure				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Springdale				

Mitigation Action	Mitigation of railroad overpass at SR 747		
Implementation Plan	This action can be deleted. It is no longer relevant.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Railroad owners/operators	**Estimated Cost**	TBD

Mitigation Action	Conduct a study to determine which public buildings have back-up power				
Action #	40-09	**Year Initiated**	2013	**Prioritization Score**	65/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Deleted	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Operational continuity				
Lead Agency/ Organization	City Council, County EMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Springdale				
Implementation Plan	This action can be deleted. It is no longer relevant.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local resources		**Estimated Cost**	TBD	

Mitigation Action	Acquire communication radios for emergency personnel				
Action #	40-10	**Year Initiated**	*2013*	**Prioritization Score**	*57/84*

Mitigation Action	Acquire communication radios for emergency personnel		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***	**Project Status**	Deleted
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Improve emergency communications capabilities		
Lead Agency/ Organization	City Council, County EMA		
Supporting Agency/ Organization			
Participating Jurisdictions	Springdale, Fairfax		
Implementation Plan	This action can be deleted. It is no longer needed.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	FEMA, NOAA	**Estimated Cost**	TBD

Mitigation Action	Conduct a study to re-engineer the railroad crossing.				
Action #	40-11	**Year Initiated**	2013	**Prioritization Score**	35/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Deleted	
Hazard(s) Mitigated	Severe Winter Storm, Hazardous Materials Incident				
Benefits (Loss Avoided)	Traffic flow and life safety improvements				
Lead Agency/ Organization	City Council, County EMA				
Supporting Agency/ Organization					
Participating Jurisdictions	Hamilton County, Cincinnati, Cleves, Norwood, Sharonville, Silverton, Springdale				
Implementation Plan	This action can be deleted. It is no longer needed.				

Mitigation Action	Conduct a study to re-engineer the railroad crossing.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	ODOT, EPA, FHWA	**Estimated Cost**	TBD

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas				
Action #	40-12	**Year Initiated**	*2013*	**Prioritization Score**	*32/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Riverine), Flood (Flash), High Wind and Tornado				
Benefits (Loss Avoided)	Life safety and injury prevention				
Lead Agency/ Organization	City Council, County EMHSA				
Supporting Agency/ Organization					
Participating Jurisdictions	Arlington Heights, Cheviot, Indian Hills, Madeira. Milford, Reading, Springdale, Addyston, Cleves, Evendale				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Build/establish shelters with generators for smaller jurisdictions and mobile home parks				
Action #	40-13	**Year Initiated**	2013	**Prioritization Score**	20/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective E**		**Project Status**	Deleted	
Hazard(s) Mitigated	Earthquake, Flood (Flash), Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Hazardous Materials Incident				
Benefits (Loss Avoided)	Protection of lives				

Mitigation Action	Build/establish shelters with generators for smaller jurisdictions and mobile home parks		
Lead Agency/ Organization	City Council, County EMA		
Supporting Agency/ Organization			
Participating Jurisdictions	Hamilton County, Cincinnati, Deer Park, Evendale, Harrison, Lincoln Heights, Loveland, Mt Healthy, Silverton, Springdale, Cleves		
Implementation Plan	This action can be deleted. It is covered by other actions.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	BRIC	**Estimated Cost**	TBD

Springfield – Township

Mitigation Strategies & Actions

Mitigation Action	Establish logistical staging areas (LSA) for equipment and supplies				
Action #	41-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B*** ***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Cyber Incident, Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), Flood (Riverine), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Mass Transportation Incident (e.g., Train Derailment), Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant, Urban Fires, Wildfires				
Benefits (Loss Avoided)	Operational coordination				
Lead Agency/ Organization	Township Trustees, Public Works				
Supporting Agency/ Organization	Springfield Township, Fire, Police				
Participating Jurisdictions	Springfield Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Develop long-term strategies to educate the community on the hazards affecting the community				
Action #	41-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion),				

Mitigation Action	Develop long-term strategies to educate the community on the hazards affecting the community		
	Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Public education		
Lead Agency/ Organization	Township Trustees		
Supporting Agency/ Organization	Hamilton County EMHSA		
Participating Jurisdictions	Springfield Township		
Implementation Plan	• Raise public awareness on the hazards affecting the twp. • Improve education and training for the public, twp. employees, and the administration. • CERT and other community group involvement. • Work with schools and churches to assist and develop EOP for their specific buildings in an effort to reduce injury and loss of life. This can include developing safe places for weather emergencies and to recommend safe places for new construction of homes. • Continue with weather spotters training, update and inform community through social media, warning sirens, weather radios and other media on alerting community for severe weather. • Encourage and recommend to residents to have trees touching or near electrical lines to have them trimmed or cut down. • Educate public township on the mass notification system		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Low** (Less than $10,000)

Mitigation Action	Mitigate flooding in certain areas of the township (Caldwell, Golfway, etc.)				
Action #	41-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*26/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Riverine)				
Benefits (Loss Avoided)	Protect/Mitigate property from flooding				
Lead Agency/ Organization	Township Trustees				

Mitigation Action	Mitigate flooding in certain areas of the township (Caldwell, Golfway, etc.)		
Supporting Agency/ Organization	Hamilton County Engineer's Office, Metropolitan Sewer District, Hamilton County Stormwater District		
Participating Jurisdictions	Springfield Township		
Implementation Plan	• Identify areas in the township that have the potential of flooding. • Work with township public works and Hamilton Co. Storm water and MSD • Prevent flooding from occurring along twp. roads and areas by providing regular maintenance and debris removal in areas that carry water including catch basins and sewers that township is responsible for. • Rd/miles Rd flooding due to Winton Woods Lake • Improve communications with Winton Woods Lake staff for Flood Control		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	Local Resources, FMA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Update EOP/EOC and Provide Training on the Plans				
Action #	41-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B** **Goal 3, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Improve planning and preparedness				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Springfield Township				
Implementation Plan	• Educate twp. employees and administrative personnel on hazards that affect the township. • This is an ongoing event. • Maintain and add if needed a list of MOU's with key organizations that may be used during emergency management operations.				

Mitigation Action	Update EOP/EOC and Provide Training on the Plans		
	• Develop trainings at least 1/year for key personnel and/or tabletop drill. • Set up EOC every 3 years and conduct twp. operations for 1-2 days to train and understand EOC operations. • Update/review plan 1/year. • Have EOP/EOC training for all personnel every 3 years. • POD training with Health Dept. • Ensure phone/data lines are functional in EOC. In addition have ample amount of hard wired phones for key EOC personnel. • Update Grove as far as computer/telephone lines in case it is opened during emergency activities.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Identify and Establish Shelters				
Action #	41-05	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*21/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective E***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Increase community sheltering capabilities				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization					
Participating Jurisdictions	Springfield Township				
Implementation Plan	• Work with Red Cross to establish and re-arrange shelters for displaced citizens following an incident. • Work to create Family Assistance Centers (FAC) and/or Family Reunification **Family Assistance Center (FAC): Functions as a secure area that serves to: 1) support the collection of antemortem information, 2) notify families of positive identification of victims, 3)				

Mitigation Action	Identify and Establish Shelters		
	share situational updates, and 4) provide behavioral health and emotional support to family members and friends **Reunification is the process of reuniting friends and family members who have been physically separated as the result of an incident. This process occurs before an FAC is activated by may also happen in a FAC.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Incorporate disaster preparedness information on the Springfield Township web page				
Action #	41-06	**Year Initiated**	2018	**STAPLEE Prioritization Score**	30/35
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A, B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Public education and preparedness				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Springfield Township				
Implementation Plan	Incorporate disaster preparedness information on the Springfield Township web page. Web page will be virtual and interactive.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (Less than $10,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	41-07	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*26/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Springfield Township				
Participating Jurisdictions	Springfield Township				
Implementation Plan	• Encourage Nursing facilities to have backup generators. • Encourage schools to have backup generators. • Add or update backup generators to all township facilities including the Grove. The Grove is used as part of EOP for various things and should have system in place.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	To identify the need to train and develop procedures for active shooter and civil distress. Work with city, schools, and police for drawings, communications, and equipment				
Action #	41-08	**Year Initiated**	2018	**STAPLEE Prioritization Score**	26/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B** **Goal 3, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Civil Disorder/Riot, Terrorism/Active Assailant (Violent Mass Casualty Incident)				
Benefits (Loss Avoided)	Life safety, destruction of property				
Lead Agency/ Organization	Law Enforcement				

Mitigation Action	To identify the need to train and develop procedures for active shooter and civil distress. Work with city, schools, and police for drawings, communications, and equipment		
Supporting Agency/ Organization	Hamilton County, Communication, Sheriff, Transportation		
Participating Jurisdictions	Springfield Township		
Implementation Plan	Review Active Shooter and Civil Disturbance plans once a year. Conduct training once a year.		
Project Duration	1 year	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** from $10,000 to $100,000

Mitigation Action	Promote Fire Safety and Conduct Fire Inspections				
Action #	41-09	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*27/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective C*** ***Goal 2, Objective A, B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Fire				
Benefits (Loss Avoided)	Life safety, destruction of property				
Lead Agency/ Organization	Fire Department				
Supporting Agency/ Organization					
Participating Jurisdictions	Springfield Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Sycamore – Township

Mitigation Strategies & Actions

Mitigation Action	To identify or create shelters for storms, tornados, HazMat exposure, HazMat release				
Action #	42-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*35/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective B*** ***Goal 3, Objective B*** ***Goal 4, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Dam/Levee Failure, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flood (Flash), HazMat Incident (e.g., Chemical Spill), High Wind and Tornado, Land Loss (e.g., Sinkhole/Subsidence/Erosion), Landslide, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Human life and the ability to go to safe areas				
Lead Agency/ Organization	Sycamore Township Trustees				
Supporting Agency/ Organization	Hamilton County, Sycamore Township				
Participating Jurisdictions	Sycamore Township				
Implementation Plan	Shelters will need to have heat, cooling, ventilation, emergency generators, and ADA compliant. They must also accommodate pets.				
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	BRIC, HMGP, CDBG		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Flash flood mitigation within highpoint subdivision to prevent property damage, improve safety response.				
Action #	42-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	29/40
Goal(s)/Objective(s) Addressed	**Goal 2, Objective A, B, C** **Goal 3, Objective A, B**		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Infrastructure and Structural Failure (e.g., Bridge Collapse), Land Loss (e.g., Sinkhole/Subsidence/Erosion)				
Benefits (Loss Avoided)	Property loss, potential injury, or bodily injury				

Mitigation Action	Flash flood mitigation within highpoint subdivision to prevent property damage, improve safety response.		
Lead Agency/ Organization	Sycamore Township Trustees		
Supporting Agency/ Organization	Hamilton County		
Participating Jurisdictions	Sycamore Township		
Implementation Plan	Prepare a study to determine a course of action and project cost/estimate. If cost effective possibly have phased improvements, prepare plans and implement improvements.		
Project Duration	**TBD**	**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)
Potential Funding Source	OPWC, FMA	**Estimated Cost**	**High** (more than $100,000)

Mitigation Action	Improve school safety for active shooter incidents. Reduce the ability of unauthorized persons to access schools and cause a severe act of violence. Install access control and monitoring capabilities in schools				
Action #	42-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective A, B** **Goal 3, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	Terrorism/Active Assailant (Violent Mass Casualty Incident)				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Schools				
Participating Jurisdictions	Sycamore Township				
Implementation Plan	Reduce the ability of unauthorized persons to access schools and cause a severe act of violence. Install access control and monitoring capabilities in schools				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	General fund		**Estimated Cost**	**High** (Active Shooter - $500,000)	

Mitigation Action	Expand first responder's preparedness, training, and planning of terrorist acts				
Action #	42-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*27/35*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Terrorism/Active Assailant (Violent Mass Casualty)				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Sycamore Township				
Participating Jurisdictions	Sycamore Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	General Fund		**Estimated Cost**	**Medium** ($10,000 - $100,000)	

Mitigation Action	Improved design, routing, and traffic control at problem areas on major roadways to reduce risk of accidents. Designate truck routes, in long-term planning, establish more connector road or construct roundabouts to reduce congestion on arterial roads.				
Action #	42-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	24/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, D**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Mass Transportation Incident				
Benefits (Loss Avoided)	Life safety				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Hamilton County Engineer's Office				
Participating Jurisdictions	Sycamore Township				
Implementation Plan					

Mitigation Action	Improved design, routing, and traffic control at problem areas on major roadways to reduce risk of accidents. Designate truck routes, in long-term planning, establish more connector road or construct roundabouts to reduce congestion on arterial roads.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	General Fund	**Estimated Cost**	**High** (Road Design - $8,000,000)

Symmes – Township

Mitigation Strategies & Actions

Mitigation Action	Current administration building's new replacement is being studied in lieu of retrofitting the old existing building				
Action #	43-01	**Year Initiated**	*2022*	**STAPLEE+E Prioritization Score**	*40/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective A, B, C*** ***Goal 3, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Civil Disorder/Riot, Cyber Incident, High Wind and Tornado,				
Benefits (Loss Avoided)	Improved public access (ADA, Hardened, etc.)				
Lead Agency/ Organization	Symmes Township Trustees				
Supporting Agency/ Organization	Symmes Planning, Zoning and Economic Development Department				
Participating Jurisdictions	Symmes Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	Local resources		**Estimated Cost**	TBD	

Mitigation Action	Procure generators and install them in critical infrastructure				
Action #	43-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	29/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Severe Thunderstorm, Severe Winter Storm, High Wind and Tornado, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Keep building open 24/7 in case of power loss. This will ensure police/fire remain operational.				
Lead Agency/ Organization	Township Trustees				

Mitigation Action	Procure generators and install them in critical infrastructure		
Supporting Agency/ Organization			
Participating Jurisdictions	Symmes Township		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Local Resources, BRIC	**Estimated Cost**	**Medium** ($10,000 to $100,000)

Terrace Park – Village

Mitigation Strategies & Actions

Mitigation Action	Install generators at the Police and Administration Building for continued Law Enforcement service				
Action #	44-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*35/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B*** ***Goal 4, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Extreme Cold Incident, Extreme Heat Incident, Public Health Emergency (e.g., Pandemic), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Continuity of operations				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Terrance Park				
Implementation Plan					
Project Duration	3 years		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	BRIC, Local resources		**Estimated Cost**	**Medium** from $10,000 to $100,000	

Mitigation Action	Conduct geotechnical analysis and environmental impact study				
Action #	44-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	23/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Flood (Riverine), Landslide, Land Loss (Sinkhole/Karst), Hazardous Materials Incident, Public Health Emergency, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Mitigate future losses/damages				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Anderson Township, Milford, Newtown, Indian Hills				
Participating Jurisdictions	Terrace Park Village				

Mitigation Action	Conduct geotechnical analysis and environmental impact study		
Implementation Plan	Conduct geotechnical analysis and environmental impact study (Pollution Monitoring)		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	44-03	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Terrace Park Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	44-04	**Year Initiated**	2013	**Prioritization Score**	21/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective D**		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Warning and notification				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center				
Participating Jurisdictions	Terrace Park Village				
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Terrace Park residents can sign up for. Completed 2023.				
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Establish mutual aid response agreements within the county				
Action #	44-05	**Year Initiated**	*2013*	**Prioritization Score**	*34/84*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective B***		**Project Status**	Deleted	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Improved response capabilities				
Lead Agency/ Organization	County EMA, Village Council				
Supporting Agency/ Organization					

Mitigation Action	Establish mutual aid response agreements within the county		
Participating Jurisdictions	Hamilton County, Mariemont, Addyston, Cleves, Evendale, Fairfax, Newtown, Terrace Park		
Implementation Plan	This action can be deleted. It is already addressed.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local resources	**Estimated Cost**	TBD

The Village of Indian Hill – City

Mitigation Strategies & Actions

Mitigation Action	Conduct a condition assessment and replace at-risk water tower				
Action #	45-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*36/40*
Goal(s)/Objective(s) Addressed	***Goal 3, Objective A, B***		**Project Status**	New	
Hazard(s) Mitigated	Drought, Infrastructure and Structural Failure (e.g., Bridge Collapse), Urban Fires				
Benefits (Loss Avoided)	Life safety and improved infrastructure				
Lead Agency/ Organization	Village of Indian Hill				
Supporting Agency/ Organization	Water District Members				
Participating Jurisdictions	Village of Indian Hill Water District				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	PROTECT, BRIC, HMGP		**Estimated Cost**	$6 – $8 Million	

Mitigation Action	Conduct a condition study and needs assessment of existing pier walls/retaining walls village-wide				
Action #	45-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	24/35
Goal(s)/Objective(s) Addressed	**Goal 2, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Riverine), Landslide				
Benefits (Loss Avoided)	Understand structural integrity of pier/retaining walls				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					

Mitigation Action	Conduct a condition study and needs assessment of existing pier walls/retaining walls village-wide		
Participating Jurisdictions	The Village of Indian Hill City		
Implementation Plan	Conduct a condition assessment and replace at-risk water tower.		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Replace at-risk bridges (Blome, Keller, SR126, etc.)				
Action #	45-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*19/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Completed	
Hazard(s) Mitigated	Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Life safety and improved infrastructure				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	ODOT, Hamilton County Engineer's Office				
Participating Jurisdictions	The Village of Indian Hill City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	45-04	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Completed	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities		
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization	Hamilton County EMHSA, Local facilities in need of generators/switches		
Participating Jurisdictions	The Village of Indian Hill City		
Implementation Plan			
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation option				
Action #	45-05	**Year Initiated**	*2013*	**Prioritization Score**	*19/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Protect infrastructure and building stock				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Metropolitan Sewer District, Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	The Village of Indian Hill City				
Implementation Plan	There has not been a comprehensive county-wide plan on mitigating storm and sewer lines with regards to the impacts of flooding since the 1960s and no one entity would oversee a				

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation option		
	planning project of this magnitude. Multiple jurisdictions and departments/agencies would be involved if funding were available.		
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources, ODNR, FEMA, FHWA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas				
Action #	45-06	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Earthquake, Extreme Cold Incident, Flood (Riverine), Flood (Flash), Severe Winter Storm, High Wind and Tornado, Fire, Infrastructure and Structural Failure				
Benefits (Loss Avoided)	Public education and outreach				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	The Village of Indian Hill City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Low** (less than $10,000)	

Whitewater – Township

Mitigation Strategies & Actions

Mitigation Action	Upgrade current server to a cloud base backup				
Action #	46-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*39/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C*** ***Goal 3, Objective B***		**Project Status**	New	
Hazard(s) Mitigated	Cyber Incident, Public Health Emergency (e.g., Pandemic)				
Benefits (Loss Avoided)	Enhance cybersecurity				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	Fiscal Office				
Participating Jurisdictions	Whitewater Township				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	General Fund		**Estimated Cost**	**Low** (less than $10,000)	

Mitigation Action	Stream gauge on Whitewater River				
Action #	46-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	31/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Riverine), Flood (Flash)				
Benefits (Loss Avoided)	Flood mitigation				
Lead Agency/ Organization	Township Trustees				
Supporting Agency/ Organization	USGS on National Weather Service				

Mitigation Action	Stream gauge on Whitewater River		
Participating Jurisdictions	Whitewater Township		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	Federal Funds	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Improvements to N275 to W74 (ramp)				
Action #	46-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*30/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident, Mass Transportation Incident				
Benefits (Loss Avoided)	Improve roadway. Increase safety and traffic flow.				
Lead Agency/ Organization	ODOT				
Supporting Agency/ Organization	Whitewater Township				
Participating Jurisdictions	Whitewater Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)	
Potential Funding Source	State and Federal Funds, PROTECT, Local resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct study of Hill St. catch basin in Miami town				
Action #	46-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	31/35

Mitigation Action	Conduct study of Hill St. catch basin in Miami town		
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**	**Project Status**	Deleted
Hazard(s) Mitigated	Flood (Flash)		
Benefits (Loss Avoided)	Conduct study to better understand cause of issues.		
Lead Agency/ Organization	Township Trustees, Hamilton County Engineer's Office		
Supporting Agency/ Organization			
Participating Jurisdictions	Whitewater Township		
Implementation Plan	This action can be deleted. It is not longer relevant.		
Project Duration	**Deleted**	**Estimated Completion Date**	**Deleted**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Lawrenceburg Rd. Improvement project around bridge				
Action #	46-05	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*30/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A*** ***Goal 2, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Riverine), Flood (Flash), Mass Transportation Incident				
Benefits (Loss Avoided)	Improve damaged infrastructure				
Lead Agency/ Organization	Township Trustees, Hamilton County Engineer's Office				
Supporting Agency/ Organization					
Participating Jurisdictions	Whitewater Township				
Implementation Plan	Lawrenceburg Rd improvement project around "lost" bridge				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Elevate Lawrenceburg Rd				
Action #	46-06	**Year Initiated**	2018	**STAPLEE Prioritization Score**	30/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Dam/Levee Failure, Flood (Riverine), Flood (Flash), Mass Transportation Incident				
Benefits (Loss Avoided)	Mitigate overland flooding on road				
Lead Agency/ Organization	Township Trustees, Hamilton County Engineer's Office				
Supporting Agency/ Organization					
Participating Jurisdictions	Whitewater Township				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Woodlawn – Village

Mitigation Strategies & Actions

Mitigation Action	Install necessary infrastructure to mitigate run off during all new street construction projects.				
Action #	47-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*39/40*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective B***		**Project Status**	New	
Hazard(s) Mitigated	Flood (Flash), Flood (Riverine), Land Loss (e.g., Sinkhole/Subsidence/Erosion), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm)				
Benefits (Loss Avoided)	Erosion and flood control				
Lead Agency/ Organization	Public Works				
Supporting Agency/ Organization	Village Manager's Office				
Participating Jurisdictions	Village of Woodlawn				
Implementation Plan	Installed 14 new catch basins on Timberland Drive				
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Infrastructure Bill, Road Tax		**Estimated Cost**	**High** (more than $100,000)	

Mitigation Action	Develop public education program specific to active shooter				
Action #	47-02	**Year Initiated**	2018	**STAPLEE Prioritization Score**	35/35
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Terrorism/Active Assailant (Violent Mass Casualty Incident)				
Benefits (Loss Avoided)	Protection of life				
Lead Agency/ Organization	Police Department				
Supporting Agency/ Organization					

Mitigation Action	Develop public education program specific to active shooter		
Participating Jurisdictions	Woodlawn Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Conduct flow study per NFIP requirement on Waverly Road				
Action #	47-03	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*35/35*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Mitigate flooding				
Lead Agency/ Organization	Village Administration				
Supporting Agency/ Organization					
Participating Jurisdictions	Woodlawn Village				
Implementation Plan					
Project Duration	TBD		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Implement cyber security and cyber infrastructure enhancements				
Action #	47-04	**Year Initiated**	2018	**STAPLEE Prioritization Score**	34/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C** **Goal 3, Objective B**		**Project Status**	Ongoing	

Mitigation Action	Implement cyber security and cyber infrastructure enhancements		
Hazard(s) Mitigated	Cyber Attack		
Benefits (Loss Avoided)	Increased awareness, increased cyber security		
Lead Agency/ Organization	Village Administration		
Supporting Agency/ Organization			
Participating Jurisdictions	Woodlawn Village		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Ongoing**
Potential Funding Source	Local Resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Implement prevention and mitigation measures to prepare for active shooter incidents				
Action #	47-05	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*23/35*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B*** ***Goal 3, Objective A, B***		**Project Status**	Ongoing	
Hazard(s) Mitigated	Terrorism/Active Assailant (Violent Mass Casualty Incident)				
Benefits (Loss Avoided)	Protection of life				
Lead Agency/ Organization	Law Enforcement				
Supporting Agency/ Organization	nursing homes, goodwill, schools, National Guard Armory, Kroger, churches, community assembly, municipal building				
Participating Jurisdictions	Woodlawn Village				
Implementation Plan	Implement prevention and mitigation measures to prepare for active shooter incidents at nursing homes, goodwill, schools, Guard Armory, Kroger, churches, Community Assembly, and municipal building.				
Project Duration	**Ongoing**		**Estimated Completion Date**	**Ongoing**	
Potential Funding Source	Local Resources		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	47-06	**Year Initiated**	2013	**Prioritization Score**	26/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A**		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Woodlawn Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system				
Action #	47-07	**Year Initiated**	*2013*	**Prioritization Score**	*21/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D***		**Project Status**	Completed	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm,				

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system		
	Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Warning and notification		
Lead Agency/ Organization	Village Council		
Supporting Agency/ Organization	Hamilton County EMHSA, Hamilton County Communications Center		
Participating Jurisdictions	Woodlawn Village		
Implementation Plan	Hamilton County EMHSA implemented Alert Hamilton County which Woodlawn residents can sign up for. Completed 2023.		
Project Duration	**Completed**	**Estimated Completion Date**	Completed
Potential Funding Source	Local resources	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Develop/Upgrade storm water drainage plans to guide surface water through proper channels				
Action #	47-08	**Year Initiated**	2013	**Prioritization Score**	19/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Mitigate flood damages and losses				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	Woodlawn Village				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	Short Term (to be completed in 1 to 3 years)	
Potential Funding Source	Local Resources, OCRA		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct engineering impact studies on flood mitigation				
Action #	47-09	**Year Initiated**	*2013*	**Prioritization Score**	*23/84*
Goal(s)/Objective(s) Addressed	***Goal 2, Objective C***		**Project Status**	Deleted	
Hazard(s) Mitigated	Flood (Riverine), Flood (Flash), Severe Thunderstorm				
Benefits (Loss Avoided)	Identify flood-prone areas				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, Army Corp of Engineers, Mill Creek Water Council				
Participating Jurisdictions	Woodlawn Village				
Implementation Plan	This action can be deleted. It is no longer relevant.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local resources, OCRA		**Estimated Cost**	**Medium** ($10,000 to $100,000)	

Mitigation Action	Enhanced snow removal equipment and supplies				
Action #	47-10	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	Severe Winter Storm				
Benefits (Loss Avoided)	Enhance capabilities of the jurisdiction to remove snow and ensure the life-safety and economic viability of the community during severe winter storm incidents.				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization	Hamilton County Engineer’s Office, Hamilton County Stormwater District, Hamilton County Soil & Water Conservation District and Hamilton County Planning Development				
Participating Jurisdictions	Woodlawn Village				
Implementation Plan	Enhance/purchase snow removal equipment and supplies.				

Mitigation Action	Enhanced snow removal equipment and supplies		
Project Duration	**Completed**	**Estimated Completion Date**	**Completed**
Potential Funding Source	Local resources, OCRA	**Estimated Cost**	**High** (greater than $100,000)

Mitigation Action	Conduct a study to address the carcinogenic properties of Flint Ink for first responder				
Action #	47-11	**Year Initiated**	*2013*	**Prioritization Score**	*22/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective B*** ***Goal 2, Objective C***		**Project Status**	Deleted	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Protection of lives and the environment				
Lead Agency/ Organization	Village Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Woodlawn Village				
Implementation Plan	This action can be deleted. It is no longer needed.				
Project Duration	**Deleted**		**Estimated Completion Date**	**Deleted**	
Potential Funding Source	Local resources, EPA, OCRA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Wyoming – City

Mitigation Strategies & Actions

Mitigation Action	Upgrade of public safety building to allow long term habitation of first responders and law enforcement in event of an extended emergency and upgrade of Emergency Operations Center to utilize current technology available.				
Action #	48-01	**Year Initiated**	*2023*	**STAPLEE+E Prioritization Score**	*35/40*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective D*** ***Goal 2, Objective B*** ***Goal 3, Objective A***		**Project Status**	New	
Hazard(s) Mitigated	Civil Disorder/Riot, Extreme Cold Incident, Extreme Heat Incident, Hazmat Incident (e.g., Chemical Spill), High Wind and Tornado, Infrastructure and Structural Failure (e.g., Bridge Collapse), Mass Transportation Incident (e.g., Train Derailment), Severe Thunderstorm, Severe Winter Storm (e.g., Ice Storm), Terrorism/Active Assailant, Urban Fires				
Benefits (Loss Avoided)	Continuity of Operations				
Lead Agency/ Organization	City of Wyoming				
Supporting Agency/ Organization					
Participating Jurisdictions	Wyoming				
Implementation Plan					
Project Duration	**TBD**		**Estimated Completion Date**	**Medium Term** (to be completed in 3 to 7 years)	
Potential Funding Source	BRIC, CDBG		**Estimated Cost**	High (3.2 Million)	

Mitigation Action	Security to monitor and identify security attacks and vulnerabilities				
Action #	48-02	**Year Initiated**	2023	**STAPLEE+E Prioritization Score**	35/40
Goal(s)/Objective(s) Addressed	**Goal 3, Objective A, B**		**Project Status**	New	
Hazard(s) Mitigated	Cyber Incident				
Benefits (Loss Avoided)	Protection against threats				
Lead Agency/ Organization	Wyoming				

Mitigation Action	Security to monitor and identify security attacks and vulnerabilities		
Supporting Agency/ Organization	Insurance, Hamilton County		
Participating Jurisdictions	Wyoming		
Implementation Plan			
Project Duration	**TBD**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	General Funds	**Estimated Cost**	**Medium** from $10,000 to $100,000

Mitigation Action	Upgrade traffic control devices – Wyoming carries large amount of traffic when 75 has obstructions – Current infrastructure struggles with heavy flow of traffic				
Action #	48-03	**Year Initiated**	2018	**STAPLEE Prioritization Score**	31/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective A, B, D Goal 2, Objective B**		**Project Status**	Completed	
Hazard(s) Mitigated	Civil Disorder/Riot, Infrastructure Failure, Mass Transportation Incident				
Benefits (Loss Avoided)	Improve traffic flow and management				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County Engineer's Office, ODOT				
Participating Jurisdictions	Wyoming City				
Implementation Plan					
Project Duration	**Completed**		**Estimated Completion Date**	**Completed**	
Potential Funding Source	ODOT, Local Resources		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	New generator for public safety facility				
Action #	48-04	**Year Initiated**	*2018*	**STAPLEE Prioritization Score**	*31/35*

Mitigation Action	New generator for public safety facility		
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A, B, C, D***	**Project Status**	Ongoing
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire		
Benefits (Loss Avoided)	Ensure power to public safety building		
Lead Agency/ Organization	City Council		
Supporting Agency/ Organization			
Participating Jurisdictions	Wyoming City		
Implementation Plan			
Project Duration	**Ongoing**	**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)
Potential Funding Source	BRIC	**Estimated Cost**	**Medium** (from $10,000 to $100,000)

Mitigation Action	Study the adequacy of the culvert under Fleming Road at Chatham Court and increase its size to eliminate flooding of properties at the upstream side				
Action #	48-05	**Year Initiated**	2018	**STAPLEE Prioritization Score**	27/35
Goal(s)/Objective(s) Addressed	**Goal 1, Objective B, C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Flood (Flash)				
Benefits (Loss Avoided)	Residential flooding				
Lead Agency/ Organization	Wyoming Public Works				
Supporting Agency/ Organization					
Participating Jurisdictions	Wyoming City				

Mitigation Action	Study the adequacy of the culvert under Fleming Road at Chatham Court and increase its size to eliminate flooding of properties at the upstream side		
Implementation Plan			
Project Duration	Ongoing	**Estimated Completion Date**	**Long Term** (to be completed in greater than 7 years)
Potential Funding Source	BRIC, HMGP, FMA	**Estimated Cost**	**High** (more than $100,000)

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities				
Action #	48-06	**Year Initiated**	*2013*	**Prioritization Score**	*26/84*
Goal(s)/Objective(s) Addressed	***Goal 1, Objective A***		**Project Status**	Ongoing	
Hazard(s) Mitigated	All Hazards (Civil Disorder/Riot, Cyber Incident (Cyber Attack), Dam/Levee Failure, Drought, Earthquake, Extreme Cold Incident, Extreme Heat Incident, Flash Flood, Riverine Flood, Hazardous Material Incident (includes Radiological), High Wind and Tornado, Infrastructure and Structural Failure (Utility Failure), Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion), Landslide, Mass Transportation Incident, Public Health Emergency, Severe Thunderstorm, Terrorism/Active Assailant (Violent Mass Casualty Incident), Urban Fires (Structural Fire), Wildfire				
Benefits (Loss Avoided)	Ensure power to critical facilities and key resources				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization	Hamilton County EMHSA				
Participating Jurisdictions	Wyoming City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	Local resources, BRIC		**Estimated Cost**	**High** (greater than $100,000)	

Mitigation Action	Conduct a study regarding industrial vulnerability				
Action #	48-07	**Year Initiated**	2013	**Prioritization Score**	22/84
Goal(s)/Objective(s) Addressed	**Goal 2, Objective C**		**Project Status**	Ongoing	
Hazard(s) Mitigated	Hazardous Materials Incident				
Benefits (Loss Avoided)	Better understand vulnerability of key industries in the community				
Lead Agency/ Organization	City Council				
Supporting Agency/ Organization					
Participating Jurisdictions	Wyoming City				
Implementation Plan					
Project Duration	**Ongoing**		**Estimated Completion Date**	**Short Term** (to be completed in 1 to 3 years)	
Potential Funding Source	FEMA, EPA, USDA, OCRA		**Estimated Cost**	**Medium** (from $10,000 to $100,000)	

Appendix B: Jurisdiction Profiles

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Hamilton County

Planning Team

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Witsken	Doug	LEPC Coordinator	Local Emergency Planning Committee	doug.witsken@hamilton-co.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (1,094 Responses)	Yes	No	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Joseph Behrend	Yes		3/1/2023, 1:00 pm – 4:00 pm
Ben Casteel	Yes		3/3/2023, 9:00 am – 12:00 pm
Andy Collins	Yes		3/3/2023, 9:00 am – 12:00 pm
Nick Crossley	Yes		3/2/2023, 9:00 am – 12:00 pm
Craig Davidson	Yes		3/3/2023, 1:00 pm – 4:00 pm
Jason Dickensheets	Yes		3/3/2023, 9:00 am – 12:00 pm
Becca Doris	Yes		3/1/2023, 9:00 am – 12:00 pm 3//1/2023, 1:00 pm – 4:00 pm 3/2/2023, 9:00 am – 12:00 pm 3/2/2023, 1:00 pm – 4:00 pm 3/3/2023, 9:00 am – 12:00 pm 3/3/2023, 1:00 pm – 4:00 pm
Todd Gadbury	Yes		3/1/2023, 1:00 pm – 4:00 pm
Christa Hyson	Yes		3/3/2023, 1:00 pm – 4:00 pm
Destiny Jardin	Yes		3/1/2023, 9:00 am – 12:00 pm 3/1/2023, 1:00 pm – 4:00 pm 3/2/2023, 9:00 am -12:00 pm 3/2/2023, 1:00 pm – 4:00 pm 3/3/2023, 9:00 am – 12:00 pm 3/3/2023, 1:00 pm – 4:00 pm
Brad Johnson	Yes		3/2/2023, 1:00 pm – 4:00 pm
David Liebman	Yes		3/1/2023, 1:00 pm – 4:00 pm
Olivia Maltry	Yes		3/1/2023, 9:00 am – 12:00 pm
Ryan McEwan	Yes		3/1/2023, 9:00 am – 12:00 pm 3/1/2023, 1:00 pm – 4:00 pm 3/2/2023, 9:00 am – 12:00 pm 3/2/2023, 1:00 pm – 4:00 pm 3/3/2023, 9:00 am – 12:00 pm 3/3/2023, 1:00 pm – 4:00 pm
Melissa Menerey	Yes		3/2/2023, 1:00pm – 4:00pm
Margaret Minzer	Yes		3/1/2023, 9:00 am – 12:00 pm
Morgan Peterson	Yes		3/2/2023, 9:00 am – 12:00 pm
Shawn Riley	Yes		3/2/2023, 9:00 am – 12:00 pm
John Sherrard	Yes		3/3/2023, 1:00 pm – 4:00 pm
Scott Snow	Yes		3/3/2023, 9:00 am – 12:00 pm

Mitigation Strategies & Actions

Mitigation Action	Improve areas that deal with urban flooding by updating storm infrastructure, maintaining or re-grading drainage ditches, or by property acquisition						
Action #	00-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	31/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Identify areas that may be most impacted by extreme weather events including urban flooding, erosion, landslide and urban heat island, using GIS mapping. Evaluate impacted communities, educate, and share results.						
Action #	00-02	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Protecting the Water Treatment facility power by burying the above ground electrical wires and install an automatic generator for back up power						
Action #	00-03	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Build strong relationships with County/Village/Town leadership to decrease misinformation and increase timely accurate medical information through multiple channels to build trust, prevent disease and reduce harm. Share actions save lives – SAFE services, condom use, seat belts, vaccination updates.						
Action #	00-04	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	32/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study of the critical ditching inventory						
Action #	00-05	**Year Initiated**	2026	**Current Status**	New	**STAPLEE+E Score**	32/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Increase cyber security protocols to reduce risk of intrusion and subsequent interruption of service						
Action #	00-06	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Install generators or generator hookups on all identified shelter sites in Hamilton County and skilled nursing facilities						
Action #	00-07	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Development of a Hamilton County Sustainability Plan						
Action #	00-08	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	29/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Integrate geotechnical requirements in communities that currently do not have this policy in place						
Action #	00-09	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Coordinate with realtors and prospective home buyers regarding landslide vulnerability						
Action #	00-10	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate landslide risk on Aspen Point Court (Monte Vista B)						
Action #	00-11	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Complete
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate stream bank erosion along Eight Mile Road						
Action #	00-12	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Engineer Office is evaluating the erosion on the road
2024		
2025		
2026		
2027		

Mitigation Action	Enhance interoperable radio communications systems throughout the County						
Action #	00-13	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Elevating and/or mitigate roadways in low-lying areas prone to overland flooding						
Action #	00-14	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Engineering compiling list of roads prone to flooding and cost benefit analysis.
2024		
2025		
2026		
2027		

Mitigation Action	Coordinate Conservation, Preservation, and Mitigation Actions with Community Development and Community Planning Divisions to Ensure Integration of Programs across all communities						
Action #	00-15	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Work with communities not currently in the NFIP to adopt the program						
Action #	00-16	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	All communities in the county are members except for two because they do not have flood zones in their town.
2024		
2025		
2026		
2027		

Mitigation Action	Provide information to property owners in flood-prone areas and the need for NFIP coverage						
Action #	00-17	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Enhance security at critical public safety technology infrastructure site						
Action #	00-18	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators for Hamilton County Public Health						
Action #	00-19	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop a county-wide program to purchase repetitive loss properties and to develop a program to monitor locations of buy-outs. Encourage local jurisdictions to institute a buy-out plan for flood prone structures						
Action #	00-20	**Year Initiated**	2007	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	HMGP Grant may acquire several homes on Blanchetta in Colerain in flood zone and demolished them.
2024		
2025		
2026		
2027		

Mitigation Action	Develop an enhanced county-wide emergency notification communication system						
Action #	00-21	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	28

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop a continuity of operations plan						
Action #	00-22	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads						
Action #	00-23	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Active Objective
2024		
2025		
2026		
2027		

Mitigation Action	Conduct flood-specific impact studies						
Action #	00-24	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	No local studies done to participant's knowledge
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues						
Action #	00-25	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Participants are not aware of any actions, nothing has started
2024		
2025		
2026		
2027		

Mitigation Action	Develop landslide mapping and incorporate into CAGIS						
Action #	00-26	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	No new updates to the participant's knowledge.
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options						
Action #	00-27	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	16

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	P&D and Public Health working on updating storm maps.
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	00-28	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Implementing GPS and real-time salt usage devices.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement a water conservation plan						
Action #	00-29	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to re-engineer the railroad crossings						
Action #	00-30	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Active Objective
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to improve/redesign problematic intersections and traffic signage						
Action #	00-31	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	18

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Improve stream maintenance after severe weather						
Action #	00-32	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Mitigation Action	Relocation of homes						
Action #	00-33	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate the Fernald Enrichment Plant						
Action #	00-34	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Develop a spontaneous volunteer management plan						
Action #	00-35	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	73

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	OKI is working with EMA
2024		
2025		
2026		
2027		

Mitigation Action	House a county-wide Hazmat response unit						
Action #	00-36	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	76

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Upgrade existing warning sirens and install warning sirens						
Action #	00-37	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Move electrical panels, mechanical, generators above base flood elevation (BFE) in facilities located in flood-prone areas						
Action #	00-38	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Participants are reviewing building permits and requiring equipment to be above the BFE.
2024		
2025		
2026		
2027		

Mitigation Action	Assist residents in the purchase of safe rooms						
Action #	00-39	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Trim trees to minimize the amount/duration of power outages						
Action #	00-40	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Assess and prioritize the burying of utilities (i.e. especially in areas where new development is occurring)						
Action #	00-41	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Promote acquisition of NOAA weather radios for all critical facilities						
Action #	00-42	**Year Initiated**	2007	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a commodity flow allocation study for rail and road transportation						
Action #	00-43	**Year Initiated**	2007	**Current Status**	Ongoing	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement public outreach and education programs on disaster awareness						
Action #	00-44	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Obtain additional smoke detectors for community distribution						
Action #	00-45	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Enhancement and expansion of green space						
Action #	00-46	**Year Initiated**	2007	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	OKI is working with Green Umbrella to update Green Space prioritization plan.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	00-47	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Distribute weather radios						
Action #	00-48	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Strengthen State of Ohio's Levee Safety Program						
Action #	00-49	**Year Initiated**	New	**Current Status**	New	**STAPLEE+E Score**	27/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Continue to work with Dam owners to increase the number of EAPs (Emergency Action Plans)						
Action #	00-50	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Work with communities not currently in NFIP						
Action #	00-51	**Year Initiated**		**Current Status**	Ongoing	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Provide info to properties in flood prone areas and need for NFIP coverage						
Action #	00-52	**Year Initiated**		**Current Status**	Ongoing	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Work with dam owners to develop Dam Emergency Action Plans						
Action #	00-53	**Year Initiated**		**Current Status**	Ongoing	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Maintain a controlled burn program for Great Parks prairies that include fire breaks at appropriate locations. This program is intended to protect and maintain the local ecosystem and promotes biodiversity, while reducing the fuel load in the case of unintended fires.						
Action #	00-54	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Great Parks will re-evaluate and update existing flood related programs and documents, once the documents are updated, they will be reviewed annually. These include dam emergency action plans and flood evacuation plans for high risk locations.						
Action #	00-55	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023		
2024		
2025		
2026		
2027		

Mitigation Action	Purchase, protect, and manage property that contains rivers, streams, lakes, ponds, and wetlands. Protection, restoration, and management of these areas reduce downstream flooding and provide cleaner waterways.						
Action #	00-56	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	As the largest land owner in Hamilton County with property adjacent to all four major rivers conserving natural and cultural heritage sites through conservation, preservation, restoration, and mitigation to safe guard public lands for present and future generations						
Action #	00-57	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Enhancement and management of Greenspace						
Action #	00-58	**Year Initiated**		**Current Status**	Ongoing	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Our agency manages the land.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches						
Action #	00-59	**Year Initiated**		**Current Status**	Ongoing	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Provide emergency power to public facilities.
2024		
2025		
2026		
2027		

Mitigation Action	Coordinate consumption, preservation, and mitigation with community development and planning divisions						
Action #	00-60	**Year Initiated**		**Current Status**	Ongoing	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		
2027		

Addyston – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Struckman	Dustin	Street Commissioner	Maintenance Department	dstruckman@addystonohio.org
Pennekamp	Eric			epennekamp@addystonohio.org
Dozier	Margaret	Village Clerk	Village Council	mdozier@addystonohio.org
Mear	Lisa	Mayor	Village Council	lmear@addystonohio.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (4 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Margaret Dozier	Yes		3/2/2023, 9:00am – 12:00pm
Lisa Mear	Yes		3/2/2023, 9:00am – 12:00pm

Community Profile & Description

Addyston Village was named after Matthew Addy, the proprietor of a local factory. Addyston Village is 0.91 square miles and had an estimated population of 790 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash): The culvert at Mistletoe Alley and US 50 has flooded twice. The culvert on US 50 near North Bend Corp sees more run off due to new buildings located above the area. The detention system (North) near 43 Main St. near Meadow's Banquet Hall is also vulnerable to flooding.

Hazardous Materials Incident: The Plastics Chemical Plant, located in the village, transports chemical products through the jurisdiction via major highway and rail. This poses a threat of hazardous materials release.

Mass Transportation Incident: Constant and repeated auto accidents at Dinning Ln and US 50 is a concern to the village. Accidents often result in the temporary closing of US 50.

Terrorism/Active Assailant: Terrorism, especially with the presence of a chemical plant, is a concern for the jurisdiction.

Addyston Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Public Health Emergency	3	12	15	29	56	**84**
Hazardous Material Incident	3	12	15	25	52	**78**
Infrastructure and Structural Failure	3	12	15	20	47	**72**
Flash Flood	3	9	9	26	44	**68**
Severe Winter Storm	3	7	10	26	43	**67**
Landslide	3	8	10	23	41	**64**
Severe Thunderstorm	3	8	10	19	37	**59**
Mass Transportation Incident	2	12	15	26	53	**56**
High Wind and Tornado	2	12	13	22	47	**51**
Extreme Cold Incident	2	6	8	26	40	**44**
Extreme Heat Incident	2	6	8	24	38	**42**
Riverine Flood	2	9	5	23	37	**41**
Land Loss	2	8	7	20	35	**39**
Urban Fire/ Structural Fire	2	4	5	22	31	**35**
Civil Disorder/Riot	1	3	5	21	29	**18**
Cyber Incident	0	3	11	18	32	**0**
Dam/Levee Failure	0	5	5	28	38	**0**
Drought	0	4	5	17	26	**0**
Earthquake	0	12	12	34	58	**0**
Terrorism/ Active Assailant	0	4	5	24	33	**0**
Wildfire	0	4	5	17	26	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Stabilization of their Infrastructure/Utilities						
Action #	01-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy-out plan for flood prone structures						
Action #	01-02	**Year Initiated**	2013	**Current Status**	Ongoing	**STAPLEE+E Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	01-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Equip existing facilities as safe rooms/shelters						
Action #	01-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/ generators for all shelters						
Action #	01-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas						
Action #	01-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Establish mutual aid response agreements within the county						
Action #	01-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills						
Action #	01-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Harden bridges						
Action #	01-09	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Implement industrial site buffering						
Action #	01-10	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Institute a Local Emergency Planning Committee						
Action #	01-11	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Existing council meeting will create permanent emergency discussion item.
2024		
2025		
2026		
2027		

Mitigation Action	Develop a plan for animal protection and subsistence						
Action #	01-12	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	No longer needed as residents are self-reliant with their pets.
2024		
2025		
2026		
2027		

Amberley – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Fritsch	Christopher	Zoning and Project Administrator	Administration	cfritsch@amberleyvillage.org
Lahrmer	Scot	Village Manager	Administration	slahrmer@amberleyvillage.org
Muething	Tom	Mayor	Village Council	tmuething@amberleyvillage.org
Schmidtg	Tim	Assistant Chief	Public Safety	schmidtgoessling@amberleyvillage.org
Gehring	Brandon	District Chief	Public Safety	bgehring@amberlyvillage.orf

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (9 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Tim Schmidtgoessling	Yes		3/3/2023, 9:00am – 12:00pm
Brandon Gehring	Yes		3/3/2023, 9:00am – 12:00pm

Community Profile & Description

Amberley Village was incorporated as a village on April 5, 1940. The town was named after a village in England. Amberley Village is 3.50 square miles and had an estimated population of 3,798 based upon the 2021 American Community Survey 5-Year population estimate .

Hazard Analysis

Flood (Flash): Secondary road flooding on Fair Oaks and on Willowbrook are issues for the village.

Hazardous Materials Incident: There is potential for chemical spills at Pepsi and JCC.

Terrorism/Active Assailant: The village has a high population of residents that could potentially be targeted for threats and violence.

Wildfire: Maintaining fire breaks in Meadowland, at Amberley Green and French Park, are important in the prevention of wildfires within the village.

Amberley Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Terrorism/ Active Assailant	3	11	15	23	49	**75**
Infrastructure and Structural Failure	3	8	17	23	48	**73**
Flash Flood	3	4	12	30	46	**71**
Severe Winter Storm	2	8	17	32	57	**60**
Severe Thunderstorm	2	8	17	25	50	**53**
High Wind and Tornado	2	8	14	27	49	**53**
Public Health Emergency	2	8	13	28	49	**53**
Extreme Cold Incident	2	4	12	31	47	**51**
Extreme Heat Incident	2	4	12	29	45	**49**
Urban Fire/ Structural Fire	2	8	11	26	45	**49**
Civil Disorder/Riot	2	8	11	24	43	**47**
Riverine Flood	2	4	12	27	43	**47**
Cyber Incident	2	11	9	21	41	**45**
Hazardous Material Incident	2	4	9	24	37	**41**
Wildfire	2	4	11	21	36	**40**
Earthquake	1	8	14	35	57	**33**
Mass Transportation Incident	1	0	6	23	29	**18**
Land Loss	1	0	6	21	27	**17**
Landslide	1	0	6	21	27	**17**
Dam/Levee Failure	0	0	0	24	24	**0**
Drought	0	0	2	18	20	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Upgrade current stormwater infrastructure to minimize flooding of residential homes and roadways.						
Action #	02-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop flooding mitigation actions, underground utilities, and upgrade building generators						
Action #	02-02	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Access the feasibility of acquiring a location on Willowbrook Ln to reduce roadway flooding.						
Action #	02-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Increase the size of storm pipe to prevent flooding of roadway on Fair Oaks Drive						
Action #	02-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	02-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to evaluate the engineering and potential use of the golf course pond levee						
Action #	02-06	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	66

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Anderson – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Donovan	Sarah	Planner I	Planning and Zoning	sdonovan@andersontownshipoh.gov
Drury	Paul	Director	Planning and Zoning	pdrury@andersontownshipoh.gov
Earhart	Vicky L.	Township Administrator	Administration	vearhart@andersontownshipoh.gov
Stone	Dee	Trustee	Township Trustee	dstone@anderstontownshipoh.gov
Martin	Rick	Chief	Fire & Rescue Department	Rmartin@andersontownshipoh.gov
Parker	Suzanne	Assistant Administrator for Human Resources	Administration	sparker@andersontownshipoh.gov
Luginbohl	Eric	Director	Public Works	eluginbohl@andersontownshipoh.gov
Sievers	Steve	Assistant Administrator for Operations	Administration	ssievers@anderstontownshipoh.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (66 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Vicky L. Earhart	Yes		3/1/2023, 1:00pm – 4:00pm
Dee Stone	Yes		3/1/2023, 1:00pm – 4:00pm
Rick Martin	Yes		3/1/2023, 1:00pm – 4:00pm
Eric Luginbohl	Yes		3/1/2023, 1:00pm – 4:00pm

Community Profile & Description

Anderson Township, located in the southeastern corner of Hamilton County, Ohio, is amongst the heaviest populated townships in the State of Ohio and has the fourth highest population total of Hamilton County's 49 political jurisdictions. Bounded by the Little Miami and Ohio Rivers, the community is dominated by rolling, wooded topography that creates scenic vistas of the beautiful natural environment in which the Township is located. Anderson Township has preserved these features, while witnessing significant population and commercial growth. Much of this activity has followed Beechmont Avenue (State Route 125), the community's major thoroughfare that connects much of southern Ohio to Columbia Parkway (U.S. 50) and downtown Cincinnati.

Hazard Analysis

Anderson Township has a number of greenspace properties, parks, and large private properties that could be subject to wildfires or potential arson. Also, due to the Township's location near the Ohio River, Kellogg Avenue floods periodically effecting the interstate and several major roads and businesses.

Additionally, Anderson Township could potentially be impacted by erosion and soil stability.

Anderson Township is host to several large events throughout the year, including Trustee Meetings, School Board Meetings, Board of Zoning Appeals and Zoning Commission, festivals, Anderson Days, Seasonal events, School events, theaters and high school stadiums. These make the Township susceptible to human-related hazards, such as civil disorder/riot and other violent mass casualty incidents.

Cyberattacks are also an emerging threat to many communities. The potential for email scams with employee names, website takeover, traffic signal failures or technology failures in general are a concern to the Township.

Anderson Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Winter Storm	3	7	15	29	51	**77**
Flash Flood	3	7	12	29	48	**73**
Extreme Cold Incident	3	4	14	28	46	**71**
Riverine Flood	3	8	12	26	46	**71**
Severe Thunderstorm	3	7	15	21	43	**67**
High Wind and Tornado	2	8	16	26	50	**53**
Public Health Emergency	2	9	13	27	49	**53**
Hazardous Material Incident	2	8	11	25	44	**48**
Extreme Heat Incident	2	4	12	25	41	**45**
Urban Fire/ Structural Fire	2	7	8	23	38	**42**
Cyber Incident	2	4	12	20	36	**40**
Drought	2	5	11	19	35	**39**
Infrastructure and Structural Failure	2	4	9	21	34	**38**
Landslide	2	8	6	20	34	**38**
Land Loss	2	5	6	22	33	**37**
Earthquake	1	8	13	32	53	**31**
Dam/Levee Failure	1	8	9	29	46	**27**
Terrorism/ Active Assailant	1	10	11	20	41	**25**
Mass Transportation Incident	1	7	6	24	37	**23**
Civil Disorder/Riot	1	7	7	21	35	**22**
Wildfire	1	4	6	18	28	**18**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33

Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Contact private properties to inform them of potential private infrastructure issues (ex. Bridges, drives, etc.) that could impact service delivery						
Action #	03-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Compile a list of backup generators throughout the Township. Procure generators, as needed						
Action #	03-02	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		

2026		
2027		

Mitigation Action	Identify a new site for solid/debris waste						
Action #	03-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Neg w FHSD Wilson/Ayer.
2024		
2025		
2026		
2027		

Mitigation Action	Open Space Acquisition						
Action #	03-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Old Fort Kellogg Legislation
2024		
2025		
2026		
2027		

Mitigation Action	Work with ODOT on digital message signs						
Action #	03-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	8 Mile and 32 CFI rough improve
2024		
2025		
2026		
2027		

Mitigation Action	Conservation of fragile areas						
Action #	03-06	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Mentioned in Comp Plan
2024		
2025		
2026		
2027		

Mitigation Action	Public Health PODS: Collaborate with the health department on point of dispensing operations						
Action #	03-07	**Year Initiated**	NA	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Bi-annual inspections of six (6) Township bridges						
Action #	03-08	**Year Initiated**	NA	**Current Status**	Ongoing	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Enhance firewalls and backup or replicator servers						
Action #	03-09	**Year Initiated**	NA	**Current Status**	Ongoing	**Prioritization Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Have done more comm.
2024		
2025		
2026		
2027		

Mitigation Action	Procure battery backups for streetlights, signals, and generators for existing building (The Anderson Center, newly redeveloped schools, and phone lines)						
Action #	03-10	**Year Initiated**	NA	**Current Status**	Complete	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	All done with streetlights
2024		
2025		
2026		
2027		

Mitigation Action	Conduct hazardous materials inspections						
Action #	03-11	**Year Initiated**	NA	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Establish mutual aid for civil unrest. These may include: Contracting with Hamilton County, continuous training, vehicles for crisis deployment, riot gear						
Action #	03-12	**Year Initiated**	NA	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Water depth markers						
Action #	03-13	**Year Initiated**	NA	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Green spaces: purchased properties along streams and increasing water previous surface						
Action #	03-14	**Year Initiated**	NA	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Mutual aid agreements with several agencies for road clean up						
Action #	03-15	**Year Initiated**	NA	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Code red and social media implementation						
Action #	03-16	**Year Initiated**	NA	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Using HC Alert now.
2024		
2025		
2026		
2027		

Mitigation Action	Improved storm water systems – regional, dam and levee studies						
Action #	03-17	**Year Initiated**		**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Township has snowplow drivers and own equipment						
Action #	03-18	**Year Initiated**	NA	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Establish emergency operations center						
Action #	03-19	**Year Initiated**	NA	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Have a backup EOC.
2024		
2025		
2026		
2027		

Mitigation Action	Comprehensive plan update						
Action #	03-20	**Year Initiated**	NA	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Arlington Heights – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Crase	Steven	Mayor	City Council	scrase@aohio.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (2 Responses)	Yes	Yes	Yes	

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jeff McLemore	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

Arlington Heights Village was incorporated as a village 1889. The settlement of Arlington Heights was originally known as "Arlington," because another municipality in Ohio already had the same name, so "Heights" was added. Arlington Heights Village is 0.27 square miles and had an estimated population of 986 based upon the 2021 American Community Survey 5-Year population estimate .

Hazard Analysis

Urban Fires: There are a number of locations vulnerable to fire hazards throughout the village.

Flood (Riverine): Mill Creek is susceptible to flooding.

Hazardous Materials Incident: A number of locations throughout the village pose an increased risk of a hazardous materials incident. Some of these locations include: Meier Dairy, Cindus Corporation (1930s fire), Cincinnati Industries (mostly flame retardant), and railroad (Norfolk Southern).

Mass Transportation Incident: Major transportation accidents are likely to occur on I-75.

Hazardous Materials Incident (Radiological Incident): Radioactive materials carried via rail pose a unique concern to the village.

Terrorism/Active Assailant: The Bluegrass Festival in Fall, which attracts hundreds of people, could be a potential target for terrorism. All residential areas are potentially vulnerable to violent mass casualty incidents.

Arlington Heights Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Extreme Cold Incident	2	3	16	28	47	**51**
Public Health Emergency	2	7	12	28	47	**51**
Flash Flood	2	4	11	28	43	**47**
Extreme Heat Incident	2	3	12	26	41	**45**
Riverine Flood	2	4	11	25	40	**44**
Severe Thunderstorm	2	4	14	22	40	**44**
Infrastructure and Structural Failure	2	4	14	19	37	**41**
High Wind and Tornado	1	4	14	26	44	**26**
Severe Winter Storm	1	3	11	29	43	**26**
Terrorism/ Active Assailant	1	11	8	22	41	**25**
Hazardous Material Incident	1	4	11	25	40	**24**
Mass Transportation Incident	1	3	6	26	35	**22**
Civil Disorder/Riot	1	6	6	22	34	**21**
Cyber Incident	1	6	9	18	33	**21**
Urban Fire/ Structural Fire	1	0	6	23	29	**18**
Land Loss	1	0	6	21	27	**17**
Landslide	1	0	6	19	25	**16**
Wildfire	1	0	6	18	24	**16**
Dam/Levee Failure	0	3	9	27	39	**0**
Drought	0	3	9	19	31	**0**
Earthquake	0	3	12	31	46	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Generator for Arlington Heights Municipal Building						
Action #	04-01	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	04-02	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Building no longer in operation.
2024		
2025		
2026		
2027		

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels						
Action #	04-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	No Action
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues						
Action #	04-04	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	No ongoing issues
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	04-05	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	New Updated Equipment
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas						
Action #	04-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	04-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Update tree trimming ordinances						
Action #	04-08	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	48

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Trees removed from right away.
2024		
2025		
2026		
2027		

Blue Ash – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Sirkin	Marc	Mayor	City Council	msirkin@blueash.com
Theders	Chris	Fire Chief	Fire Department	ctheders@blueash.com
Swartwout	Jason	Police Lieutenant	Police Department	jwartwout@blueash.com
Waltz	David	City Manager	Administration	administration@blueash.com

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (13 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Pete Ballauer	Yes		3/3/2023, 9:00 am – 12:00 pm
Roger Pohlman	Yes		3/3/2023, 9:00 am – 12:00 pm
Jason Swartwout	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

Blue Ash City is named for the blue ash logs that were used to build the first Baptist Church in the area. The area that is now Blue Ash was settled circa 1791. The City is 7.59 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 13,229.

Hazard Analysis

Cyber Incident: Numerous corporations and government agencies occupy space in Blue Ash. Each are subject to cyber-attack.

Dam/Levee Failure: One lane (Kenridge) is hard backed by an earthen dam that is topped by Kenridge Drive. This is on the eastern border and a dam failure would impact the City of Montgomery, particularly I-71.

Hazardous Materials Incident: See transportation incident.

Mass Transportation Incident: Blue Ash is bordered by SR-126, IR-71, and IR-275. A major crash on any of these routes could affect traffic in the region. Also, a wide variety of HAZMAT access these roadways.

Terrorism/Active Assailant: The city runs several large special events each summer. “Red, White, and Blue Ash Celebration” attracts over 100,000 people on the 4th of July each year.

Blue Ash Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	8	12	26	46	**71**
Public Health Emergency	2	8	17	29	54	**57**
Severe Thunderstorm	3	4	11	21	36	**57**
Urban Fire/ Structural Fire	3	4	6	24	34	**54**
Extreme Cold Incident	2	0	16	28	44	**48**
Hazardous Material Incident	2	8	12	24	44	**48**
Extreme Heat Incident	2	0	16	26	42	**46**
Severe Winter Storm	2	0	11	29	40	**44**
Infrastructure and Structural Failure	2	8	6	19	33	**37**
Drought	2	0	11	19	30	**34**
Cyber Incident	2	0	8	19	27	**31**
Terrorism/ Active Assailant	1	4	7	21	32	**20**
Civil Disorder/Riot	1	0	7	22	29	**18**
Dam/Levee Failure	0	0	6	28	34	**0**
Earthquake	0	8	16	33	57	**0**
Flash Flood	0	4	6	27	37	**0**
Riverine Flood	0	4	6	24	34	**0**
Land Loss	0	4	6	21	31	**0**
Landslide	0	4	6	19	29	**0**
Mass Transportation Incident	0	0	7	25	32	**0**
Wildfire	0	0	6	20	26	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Renovate the Tower at Summit Park; upper observation deck; added safety for personal injury prevention						
Action #	05-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	The City will educate the public on the various risks that could impact the City at special events (i.e. Red, White, and Blue Ash; Summit Fest; Friday night concerts). Assistance will be provided by Hamilton County EMHSA						
Action #	05-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Annual event with minor changes each year.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	05-03	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	We participate and encourage residents.
2024		
2025		
2026		
2027		

Mitigation Action	Improve stream maintenance after severe weather						
Action #	05-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continuous program depending on the weather.
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads						
Action #	05-05	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Ongoing construction with additional roundabouts being built.
2024		
2025		
2026		
2027		

Cheviot – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Braun	Tom	Safety Service Director	Administration	tbraun@cheviot.org
Craig	Brent	Superintendent of Public Works	Public Works	bcraig@cheviot.org
Gannon	Kevin	Fire Captain	Fire Department	kgannon@cheviot.org
Keller	Samuel D.	Mayor	Administration	skeller@cheviot.org
Klein	Robert	Fire Chief	Fire Department	bklein@cheviot.org
Miller	David	Fire Captain	Fire Department	dmiller@cheviot.org
Patton	Jeff	Police Chief	Police Department	jpatton@cheviot.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (12 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Tom Braun	Yes		3/2/23, 9:00am – 12:00pm
Brent Craig	Yes		3/2/23, 9:00am – 12:00pm
Robert Klein	Yes		3/2/23, 9:00am – 12:00pm

Community Profile & Description

The City of Cheviot was founded by a Scottish immigrant named John Craig who named the City for the Cheviot Hills in southern Scotland in 1818. The City is 1.17 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 8,683.

Hazard Analysis

Civil Disorder/Riot and Terrorism/Active Assailant: Cheviot City still hosts a number of festivals. These include the following: 1) Brews on the Block Street Festival, which takes place the last weekend of September and was previously known as the West Side Street Festival (approx. 30,000 people); and 2) the Harvest Festival.

Other Hazard Considerations: The city also has two nursing homes, which may be more vulnerable to the hazards that impact the city. There is a nursing home on North Bend and another on Bridgetown. The city also has four banks, which are considered an important resource to the city and, like all banks, is susceptible to criminal acts.

Cheviot Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	2	11	17	27	55	**58**
Severe Winter Storm	2	4	16	29	49	**53**
Severe Thunderstorm	2	4	16	22	42	**46**
Urban Fire/ Structural Fire	2	3	6	25	34	**38**
Infrastructure and Structural Failure	2	4	6	20	30	**34**
Earthquake	1	4	14	33	51	**30**
Extreme Cold Incident	1	4	9	28	41	**25**
Extreme Heat Incident	1	4	9	26	39	**24**
Public Health Emergency	1	4	7	27	38	**23**
Hazardous Material Incident	1	3	6	23	32	**20**
Civil Disorder/Riot	1	3	6	22	31	**19**
Cyber Incident	1	6	6	18	30	**19**
Terrorism/ Active Assailant	1	3	6	20	29	**18**
Mass Transportation Incident	1	0	2	23	25	**16**
Drought	1	0	0	15	15	**10**
Dam/Levee Failure	0	0	0	24	24	**0**
Flash Flood	0	0	0	23	23	**0**
Riverine Flood	0	0	0	20	20	**0**
Land Loss	0	0	0	18	18	**0**
Landslide	0	0	0	16	16	**0**
Wildfire	0	0	0	15	15	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Bury powerlines for public safety and mitigating wind, water, and accidents from power outages						
Action #	06-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	06-02	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and business using natural gas						
Action #	06-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	06-04	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	30

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to improve internal communication structure						
Action #	06-05	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	33

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Cincinnati – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Alder	Karen	Finance Director	Finance	Karen.alder@cincinnati-oh.gov
Bardua	Bridget	Captain	Police Dept	bridget.bardua@cincinnati-oh.gov
Barron	Jason	Director	Park Board	Jason.Barron@cincinnatioh.gov
Benjamin	James	Lieutenant	Cincinnati Fire Dept	james.benjamin@cincinati-oh.gov
Breitfelder	Steve	Interim Fire Chief	Fire Department	steven.breitfelder@cincinnati-oh.gov
Carter	Markiea	Director	Department of Economic Inclusion	markiea.carter@cincinnati-oh.gov
Chundur	Raj	CAGIS Administrator	Enterprise Technology Solutions	raj.chundur@cincinnati-oh.gov
Dahlberg	Art	Director of Buildings & Inspections	Buildings & Inspections	art.dahlberg@cincinnati-oh.gov
Doering	Brian	Firefighter/Paramedic	Fire Department	brian.doering@cincinnati-oh.gov
Flagler	Matthew	Assistant Fire Chief	Fire Department	matthew.flagler@cincinnati-oh.gov
KeoughJurs	Katherine	Supervising City Planner	City Planning	katherine.keough oh.gov - jurs@cincinnati
Koopman	Joel	Deputy Director	Public Services	joel.koopman@cincinnati-oh.gov
Long	Sheryl	City Manager	City Manager's Office	citymanager@cincinnati-oh.gov
Miller	Howard	Environmental Safety Specialist	Office of Environment and Sustainability	howard.miller@cincinnati-oh.gov
Moore	Michael	Director	Department of Transportation and Engineering	michael.moore@cincinnati-oh.gov
Neiheisel	Leo	District Chief	Fire Department	leo.neiheisel@cincinnati-oh.gov
Peters	Jonathan	Assistant Superintendent	Greater Cincinnati Water Works	jonathan.peters@gcww.cincinnatioh.gov
Pieper	Jeff	Chief Engineer	Greater Cincinnati Water Works	jeff.pieper@gcww.cincinnatioh.gov
Saylor	Eric	Stormwater Management Engineer	Stormwater Management Utility	eric.saylor@cincinnati-oh.gov
Stanforth	James	Information Technology Assistant Manager	Cincinnati Area Geographic Information System	james.stanforth@cincinnatioh.gov
Sutter	Morgan	Assistant to the City Manager	City Manager's Office	morgan.sutter@cincinnati-oh.gov
Tallent	Virginia	Assistant City Manager	City Manager's Office	virginia.tallent@cincinnati oh.gov
Vedra	Bill	Director	Cincinnati ECC	bill.vedra@cincinnati-oh.gov
Wilkerson	Jerry	Director	Public Services	jerry.wilkerson@cincinnatioh.gov

Wuest	Rahn	Supervisor	Greater Cincinnati Water Works	rahn.wuest@cincinnati-oh.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (258 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
James Benjamin	Yes		3/2/2023, 1:00 pm – 4:00 pm
Pam Bowers	Yes		3/2/23, 1:00pm – 4:00pm
Matt Flagler	Yes		3/2/23, 1:00pm – 4:00pm
Leo Neiheisel	Yes		3/2/23, 1:00pm – 4:00pm
Jonathan Peters	Yes		3/2/2023, 9:00 ma – 12:00 pm
Greg Roa	Yes		3/2/2023, 1:00 pm – 4:00 pm
Eric Saylor	Yes		3/2/23, 1:00pm – 4:00pm

Community Profile & Description

The City of Cincinnati is the county seat of Hamilton County. The City was settled in 1788 on the north bank of the Ohio River opposite the mouth of the Licking River. The original surveyor, John Filson, named it "Losantiville,", but in 1790, Arthur St. Clair, the governor of the Northwest Territory, change the name to "Cincinnati" in honor of the Society of the Cincinnati. It is the third largest city in Ohio. The City is 79.54 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 308,664.

Hazard Analysis

Civil Disorder/Riot: Most human-related hazards could impact Cincinnati. Low income and sensitive populations are especially vulnerable to public health emergencies. The local highways are vulnerable to major transportation incidents. The central business district is vulnerable to civil disobedience and terrorism (e.g., courthouse and city hall). The dense urban nature of the city makes it vulnerable to violent mass casualty impacts.

Cyber Incident: The city has bridges and levees that are vulnerable that could impact transportation and flooding. The city has industrial areas that are vulnerable to hazmat incidents that could impact nearby populations. City businesses are vulnerable to cyber-attacks that could impact local communication and commerce.

Dam/Levee Failure: Most technical related hazards could impact Cincinnati. The city has bridges and levees that are vulnerable that could impact transportation and flooding. The city has industrial areas that are vulnerable to hazmat incidents that could impact nearby populations. City businesses are vulnerable to cyber-attacks that could impact local communication and commerce.

Extreme Cold Incident: Cincinnati is a heat island. Periods of extreme heat do occur. Periods of extreme cold also occur. Primary impact is to human health in low income and sensitive populations.

Extreme Heat Incident: Cincinnati is a heat island. Periods of extreme heat do occur. Periods of extreme cold also occur. Primary impact is to human health in low income and sensitive populations.

Urban Fire: Cincinnati has fully developed dense urban development. Vulnerabilities include densely occupied residential and commercial buildings and various industrial facilities such as chemical manufacturers and bulk petroleum storage.

Flood (Flash): Riverine flooding affects low lying Cincinnati neighborhoods along the Ohio River. Flash flooding affects development in and along historic stream channels and in low lying areas without natural outlets. Flooding causes sewer backups and property damage.

Hazardous Materials Incident: Most technical related hazards could impact Cincinnati. The city has bridges and levees that are vulnerable that could impact transportation and flooding. The city has industrial areas that are vulnerable to hazmat incidents that could impact nearby populations. City businesses are vulnerable to cyber-attacks that could impact local communication and commerce.

High Wind and Tornado: Severe storms impact to Cincinnati include high wind, severe thunderstorm, sever snow fall, and hail. Utilities and property is vulnerable to severe storm related impacts that can be wide spread due to the urban density of the city.

Infrastructure and Structural Failure: Most technical related hazards could impact Cincinnati. The city has bridges and levees that are vulnerable that could impact transportation and flooding. The city has industrial areas that are vulnerable to hazmat incidents that could impact nearby populations. City businesses are vulnerable to cyber-attacks that could impact local communication and commerce.

Landslide: Cincinnati has local landslide prone areas that can impact transportation, utility, and housing infrastructure.

Mass Transportation Incident: Most human related hazards could impact Cincinnati. Low income and sensitive populations are especially vulnerable to public health emergencies. The local highways are vulnerable to major transportation incidents. The central business district is vulnerable to civil disobedience and terrorism (e.g., courthouse and city hall). The dense urban nature of the city makes it vulnerable to violent mass casualty impacts.

Public Health Emergency: Most human related hazards could impact Cincinnati. Low income and sensitive populations are especially vulnerable to public health emergencies. The local highways are vulnerable to major transportation incidents. The central business district is vulnerable to civil disobedience and terrorism (e.g., courthouse and city hall). The dense urban nature of the city makes it vulnerable to violent mass casualty impacts.

Hazardous Material Incident (Radiological Incident): Most technical related hazards could impact Cincinnati. The city has bridges and levees that are vulnerable that could impact transportation and flooding. The city has industrial areas that are vulnerable to hazmat incidents that could impact nearby populations. City businesses are vulnerable to cyber-attacks that could impact local communication and commerce.

Riverine Flood: Riverine flooding affects low lying Cincinnati neighborhoods along the Ohio River. Flash flooding affects development in and along historic stream channels and in low lying areas without natural outlets. Flooding causes sewer backups and property damage.

Severe Thunderstorm: Severe storms impact to Cincinnati include high wind, severe thunderstorm, sever snow fall, and hail. Utilities and property is vulnerable to severe storm related impacts that can be wide spread due to the urban density of the city.

Severe Winter Storm: Cincinnati is impacted by severe winter storms. Transportation and property are vulnerable to severe ice and snowfall. Low income and sensitive populations are vulnerable to severe winter weather.

Infrastructure and Structural Failure: Most technical related hazards could impact Cincinnati. The city has bridges and levees that are vulnerable that could impact transportation and flooding. The city has industrial areas that are vulnerable to hazmat incidents that could impact nearby populations. City businesses are vulnerable to cyber-attacks that could impact local communication and commerce. Severe storms impact to Cincinnati include high wind, severe thunderstorm, sever snow fall, and hail. Utilities and property is vulnerable to severe storm related impacts that can be wide spread due to the urban density of the city.

Terrorism/Active Assailant: Most human related hazards could impact Cincinnati. Low income and sensitive populations are especially vulnerable to public health emergencies. The local highways are vulnerable to major transportation incidents. The central business district is vulnerable to civil disobedience and terrorism (e.g., courthouse and city hall). The dense urban nature of the city makes it vulnerable to violent mass casualty impacts. Most human related hazards could impact Cincinnati. Low income and sensitive populations are especially vulnerable to public health emergencies. The local highways are vulnerable to mass transportation incidents. The central business district is vulnerable to civil disobedience and terrorism (e.g., courthouse and city hall). The dense urban nature of the city makes it vulnerable to violent mass casualty impacts.

Cincinnati Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Hazardous Material Incident	3	11	12	25	48	**73**
Cyber Incident	3	11	14	20	45	**69**
Riverine Flood	3	8	9	27	44	**68**
Landslide	3	8	7	22	37	**59**
Flash Flood	3	4	5	27	36	**57**
Dam/Levee Failure	2	9	12	31	52	**55**
Urban Fire/ Structural Fire	3	4	6	23	33	**53**
Public Health Emergency	2	12	9	26	47	**51**
High Wind and Tornado	2	8	14	24	46	**50**
Severe Thunderstorm	3	0	10	19	29	**47**
Civil Disorder/Riot	2	8	13	22	43	**47**
Mass Transportation Incident	2	7	11	25	43	**47**
Terrorism/ Active Assailant	2	8	9	21	38	**42**
Infrastructure and Structural Failure	2	7	7	22	36	**40**
Land Loss	2	8	6	21	35	**39**
Extreme Cold Incident	2	0	5	27	32	**36**
Severe Winter Storm	2	0	5	26	31	**35**
Earthquake	1	12	15	33	60	**34**
Extreme Heat Incident	2	0	5	24	29	**33**
Drought	1	1	2	18	21	**14**
Wildfire	1	0	2	16	18	**12**

*Normalized to 100

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues						
Action #	07-01	**Year Initiated**	2018	**Current Status**	New	**STAPLEE Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Update mapping of high-risk areas prone to landslides, overland, and combined sewer overflow flooding						
Action #	07-02	**Year Initiated**	2017	**Current Status**	Ongoing	**Prioritization Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Significant progress toward combined sewer and landslide mapping
2024		

2025		
2026		
2027		

Mitigation Action	Institute a buyout plan for flood prone structures and structures affected by landslides						
Action #	07-03	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	28/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct engineering impact studies on flood mitigation						
Action #	07-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Encourage and assist property owners to mitigate landslide issues before damages become more severe						
Action #	07-05	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	28/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Identify, investigate, and monitor landslides that affect public infrastructure						
Action #	07-06	**Year Initiated**	1989	**Current Status**	Ongoing	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop a GIS mapping layer with attributes to establish a record of existing and historic landslides on both public and private property						
Action #	07-07	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Implement participatory and priority-based budgeting						
Action #	07-08	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop annual funding for sustainability investments like a Municipal bond to capitalize on climate incentives of the Inflation Reduction Act (IRA)						
Action #	07-09	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Streamline procurement to enhance the impact of federal funding by utilizing cooperative purchasing including Omnia, GSA, Sourcewell						
Action #	07-10	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Continue to develop a framework for supporting green jobs with a focus on youth						
Action #	07-11	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Hire a grant writer to assist in pursuit of federal funding with focus on the Justice40 Initiative to address environmental justice issues						
Action #	07-12	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Create policy for the procurement of sustainable goods for internal City supplies and materials informed by a city audit to develop strategic priorities						
Action #	07-13	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Crowdsource climate solutions with programs like hackathons to tackle complex issues						
Action #	07-14	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Improve communication and accessibility of sustainability programs and progress to the public						
Action #	07-15	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Join and leverage Government Alliance on Race & Equity to advance climate equity programs						
Action #	07-16	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Update the Climate Equity Indicators report every 5 years to design programs to target benefits to priority communities						
Action #	07-17	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Incentivize green infrastructure projects in communities with extreme heat and flood vulnerabilities						
Action #	07-18	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Equitably restructure sewer rates based on permeable land surface and other contributing factors						
Action #	07-19	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Create a “sponge city” with more and diverse green infrastructure in public and residential places including green roofs, bioswales, green medians, wetlands, parks, permeable pavements, and landscape gardens.						
Action #	07-20	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Continue to decrease sewer backups, sewer overflows, and overland flooding (flash flooding) by supporting sewer infrastructure improvements in priority communities.						
Action #	07-21	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Partner with priority communities to identify opportunities to address property damage caused by overland flooding and hillside instability.						
Action #	07-22	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Ensure all rental housing has at least one room with adequate air conditioning						
Action #	07-23	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Use heat reflective materials when appropriate (roads, parking surfaces, roofs)						
Action #	07-24	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Create and support more opportunities like Climate Safe Neighborhoods (CSN) for residents to identify local environmental issues; empower residents and partners to implement community-based solutions						
Action #	07-25	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	32/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Support the Youth Environmental Council to mobilize the next generation						
Action #	07-26	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	32/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Support the launch of a one stop shop - physical and virtual - to support residents in making lifestyle changes through informing and incentivizing efforts						
Action #	07-27	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	32/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Support business owners and the start-up community to build and enact market solutions to address environmental issues, with a focus on women and minority-owned enterprises						
Action #	07-28	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	32/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop a comprehensive Food System Plan for Cincinnati, taking into consideration its urban/rural connections and preparation for potential large-scale disruptions due to climate change						
Action #	07-29	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Implement the Milan Urban Food Policy Pact related to good governance, sustainable diets & nutrition, social & economic equity, food production, food supply & distribution and food waste						
Action #	07-30	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Establish prioritized facilities as "Resilience Hubs" - centers for community gathering during emergency. Equip with solar and backup power to provide relief during emergencies						
Action #	07-31	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Pursue additional utility-scale clean energy with requests for proposal (RFP)						
Action #	07-32	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Organize facility managers to create a sustainable facility policy for new city buildings						
Action #	07-33	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Continue to strategically pursue energy efficiency for city facilities						
Action #	07-34	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Convert streetlights to LED including electrifying gas lights						
Action #	07-35	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Publish energy benchmarking data for city facilities on Cincy Insights						
Action #	07-36	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Focus city tree planting in neighborhoods with highest heat island effect as measured in the Climate Equity Indicators Report or most recent data						
Action #	07-37	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Provide incentives and support for the use of carbon crediting and/or carbon offset programs to fund tree planting, maintenance, land conservation, and forest rehabilitation						
Action #	37-38	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Plant more native tree species through education with non-profits, nurseries, and schools						
Action #	37-39	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Implement policies that protect existing trees during development efforts						
Action #	37-40	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Continue to implement affordable and mixed-income housing strategies to stabilize communities.						
Action #	07-41	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop neighborhood resilience hubs to foster community connection and increase emergency preparedness						
Action #	37-42	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Fund and expand the Climate Safe Neighborhoods program to cultivate the social infrastructure for resilient communities and provide green workforce training						
Action #	37-43	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop a climate migration response plan						
Action #	37-44	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct inventories, assessments, and clean-ups of contaminated industrial sites, referred to as brownfields, in alignment with both community revitalization priorities and city planned reuse						
Action #	07-45	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Address emerging pollutants, including pharmaceuticals and personal care products that are endocrine-disrupting chemicals, and microplastics						
Action #	07-46	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Protect landslide-prone hillsides and overland flood risk zones through land development policies, such as Low Impact Development						
Action #	07-47	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Grow and expand programs such as WarmUp Cincy to support low-income renters, homeowners, and landlords of affordable housing with the installation of weatherization, energy efficiency, and healthy home upgrades						
Action #	07-48	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	33/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Implement and fund programs to install solar on low-income housing

Action #	07-49	Year Initiated	2023	Current Status	New	STAPLEE+E Score	33/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Create policies that will increase the energy efficiency of residential single and multi-family buildings in order to decrease energy poverty						
Action #	07-50	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	33/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Install BC/DR software for improved planning and incident management, real-time dashboard, and for reporting						
Action #	07-51	**Year Initiated**	2023	**Current Status**	New	**Prioritization Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Harder city buildings and infrastructure protections to critical areas, city services, Police and Fire, power grid, and natural gas from storms and riots						
Action #	07-52	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	31/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Assess the condition of the city's Stormwater Management Utility stormwater infrastructure and reduce flooding risk to residents by repairing and/or upsizing the infrastructure						
Action #	07-53	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Update mapping of high risk areas prone to landslide, overland and combined sewer overflow flooding						
Action #	07-54	**Year Initiated**	2017	**Current Status**	Ongoing	**Prioritization Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Significant progressed toward combined sewer and landslide in progress
2024		
2025		
2026		
2027		

Mitigation Action	Implement the City's Coordinated Site Plan Review Process (ensuring all environmental factors are fully assessed prior to construction or development)						
Action #	07-55	**Year Initiated**	2017	**Current Status**	Complete	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Part of the work has to coordinate with OES and part of the permit system
2024		
2025		
2026		
2027		

Mitigation Action	Implement the Mass Notification System Rave-Alert (Opt-in emergency alerts across mobile phones, landlines, email, text, social media etc.)						
Action #	07-56	**Year Initiated**	2017	**Current Status**	Complete	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Cincy Alert rolled out in 2020 using Rave
2024		
2025		
2026		
2027		

Mitigation Action	Update the City's Emergency Response Plan "EOP"						
Action #	07-57	**Year Initiated**	2017	**Current Status**	Ongoing	**Prioritization Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Base Plan complete, ESFs in development
2024		
2025		
2026		
2027		

Mitigation Action	Identify and provide critical facilities with backup generators, batteries, and fuel						
Action #	07-58	**Year Initiated**	2017	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Consolidating date of critical facilities and current status
2024		
2025		
2026		
2027		

Mitigation Action	Increase emergency response and debris management capacity						
Action #	07-59	**Year Initiated**	2017	**Current Status**	Ongoing	**Prioritization Score**	28

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Park Board has taskforce to address and identify needs
2024		
2025		
2026		
2027		

Mitigation Action	Map the City's heat islands and identify vulnerable populations needing outreach						
Action #	07-60	**Year Initiated**	2017	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	OES is leading this effort
2024		
2025		
2026		
2027		

Mitigation Action	Outreach and Public engagement campaign on extreme weather preparedness						
Action #	07-61	**Year Initiated**	2017	**Current Status**	Ongoing	**Prioritization Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	City Managers ongoing engagement with residents
2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy-out plan for flood structures prone						
Action #	07-62	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continue to identify grant opportunities to purchase properties
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	07-63	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continue to increase the number of facilitators, exploring funding opportunities
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	07-64	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Cincy Alerts
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators						
Action #	07-65	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	All new schools have generators
2024		
2025		
2026		
2027		

Mitigation Action	Conduct engineering impact studies on flood mitigation						
Action #	07-66	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	3

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Part of regular flood plain admin for Buildings Dept.
2024		
2025		
2026		
2027		

Mitigation Action	Require manufactured homes to have tie-downs						
Action #	07-67	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Part of building code
2024		
2025		
2026		
2027		

Cleves – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Knuf	John	Director	Service Department	john.knuf@cleves.org
Myers	Stephen	Mayor	Village Council	stephen.myers@cleves.org
Myers	Tiffiney	Council Member	Village Council	tiffiney.myers@cleves.org
Rahall	Mike	Village Administrator	Administration	mike.rahall@cleves.org
Winhusen	Eric	Superintendent	Water Works	eric.winhusen@cleves.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (8 Response)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
John Knuf	Yes		3/2/2023, 9:00 am – 12:00 pm
Mike Rahall	Yes		3/2/2023, 9:00 am – 12:00 pm
Eric Winhusen	Yes		3/2/23, 9:00 am – 12:00 pm

Community Profile & Description

Cleves Village was founded in 1818 and is named for John Cleves Symmes who lived here, laid out the original town site and sold lots. Cleves Village is 1.58 square miles and had an estimated population of 3,380 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: The village has a K-12 school campus that is very diverse. Like all schools, this campus is also a potential place where civil disorder or rioting could occur.

Flood (Flash): A stream that intersects the village could potentially isolate several village neighborhoods.

Flood (Riverine): Flooding of the Ohio River and Miami River has the potential to close off several neighborhoods, which have a high elderly population.

Hazardous Materials Incident: A railroad track in the village has the potential to close off several neighborhoods if a derailment or chemical spill were to occur.

Landslide: Brunsman Way Subdivision is susceptible to landslides.

Mass Transportation Incident: State Route 50 is a major highway that passes through the village. A major accident would detour trucks and cars through small village streets.

Infrastructural and Structural Failure: If the bridge over the Miami River collapsed, it would close off east/west traffic to Indiana and the City of Cincinnati. The majority of utility lines in the village are not buried, and are susceptible to damages

Terrorism/Active Assailant: The village has its own water wells and water system that supplies water to several jurisdictions. These systems are vulnerable to terrorist or other criminal acts. The village has a large school campus (accommodates all ages of school children on one campus) with a population of approximately 2,500 children and adults. Like all schools, this campus would also be vulnerable to violent mass casualty incidents.

Cleves Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	11	15	25	51	**77**
Hazardous Material Incident	3	11	15	24	50	**76**
Flash Flood	3	7	12	28	47	**72**
Mass Transportation Incident	3	12	11	24	47	**72**
Riverine Flood	3	7	11	27	45	**69**
Severe Winter Storm	3	7	9	27	43	**67**
Earthquake	2	11	16	34	61	**63**
Extreme Cold Incident	3	3	10	27	40	**63**
Severe Thunderstorm	3	7	13	20	40	**63**
Extreme Heat Incident	3	3	10	25	38	**60**
Landslide	3	9	9	19	37	**59**
Infrastructure and Structural Failure	3	7	9	17	33	**53**
Public Health Emergency	2	9	9	25	43	**47**
Urban Fire/ Structural Fire	2	8	8	22	38	**42**
Land Loss	2	9	8	20	37	**41**
Terrorism/ Active Assailant	2	10	6	19	35	**39**
Drought	2	4	12	18	34	**38**
Wildfire	2	6	8	17	31	**35**
Cyber Incident	2	3	9	18	30	**34**
Civil Disorder/Riot	1	6	10	22	38	**23**
Dam/Levee Failure	0	7	8	29	44	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Increase capacity of streams and culverts in lower region of village (downstream)						
Action #	08-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy-out plan for flood prone structures						
Action #	08-02	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Port Authority demolished houses in flood zone.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	08-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Schools Water Plant
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	08-04	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Alert HC: Hamilton County
2024		
2025		
2026		
2027		

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels						
Action #	08-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Major Improvements
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators						
Action #	08-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	School Administration Building
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to improve the safety of high-hazard and accident-prone roads						
Action #	08-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Improved road safety storm water
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and business using natural gas						
Action #	08-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Liaison with Duke Energy
2024		
2025		
2026		
2027		

Mitigation Action	Establish mutual aid response agreements within the county						
Action #	08-09	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Shared services with the mutual aid agreements
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to re-engineer the rail road crossings						
Action #	08-10	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	One way traffic into park to avoid traffic.
2024		
2025		
2026		
2027		

Mitigation Action	Harden bridges						
Action #	08-11	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Clean creeks of debris.
2024		
2025		
2026		
2027		

Mitigation Action	Develop ordinances to require improved building standards and floodplain ordinances						
Action #	08-12	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Fire Department improving building standards
2024		
2025		
2026		
2027		

Colerain – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Cook	Frank	Fire Chief	Fire Department	fcook@colerain.org
Cordie	Ed	Police Sergeant	Police Department	ecordie@colerain.org
Mays	Tiphanie	Assistant Administrator	Administration	tmays@colerain.org
McElravy	Jeff	Assistant Administrator	Administration	jcelravy@colerain.org
Milles	David	Development Director		dmilles@colerain.org
Moltes	Tawanna	Assistant Public Service Director	Public Services	tmoltes@colerain.org
Mueller	Will	Assistant Fire Chief	Fire Department	wmueller@colerain.org
Packer	Shane	Assistant Fire Chief	Fire Department	
Schulte	Dan	Roads Supervisor	Public Services	dschulte@colerain.org
Walls	Allen	Fire Chief	Fire Department	awalls@colerain.org
Weckbach	Jeff	Administrator	Administration	jweckbach@colerainlrof

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (54 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jeff Weckbach	Yes		3/3/2023, 1:00 pm – 4:00 pm

Community Profile & Description

The Township of Colerain is the second-largest township in Ohio by population and the second-largest in area in Ohio. The village of Colerain was laid out in 1790 by surveyor John Dunlap, who was a native of Coleraine, Ireland. The township was organized in 1794. The township is 43.2 square miles. As of the 2021 American Community Survey 5-Year estimate , the population is 59,037.

Hazard Analysis

Civil Disorder/Riot: Contentious trials has the potential to cause riots in the area as seen with the Ray Tensing Trial. School (high school) sponsored events (e.g. Football) are also subject to civil disorder/riot.

Flood (Flash): Areas prone to urban flooding include: Groesbeck, Royal Heights Dr., Blanchetta, Sheldon, Northbrook, Ridgemore, Amarillo, Taylor Creek, Harrison Ave., Blue Creek (between Flick and Lockwood), Westfork of the Millcreek, and Coogan Dr. (Orangeburg).

Flood (Riverine): The Great Miami River is subject to flooding.

Hazardous Materials Incident: Transportation, especially on I-275 and I-74, is a concern to the township regarding hazardous materials release. There are three to four petroleum and high-pressure gas lines that transverse the Township. A rupture of a petroleum pipeline occurred in March 2014 and serves as an example.

High Wind and Tornado: Northern parts of the Township were damaged by a tornado in June 1990 and a high wind storm in September 2008. More recently in 2020, the Township has experienced multiple tornado outbreaks.

Infrastructure and Structural Failure: The Township has experienced infrastructure failure in the past. Past incidents include, the 2008 windstorm which caused failure to many utilities (i.e. electric, phone and cable TV, etc.). Exposure of expressway and/or highway bridge piers/columns to vehicle involved accidents resulting in closure of roadway. The Harrison Ave. bridge collapsed in 1989. The Township's bridges are at risk of experiencing infrastructure failure. In 2014, there was an oil pipeline rupture in the township.

Mass Transportation Incident: The 2012 "white out" caused a 100-vehicle accident.

Terrorism/Active Assailant: There is potential for terrorism in many locations. These include: mall, schools, and cultural events. There was a mass shooting in the township in 2017. More recently, the Township still experiences threats of mass shooting.

Colerain Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Winter Storm	3	10	14	29	53	**80**
Severe Thunderstorm	3	10	14	22	46	**71**
Extreme Cold Incident	3	3	9	27	39	**61**
Infrastructure and Structural Failure	3	7	14	18	39	**61**
Urban Fire/ Structural Fire	3	8	8	23	39	**61**
Extreme Heat Incident	3	3	9	25	37	**59**
Flash Flood	3	4	6	27	37	**59**
Riverine Flood	3	4	6	27	37	**59**
High Wind and Tornado	2	11	16	27	54	**57**
Public Health Emergency	2	12	12	30	54	**57**
Hazardous Material Incident	2	8	11	26	45	**49**
Land Loss	2	12	6	23	41	**45**
Landslide	2	12	6	21	39	**43**
Earthquake	1	12	16	34	62	**35**
Cyber Incident	3	0	4	16	20	**34**
Civil Disorder/Riot	1	10	12	24	46	**27**
Mass Transportation Incident	1	11	6	24	41	**25**
Terrorism/ Active Assailant	1	11	8	22	41	**25**
Drought	1	0	9	16	25	**16**
Dam/Levee Failure	0	9	5	29	43	**0**
Wildfire	0	9	7	21	37	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Educate residents on development of disaster preparedness kits and work to get kits made and distributed						
Action #	09-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Identify various shelters in township; establish sheltering plans and partnerships. Equip and retrofit the township's community center with a backup power supply generator for use as a shelter						
Action #	09-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Seeking grants for generators for community center
2024		
2025		
2026		
2027		

Columbia – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Kubicki	David	Trustee President	Township Trustees	dkubicki@columbiatwp.org
Taylor	Melissa	Township Administrator	Administration	melissa@columbiatwp.org
Frazier	Dustin	Road Superintendent	Service Department	dustin@columbiatwp.org
Siefke	Mike	Assistant Fire Chief	Little Miami Joint Fire & Rescue	

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (3 Responses)	Yes	Yes	Yes	No

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Dustin Frazier	Yes		3/3/2023, 1:00pm – 4:00 pm

Community Profile & Description

Columbia Township is best described as an "inland archipelago" – a group of nine "islands" separated by a "sea of municipalities. The township is 2.7 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 4,294.

Hazard Analysis

Cyber Incident: Cyber-attacks on township computer systems (i.e. financial information) is a concern.

Flood (Flash): Urban/flash flooding impacts housing at the bottom of hillsides. Overland run-off water occurs in several areas, such as: Madison Place, Ehrling Road, and Old Wooster Pike between Newtown and Terrace Park.

Flood (Riverine): Flooding occurs at the Little Miami River between Mariemont and Terrace Park.

Hazardous Material Incident: Rail traffic along the Little Miami River poses a HAZMAT concern/threat.

Landslide: Homes behind Mariemont Prominade (on Wooster Pike and Mariemont Crescent) are susceptible to landslides due to the natural springs.

Hazardous Material Incident (Radiological Incident): Healthcare facilities with radioactive materials/equipment are a concern, especially if they are located near major roadways, such as interstates or highways.

Columbia Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	8	10	27	45	**69**
Riverine Flood	3	8	10	24	42	**65**
High Wind and Tornado	2	11	15	25	51	**54**
Severe Thunderstorm	3	3	10	20	33	**53**
Hazardous Material Incident	2	12	10	24	46	**50**
Extreme Cold Incident	2	4	13	28	45	**49**
Extreme Heat Incident	2	4	13	26	43	**47**
Severe Winter Storm	2	4	10	28	42	**46**
Mass Transportation Incident	2	8	5	24	37	**41**
Drought	2	4	13	17	34	**38**
Landslide	2	8	5	20	33	**37**
Urban Fire/ Structural Fire	2	4	5	24	33	**37**
Land Loss	2	5	5	21	31	**35**
Public Health Emergency	1	6	11	28	45	**27**
Infrastructure and Structural Failure	1	7	10	19	36	**22**
Civil Disorder/Riot	1	5	8	21	34	**21**
Terrorism/ Active Assailant	1	8	5	20	33	**21**
Wildfire	1	4	5	20	29	**18**
Cyber Incident	1	5	5	18	28	**18**
Dam/Levee Failure	0	12	5	30	47	**0**
Earthquake	0	12	15	33	60	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Action	Mitigate Route 50 flooding east of Newtown Road						
Action #	10-01	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate urban flooding in Madison Place area during significant rain events						
Action #	10-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Raise public awareness ongoing storm water studies and road/stormwater improvements
2024		
2025		
2026		
2027		

Crosby – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Davis	Jason	Fire Chief	Fire Department	chiefdavis@crosbytwp.org
Heyob	Dennis	Trustee Vice President	Township Trustees	dheyob@crosbytwp.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (1 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jason Davis	Yes		4/3/2023, 9:00 am – 12:00 pm
Dennis Heyob	Yes		4/3/2023, 9:00 am – 12:00 pm
Ryan McEwan	Yes		4/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

Crosby Township has no formally organized villages, however, there have been three settlements: New Baltimore, New Haven and Whitewater Shaker Village New Baltimore was formed in 1819 by Samuel Pottinger. New Haven was platted as a village by Joab Cornstock in 1815. The Whitewater Shaker Village was founded in 1824. Crosby Township is 20.2 square miles and had a population of 5,640 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Drought: There are five major farms in the township are vulnerable to drought.

Flood (Flash): Howard Creek and Dry Fork Creek may cause urban/flash flooding.

Flood (Riverine): Flooding from the Great Miami River is a risk to the township.

Hazardous Materials Incident: Chemical companies in the township (i.e. Paddy Run, Nease Performance Chemicals) are vulnerable to hazardous materials release.

Infrastructure and Structural Failure: Texas gas line with compressor station is vulnerable to infrastructure failure. Duke substation is vulnerable to utility failure.

Mass Transportation Incident: Major transportation accidents are likely to occur on State Route 128 and New Haven Rd.

Terrorism/Active Assailant: 5k-10k runs/walk, Stricker's Grove, Rumpke Baseball fields, and Miami Whitewater Park are all events/venues that are potentially vulnerable to violent mass casualty incident. Additionally Crosby Elementary and Community Center are at risk to violent mass casualty incident.

Wildfire: Fernald and Miami Whitewater Park (controlled burns) are vulnerable to wildfire.

Crosby Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	7	16	26	49	**75**
Severe Winter Storm	2	7	16	28	51	**54**
Extreme Cold Incident	2	6	12	28	46	**50**
Extreme Heat Incident	2	7	12	26	45	**49**
Severe Thunderstorm	2	6	16	21	43	**47**
Drought	2	8	15	16	39	**43**
Public Health Emergency	2	5	8	25	38	**42**
Riverine Flood	2	1	5	23	29	**33**
Hazardous Material Incident	1	3	5	24	32	**20**
Urban Fire/ Structural Fire	1	0	8	23	31	**19**
Flash Flood	1	0	2	24	26	**17**
Terrorism/ Active Assailant	1	0	8	18	26	**17**
Infrastructure and Structural Failure	1	0	8	17	25	**16**
Cyber Incident	1	4	5	15	24	**16**
Mass Transportation Incident	1	0	0	24	24	**16**
Wildfire	1	0	2	17	19	**13**
Land Loss	1	0	0	18	18	**12**
Civil Disorder/Riot	0	1	0	18	19	**0**
Dam/Levee Failure	0	0	0	24	24	**0**
Earthquake	0	0	2	28	30	**0**
Landslide	0	0	0	16	16	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Relocating Fire department to be more centrally located						
Action #	11-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Promoting insurance to residents (homeowners and renting)						
Action #	11-02	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Commodity flow study (New Haven Rd. and State Route 128)						
Action #	11-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	35

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Work with LEPC

2024		
2025		
2026		
2027		

Mitigation Action	Obtain a generator and transfer switch for the Fire House						
Action #	11-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Install at firehouse rebuild.
2024		
2025		
2026		
2027		

Mitigation Action	Flood zone study for the community of New Haven						
Action #	11-05	**Year Initiated**	2018	**Current Status**	Archive	**STAPLEE Score**	35

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Deer Park – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Camp	Tom	Deputy Fire Chief	Deer Park-Silverton Joint Fire District	THC8902@aol.com
Donnellon	John	Mayor	Mayor's Office	jdonnellon@deerpark-oh.gov
Jetter	William	Safety Service Director	Administration	wjetter@deerpark-oh.gov
Meador II	Dennis	Fire Chief	Deer Park-Silverton Joint Fire District	dmeadorjr@dpsjfd.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (9 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
David Battin	Yes		3/28/2023, 1:00 pm – 2:30 pm
William Jetter	Yes		3/28/2023, 1:00 pm – 2:30 pm
Sheena Johnson	Yes		3/28/2023, 1:00 pm – 2:30 pm
Ryan McEwan	Yes		3/28/2023, 1:00 pm – 2:30 pm
Dennis Meador	Yes		3/28/2023, 1:00 pm – 2:30 pm
Michael Schlie	Yes		3/28/2023, 1:00 pm – 2:30 pm

Community Profile & Description

The City of Deer Park was established in 1795 and incorporated in 1912. The area that is now Blue Ash was settled circa 1791. The City is 0.87 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 5,439.

Hazard Analysis

Civil Disorder/Riot: The city is always prepared for a civil disorder/riot. These are likely to happen in the city and on main roadways.

Extreme Cold Incident: Assistance will be needed at retirement and nursing homes in the event of power/heat failure. If the City were to lose power, residential retirement communities, and nursing homes will all be in need of assistance.

Extreme Heat Incident: Assistance will be needed at retirement and nursing homes in the event of power/AC failure. Specifically, Brookdale Retirement Community and Wexford Retirement Community will need assistance in the event of an extreme heat incident.

Fire: Houses close in proximity to each other are of greatest concern.

Flood (Flash): Blue Ash and Redmont Avenue are prone to urban flooding. Residential basement flooding is also a concern with urban/flash flooding. Urban/flash flooding may impact city storm sewers causing streets to flood.

Hazardous Materials Incident: Railways and roadways are prime locations for Hazardous Materials Incident. Potential threats include fuel tankers, railroad, and gasoline delivery to gas stations.

Infrastructure and Structural Failure: Power transmission line and fiberoptic water lines are at greatest risk of failing in the city. Multiple facilities are at risk for structural failure. The buildings prone to structural failure are Amity School, St. Johns Church, Brookdale Residential Community, and Wexford Nursing home. Nursing and retirement communities are most vulnerable during utility failures, along with residents with functional and access needs. Power transmission and Deer Park Substation are also prone to damages.

Mass Transportation Incident: The city of Deer Park has a major railway with which hazardous products are transported through the community. Incidents on this major railway is a concern for the city.

Public Health Emergency: Nursing and retirement homes are vulnerable to public health emergencies. The city will rely on the County Health Declaration (schools) and Public Health Distribution Plan.

Severe Thunderstorm: Storm/wind damage to all businesses/homes is a possibility with severe thunderstorms. It could affect the entire city. There is concern of massive power outage; impacting retirement homes, schools, and churches.

Severe Winter Storm: Retirement and nursing homes may be in need of assistance during a major snow-related incident. Retirement homes, nursing homes, and schools are of greatest concern to the City.

Land Loss (i.e., Sinkhole, Karst, Subsidence, Erosion): Blue Ash Road and Plainfield Road are prone to subsidence.

Terrorism/Active Assailant: There are many events that could be targets for violent mass casualties. Those include, but are not limited to: school type functions, city summer concerts, and festivals. Other places of concern in Deer Park include: St Johns Festival, public schools, Amity School, and churches.

Deer Park Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Urban Fire/ Structural Fire	3	5	13	26	44	**68**
High Wind and Tornado	2	11	16	26	53	**56**
Severe Winter Storm	2	8	16	29	53	**56**
Extreme Cold Incident	2	7	14	28	49	**53**
Extreme Heat Incident	2	7	14	26	47	**51**
Public Health Emergency	2	8	12	27	47	**51**
Infrastructure and Structural Failure	2	8	16	22	46	**50**
Severe Thunderstorm	2	8	16	22	46	**50**
Cyber Incident	2	7	17	20	44	**48**
Flash Flood	2	5	11	28	44	**48**
Earthquake	1	8	16	32	56	**32**
Terrorism/ Active Assailant	1	8	16	21	45	**27**
Hazardous Material Incident	1	4	16	24	44	**26**
Civil Disorder/Riot	1	4	16	22	42	**25**
Mass Transportation Incident	1	4	11	23	38	**23**
Drought	1	5	14	18	37	**23**
Land Loss	1	0	8	24	32	**20**
Dam/Levee Failure	0	0	0	24	24	**0**
Riverine Flood	0	0	1	23	24	**0**
Landslide	0	0	4	17	21	**0**
Wildfire	0	0	0	15	15	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Phase 2 of the Blue Ash Street scape project which includes new electric poles, storm were replacements, sidewalks, parking, and gateway into SLVT						
Action #	12-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Pave, address the fire hydrants, and sidewalk on Plienfeld Rd						
Action #	12-02	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Blue Ash Road streetscape project. As part of this project, Duke Energy transmission lines are currently wood poles and would need to be replaced with steel poles						
Action #	12-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels						
Action #	12-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators						
Action #	12-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	

2024		
2025		
2026		
2027		

Mitigation Action	Conduct engineering impact studies on flood mitigation						
Action #	12-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Delhi – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Miller	Skylor	Township Administrator	Administration	administration@delhi.oh.us & smiller@dehli.oh.us
Campbell	Doug	Fire Chief	Fire Department	dcampbell@delhi.oh.us
Gelhausen	John	Projects Supervisor/ Assistant Director	Public Works	jgelhausen@delhi.oh.us
Howarth	Jim	Police Chief	Police Department	jhowarth@delhi.oh.us
Ripperger	Ronald	Director	Public Works	rripperger@delhi.oh.us
Davis	Mike	Trustee Chair	Township Trustees	mdavis@delhi.oh.us

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (27 Response)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Douglas Campbell	Yes		3/2/2023, 9:00 am – 12:00 pm
Jim Howarth	Yes		3/2/2023, 9:00 am – 12:00 pm
John Gelhausen	Yes		3/2/2023, 9:00 am – 12:00 pm
Jim Howarth	Yes		3/2/2023, 9:00 am – 12:00 pm
Ronald Ripperger	Yes		3/2/2023, 9:00 am – 12:00 pm
Cheryl Sieve	Yes		3/2/2023, 9:00 am – 12:00 pm

Community Profile & Description

Delhi Township, pronounced "DEL-high," rather than "deli," is one of twelve townships in Hamilton County. There is a springhouse, Sedam Springhouse, that dates back to the 1790s. It is one of the oldest buildings in the township and protected a natural spring which supplied water as late as 1937. Delhi Township is 10.1 square miles and had a population of 28,841 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: Delhi Township has a University and several middle and elementary schools in the jurisdiction. The potential for an active shooter situation is a real concern. Emergency services would be strained if an incident were to occur. Law enforcement would be committed to any long-term investigation.

Earthquake: Most structures in Delhi Township are not designed to withstand a significant earthquake. Residential impact would be significant based on building age and design. The jurisdiction would have a long recovery phase in returning to normal operations. Delhi Township consists of many combined sewer systems in multiple subdivisions, this can create a large amount of damage in a 5-/100 year rain.

Flood (Flash): Most flash flooding would be localized in nature. Flooding would impact road and bridge integrity, and some residential and commercial structures.

The following areas are prone to flash flooding. These flash flooding prone areas include: 5750-5670 Rapid Run Road, 1000-1100 Devils Back Bone, and 6150 Bender Road. All these areas are prone to flash flood conditions that flood/block access to roadways and adjoining residential and commercial structures.

* The population group from 5300-5750 Rapid Run Road hold repetitive risk concerns for flooding.

High Wind and Tornado: The jurisdiction would experience a significant loss if a tornado or high wind incident were to occur. Specifically, geriatric housing and extended care facilities would be on backup power or need assistance transferring patients.

Landslide: 6150 Bender Road is at a repetitive risk of flash flooding and a landslide threat. There have been multiple events where rocks and natural debris (1-2 feet of mud/rock) have washed across the roadway blocking access for several hours.

Mass Transportation Incident: Delhi township, west of Neeb Road, is in the north/south flight path of the Cincinnati/Northern Kentucky International Airport. Population density in that area is 2,869.7 people per square mile.

Public Health Emergency: Delhi Township has a University and several middle and elementary schools in the jurisdiction. The potential for a public health crisis (especially in these locations) is a real concern for the township.

Severe Thunderstorm: The jurisdiction would experience a significant loss of utilities during a major incident. Specifically, geriatric housing and extended care facilities would be on backup power or need assistance transferring patients.

Severe Winter Storm: The jurisdiction would experience a significant loss of utilities. Geriatric housing and extended care facilities would be on backup power or need assistance transferring patients.

Terrorism/Active Assailant: The six large schools in the jurisdiction, including Mount Saint Joseph University are at risk of an active shooter type incident.

Delhi Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Extreme Cold Incident	2	5	14	28	47	**51**
High Wind and Tornado	2	9	12	26	47	**51**
Extreme Heat Incident	2	5	14	26	45	**49**
Flash Flood	2	7	8	28	43	**47**
Severe Winter Storm	2	7	6	29	42	**46**
Severe Thunderstorm	2	4	6	22	32	**36**
Public Health Emergency	2	2	4	25	31	**35**
Earthquake	1	8	16	33	57	**33**
Hazardous Material Incident	1	5	11	25	41	**25**
Riverine Flood	1	7	6	23	36	**22**
Terrorism/ Active Assailant	1	4	6	21	31	**19**
Cyber Incident	1	3	7	20	30	**19**
Infrastructure and Structural Failure	1	5	6	19	30	**19**
Civil Disorder/Riot	1	3	6	19	28	**18**
Mass Transportation Incident	1	0	3	24	27	**17**
Dam/Levee Failure	0	0	0	24	24	**0**
Drought	0	0	3	17	20	**0**
Land Loss	0	1	0	19	20	**0**
Landslide	0	1	0	17	18	**0**
Urban Fire/ Structural Fire	0	1	4	23	28	**0**
Wildfire	0	0	4	18	22	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Update and separate the combined sewer system, Delhi Business district (Greenwell to Anderson Ferry)						
Action #	13-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	24/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	Douglas attaches visuals of maps of sewer to add to mitigation actions.
2024		
2025		
2026		
2027		

Mitigation Action	Update mass casualty plans to address emergency response to a mass transportation incident						
Action #	13-02	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	All EOP and COOP adopted to address: Complete Oct. 12, 2022
2024		
2025		
2026		
2027		

Mitigation Action	Provide updated agency and multi-agency preparedness for active shooter incidents in jurisdictional educational facilities						
Action #	13-03	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	All plans adopted and trained, fire and police equipped. All schools equipped and trained.
2024		
2025		
2026		
2027		

Mitigation Action	Purchase and update generators for key community facilities						
Action #	13-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Pre-Disaster Mitigation (PDM) Grant Program Acquisition Project						
Action #	13-05	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	35

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Delhi Township is excited to bring this project to completion and looks forward to providing the needed relief for those homeowners who have endured flooding issues over the years. Total obtained and demolished is 35 out of the 46 available.
2024		
2025		

2026		
2027		

Elmwood Place – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Baehr	Robert	Fire Lieutenant	Fire Department	robert_baehr@yahoo.com
McCarnan	David	Fire Chief	Fire Department	dmccarnan@elmwoodplace-oh.gov
Dornbusch	Sheila	Village Clerk	Village Council	sdornbusch@elmwoodplace-oh.gov
Spears	Don	Manager	Service Department	
Spears	Ronald	Mayor	Village Council	rspears@elmwoodplace-oh.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (6 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Sheila Dornbusch	Yes		3/27/23, 3:30 pm – 5:00 pm
David McCarnan	Yes		3/27/23, 3:30 pm – 5:00 pm
Ryan McEwan	Yes		3/27/23, 3:30 pm – 5:00 pm
Ronald Spears	Yes		3/27/23, 3:30 pm – 5:00 pm

Community Profile & Description

Elmwood Place Village was laid out in 1875 and was incorporated as a village in 1890. Elmwood Place Village is 0.32 square miles and had an estimated population of 2,215 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: Due to the village's proximity to the City of Cincinnati and the densely populated surrounding areas, the possibility of a civil unrest or major incident is a concern to the village.

Fire: Fire prevention efforts are needed in the village to mitigate this hazard.

Flood (Flash and Riverine): Mill Creek to the western border of the village presents a flood risk to the village. Flooding in years past has affected the community. Past incidents have damaged roads and property; and required additional fire responses (i.e., such as the flash flooding that affected the communities of St. Bernard and Norwood).

Hazardous Materials Incident: Trains and semi-truck traffic through the village may present a potential risk for a HAZMAT-related incident. The Village of Elmwood Place has two railways running through the village. One is operated by CSX the other by Norfolk Southern. The railway on the eastern side of the community can see upwards of four trains an hour during peak time. Also, there is major industry to the north, south and western borders of the village that utilize a number of chemicals in their production.

High Wind and Tornado: High wind incidents are of particular concern to the village.

Mass Transportation Incident: CSX and Norfolk Southern travel through Elmwood Place posing a possible risk for train derailments.

Elmwood Place Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Hazardous Material Incident	3	8	15	25	48	**73**
Mass Transportation Incident	3	7	13	25	45	**69**
High Wind and Tornado	2	11	15	25	51	**54**
Extreme Cold Incident	2	8	13	28	49	**53**
Severe Winter Storm	2	8	13	27	48	**52**
Extreme Heat Incident	2	8	13	26	47	**51**
Urban Fire/ Structural Fire	2	7	15	24	46	**50**
Severe Thunderstorm	2	7	15	20	42	**46**
Infrastructure and Structural Failure	2	8	13	19	40	**44**
Cyber Incident	2	8	8	19	35	**39**
Land Loss	2	1	7	21	29	**33**
Public Health Emergency	1	7	11	28	46	**27**
Civil Disorder/Riot	1	7	15	21	43	**26**
Riverine Flood	1	4	12	24	40	**24**
Terrorism/ Active Assailant	1	6	13	20	39	**24**
Drought	1	4	13	19	36	**22**
Wildfire	1	3	0	19	22	**14**
Dam/Levee Failure	0	3	3	26	32	**0**
Earthquake	0	3	15	32	50	**0**
Flash Flood	0	3	12	27	42	**0**
Landslide	0	3	5	19	27	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Relocate Public Works and the firehouse to less vulnerable location						
Action #	14-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	39/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Ongoing mitigation strategies for this jurisdiction are addressed in the “Hamilton County Jurisdiction Profile.

Evendale – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Elmer	David	Assistant to the Mayor	Administration	Divid.elmer@evendaleohio.org
Finan	Richard H.	Mayor	Village Council	Richard.finan@evendaleohio.org
Hauck	Michael	Fire Chief	Fire Department	Mike.hauck@evendaleohio.org
Jeffers	James	Service Director/Engineer	Service Department	James.jeffers@evendaleohio.org
Holiway	Tim	Police Chief	Police Department	Tim.holiway@evendaleohio.org
Asbruck	Brandan	Foreman/Electrician	Service Department	Brandan.asbruck@evendaleohio.org
Mercer	Donald	Building Commissioner, Chief Building Official	Building Department	Donald.mercer@evendaleohio.org
Knight	Adam	Recreation Director	Recreation Department	Adam.knight@evendaleohio.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (1 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Adam Knight	Yes		3/3/2023, 9:00 am – 12:00 pm
Michael Hauck	Yes		3/3/2023, 9:00 am – 12:00 pm
James Jeffers	Yes		3/3/2023, 9:00 am – 12:00 pm
Tina McCormick	Yes		3/3/2023, 9:00 am – 12:00 pm
Tom Sextro	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

14 mile marker on Interstate 75, one mile south of Interstate 275 and two miles west of Interstate 71. Home to several world headquarters of corporations, convenient to all major highways. According to the 2021 5 -Year ACS estimate, the population of Evendale is 2,664.

Hazard Analysis

Civil Disorder/Riot: Community events on recreation grounds, GE, and Summit Park events are all vulnerable to civil disorder/riots.

Dam/Levee Failure: Dam failure at the regional detention basin, Kingsport, Sharon Woods Dam, and Millcreek are of concern to the village.

Fire: GE, Jet Fuel-Chemicals, Formica-Chemicals, and Nexco-Hazmat Chemicals are susceptible to fire hazards.

Flood (Flash): Flooding is possible at Millcreek and Cooper Creek. The areas prone to flooding are Exon Avenue and Evendale Drive.

Hazardous Materials Incident: UNIVAR, GE, and Formica may be at a potential risk for HAZMAT-related incidents INCLUDING Norfolk Southern and Dailyard. A transportation-related HAZMAT incident would impact the village's population. Most of the population in the village reside to the east of the major transportation routes (I-75and railways). The winds are primarily from the west, which would push any release toward the heavily populated areas of the village.

Infrastructure and Structural Failure: Damaged railroad trestles due to flooding/erosion increase the risk of infrastructure failure. Duke's transmission gas lines, major electrical transmission lines, and Glendale Water Works (Sharon Road) are all vulnerable to utility failure.

Landslide: Otterbein Drive and LAMARC Drive are areas vulnerable to landslide.

Mass Transportation Incident: I-75 is susceptible to major transportation accidents. CSX and Norfolk Southern railways and railyard are vulnerable to railroad derailments. A major transportation incident would overwhelm local capabilities.

Terrorism/Active Assailant: The GE Aero Space plant could be a target for potential terrorist incidents.

Terrorism/Active Assailant: The following places in the village vulnerable to violent mass casualty incidents are: GE, Summit Park events, community recreation events, Evendale Elementary, Formica, and St. Rita School for Deaf.

Wildfire: Gorman Farm (120 acres) is susceptible to wildfire. Other locations with potential vulnerability to wildfire are (GE) Old Pottinger Farm (50 acres) and Griffin Preserve (33 acres).

Evendale Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	11	17	27	55	**82**
Flash Flood	3	7	15	29	51	**77**
Public Health Emergency	3	12	11	27	50	**76**
Severe Winter Storm	3	7	12	30	49	**75**
Riverine Flood	3	7	15	26	48	**73**
Extreme Cold Incident	3	7	12	27	46	**71**
Mass Transportation Incident	3	7	12	27	46	**71**
Extreme Heat Incident	3	7	12	25	44	**68**
Severe Thunderstorm	3	7	14	22	43	**67**
Urban Fire/ Structural Fire	3	8	10	25	43	**67**
Cyber Incident	3	9	12	21	42	**65**
Hazardous Material Incident	2	11	15	26	52	**55**
Civil Disorder/Riot	2	10	17	24	51	**54**
Infrastructure and Structural Failure	2	12	15	23	50	**53**
Terrorism/ Active Assailant	2	11	13	23	47	**51**
Wildfire	2	5	8	20	33	**37**
Earthquake	1	11	14	35	60	**34**
Dam/Levee Failure	1	9	11	29	49	**29**
Land Loss	1	5	10	23	38	**23**
Landslide	1	5	10	20	35	**22**
Drought	1	7	6	18	31	**19**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Campus hardening of village grounds for community safety						
Action #	15-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Replace and upgrade generators at community buildings including Police, Fire, and Recreation. Procure portable generators for traffic signals during power outages						
Action #	15-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Equip existing facilities as safe rooms/shelters						
Action #	15-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and business using natural gas						
Action #	15-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop independent fuel depot						
Action #	15-05	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		

2026		
2027		

Mitigation Action	Build/establish shelters with generators for smaller jurisdictions and mobile home parks						
Action #	15-06	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	N/A
2024		
2025		
2026		
2027		

Mitigation Action	Establish mutual aid response agreements within the county						
Action #	15-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Fairfax – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Bronson	Jeff	Chief of Police	Police Department	jbronson@fairfoxoh.org
Kaminer	Jennifer	Administrator	Administration	jkaminer@fairfaxoh.org
Siefke	Mike	Chief	Little Miami Joint Fire & Rescue	msiefke@lmfr.org
Shelton	Carson	Mayor	Administration	cshelton@fairfaxoh.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (2 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jennifer Kaminer	Yes		3/3/2023, 9:00 am – 12:00 pm
Rodney Naticchioni	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

Fairfax Village was established in 1955. Fairfax Village is 0.76 square miles and had an estimated population of 2,147 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash): Little Duck Creek floodplain is potentially vulnerable to flooding. Lower Simpson, Bancroft, Lower Germania, S. Whetzel, Fair Lane/Ford Circle, Lower Watterson, and Bedford Nightingale Court are also locations with potential street flooding.

Hazardous Materials Incident: Rail line along Red Bank Road (Norfolk/Southern Rail) may be a potential risk for HAZMAT-related incidents.

Landslide: Hillside erosion occurring on Eleanor Street (dead end) is potentially vulnerable to landslide. A storm sewer line empties into a ravine above Whiskey Creek. Water from the outfall is beginning to erode the hillside and residential yards on the east end of Eleanor. Additionally, Hillside erosion is occurring along US 50 East in Fairfax. Hillside repairs were Complete in 2017 by ODOT, which threatened the eastbound lane of US 50. Potential for other erosion still exists.

Land Loss (i.e., Sinkhole/Karst/Subsidence/Erosion): Small sinkholes have occurred on residential streets. Some have been due to utility (MSD, CWW line leaks) leaks. There are also unknown causes of sinkholes. In 2015, a sinkhole resulted in water disappearing from the Little Duck Creek at Watterson for about 1 month. Water suddenly reappeared in the creek.

Terrorism/Active Assailant: Mariemont Jr High School on Southern Avenue is potentially vulnerable to a violent mass casualty incident.

Fairfax Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	11	16	32	59	**88**
Riverine Flood	3	11	16	29	56	**84**
High Wind and Tornado	3	12	16	26	54	**81**
Public Health Emergency	3	12	12	28	52	**78**
Severe Winter Storm	3	11	12	29	52	**78**
Extreme Cold Incident	3	4	12	28	44	**68**
Extreme Heat Incident	3	4	12	26	42	**65**
Severe Thunderstorm	3	8	12	22	42	**65**
Land Loss	3	5	11	24	40	**63**
Terrorism/ Active Assailant	2	12	17	22	51	**54**
Hazardous Material Incident	2	10	12	25	47	**51**
Cyber Incident	2	12	12	22	46	**50**
Infrastructure and Structural Failure	2	11	9	20	40	**44**
Landslide	2	7	11	22	40	**44**
Mass Transportation Incident	2	8	6	26	40	**44**
Drought	2	5	14	19	38	**42**
Earthquake	1	12	16	34	62	**35**
Urban Fire/ Structural Fire	1	12	13	27	52	**30**
Civil Disorder/Riot	1	11	14	23	48	**28**
Wildfire	1	12	13	22	47	**28**
Dam/Levee Failure	1	6	6	30	42	**25**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Prepare and retrofit the R.G. Cribbet Community Center as an emergency community shelter; includes generator, handicapped access; ADA compliant restroom facilities; stuck up on supplies (cots, blankets)						
Action #	16-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	37

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Property acquisition of homes affected by hillside erosion on Eleanor						
Action #	16-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Slow erosion – 1 or 4 homes acquired- other homes may be years down the road.
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate debris build up in Little Duck Creek at Railroad Bridge

Action #	16-03	Year Initiated	2018	Current Status	Ongoing	STAPLEE Score	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Need to work with Railroad/Wasson Way trail to get center pier removed.
2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy-out plan for flood prone structures						
Action #	16-04	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	All repetitive loss structures either acquired or flood proofing Complete.
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	16-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Will seek funding.
2024		

2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to mitigate landslide and erosion issues						
Action #	16-06	Year Initiated	2013	Current Status	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Study not complete; coordinate with ODOT.
2024		
2025		
2026		
2027		

Mitigation Action	Conduct engineering studies on flood mitigation						
Action #	16-07	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Establish mutual aid response agreements within the county						
Action #	16-08	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire communication radios for emergency personnel						
Action #	16-09	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Purchase of Dire Department Radios planned for 2023
2024		
2025		
2026		
2027		

Forest Park – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Anderson	Chris	Director	Community Development	Canderson@forestpark.org
Arns	William	Police Chief	Police Department	williama@forestpark.org
Brown	Rebekah	Specialist	Public Works	rbrown@forestpark.org
Falkowski	Scott	Director	Stormwater Utility	sfalkowski@forestpark.org
Bailey	Tekiquia	Clerk of Council	City Council	tbailey@forestpark.org
Gallenstein	Steve	Assistant Director	Public Works	sgallenstein@forestpark.org
Gwyn	Wright	Program Manager	Environmental Awareness	environment@forestpark.org
Hill	Jermaine	Assistant Fire Chief	Fire Department	jermaineh@forestpark.org
Jones	Donnie	City Manager	Administration	drjones@forestpark.org
Brown	Aharon	Mayor	City Council	council@forestpark.org
Jones	Alfie	Fire Chief	Fire Department	alfiej@forestpark.org
Levandusky	Andy	Assistant City Manager	Human Resources	alevandusky@forestpark.org
Nakouzi	Rafic	Director	Building Department	raficn@forestpark.org
Roberts	James	Foreman	Public Works	jroberts@forestpark.org
Silber	Rob	Administrator	Information Systems	robs@forestpark.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (12 Response)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Chris Anderson	Yes		3/1/2023, 9:00 am – 12:00 pm
William Arns	Yes		3/2/2023, 1:00 pm – 4:00pm
William Black	Yes		3/2/2023, 1:00 pm – 4:00pm
Alfie Jones	Yes		3/2/2023, 1:00pm – 4:00pm
James Ward	Yes		3/2/2023, 1:00pm – 4:00pm

Community Profile & Description

The City of Forest Park was founded in 1956. The City is 6.48 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 19,940.

Hazard Analysis

Civil Disorder/Riot: Due to the ever-changing political and social climate, civil disorder is a possibility for the City. Specifically, the following areas may be more prone to these incidents: F, G, or H Sections, Dewdrop and Q section apartments and high schools.

Cyber Incident: Several major corporations within the city, including local government utility computers, are at risk. Cyberattacks have the ability to compromise any system tied to a computer/network.

Dam/Levee Failure: Wright Farm Detention Basin Dam and Kemper Meadow Detention Basin Dam are both threats. ODNR requires emergency action plans (EAPs) for these dams. EAPs must be updated frequently, the most recent iterations Complete in 2018.

Earthquake: A moderate earthquake represents a major concern for the city. Buildings and structures are not built for seismic incidents and will affect all groups with long-term displacement and health issues. A moderate earthquake will also cause infrastructure failure.

Extreme Cold Incident: Extreme cold events, in addition to power failure, will cause people to use unapproved heating methods.

Extreme Heat Incident: Extreme heat incidents may necessitate cooling shelters for elderly or sick individuals. Power failure will exacerbate this issue.

Fire: Day-to-day fire incidents occur in the city.

Hazardous Materials Incident: Traffic on I-275, as well as outside storage areas in business parks throughout the city, are vulnerable to HAZMAT-related incidents. I-275 is potentially vulnerable to a radiological incident.

High Wind and Tornado: Notification of the community during a tornado or high wind incident will be critical. Homes built on concrete slabs will especially need saferooms/wind shelters. Apartments in the City may also need these safety accommodations. Promoting safe rooms is a much need mitigation activity for the area.

Infrastructure and Structural Failure: Several bridges crossing I-275 and major roadways through Forest Park, Winton, and Kemper are potentially vulnerable to infrastructure failure. Building practices in the 1970s to 1980s have resulted in weak foundations and walls in residential areas. Builders “flipping” homes and removing load baring walls is a unique concern for the city.

Mass Transportation Incident: I-275, with trucks bypassing I-75 and 71, is an area of concern for major transportation incidents. Vehicles carrying HAZMAT travel the I-275 bypass.

Public Health Emergency: Flu outbreak or biological terrorist incident is a concern for the city. High schools and Winton House are especially vulnerable to public health emergencies.

Severe Thunderstorm: Tree damage and power failure (due to downed power lines) may result in a severe thunderstorm incident. Individuals attending outdoor events, such as concerts, are also at risk.

Terrorism/Active Assailant: I-275 is a vulnerable area for terrorism. Community events, such as jazz in the park, could be an attractive target for terrorists. Terrorism and extreme weather incidents may impact the city and cause utility failure. Schools and several large community areas/apartment complexes are vulnerable targets for a mass casualty incident.

Wildfire: A section of Great Parks, north of Sharon (between Mill Road and Embassy Road) are prone to wildfire.

Forest Park Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Extreme Cold Incident	3	4	18	32	54	**81**
Extreme Heat Incident	3	4	18	30	52	**78**
High Wind and Tornado	3	8	16	26	50	**76**
Infrastructure and Structural Failure	3	7	13	23	43	**67**
Severe Winter Storm	3	0	13	28	41	**64**
Severe Thunderstorm	3	0	13	21	34	**54**
Civil Disorder/Riot	2	9	15	24	48	**52**
Urban Fire/ Structural Fire	3	0	7	24	31	**50**
Hazardous Material Incident	2	7	12	22	41	**45**
Cyber Incident	2	10	7	20	37	**41**
Terrorism/ Active Assailant	2	4	8	22	34	**38**
Mass Transportation Incident	2	3	7	23	33	**37**
Earthquake	1	12	16	34	62	**35**
Public Health Emergency	1	6	10	27	43	**26**
Flash Flood	1	0	0	23	23	**15**
Drought	1	3	0	15	18	**12**
Wildfire	1	0	0	15	15	**10**
Dam/Levee Failure	0	0	0	24	24	**0**
Riverine Flood	0	0	0	20	20	**0**
Land Loss	0	0	1	18	19	**0**
Landslide	0	0	0	16	16	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Tabletop exercise for city employees and educate the public on disaster preparedness for their homes and residences						
Action #	17-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	31/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Identity shelter locations, capacities and capabilities, coordinate volunteers and donations						
Action #	17-02	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	30/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Allowing for more access to safe rooms for high wind events at existing homes/apartments/public places. Any new residential

	home/public assemblies are required to have a "safe room/place" built for that structure						
Action #	17-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Safety area for tornado/high wind including with new high school.
2024		
2025		
2026		
2027		

Mitigation Action	WW-5 Conduct winter weather risk awareness activities. Strategies to drive safety in driver education classes; educating about fuel-burning equipment and alarms						
Action #	17-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Community and school education program.
2024		
2025		
2026		
2027		

Mitigation Action	Conduct lightning awareness programs. Teach students about the dangers of lightning and how to take precautions						
Action #	17-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	17-06	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Complete at schools city hall, public works.
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study on winter snow maintenance of older homes						
Action #	17-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	To be done
2024		

2025		
2026		
2027		

Mitigation Action	Seek Storm Water Repair Grant						
Action #	17-08	**Year Initiated**	2007	**Current Status**	Ongoing	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Storm water grant program for property owners active and ongoing.
2024		
2025		
2026		
2027		

Mitigation Action	Develop an enhanced county-wide emergency notification communication system						
Action #	17-09	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	14

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Swift 911 system implanted
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	17-10	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	30

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	New equipment purchased
2024		
2025		
2026		
2027		

Glendale – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Alderfer	Tom	Public Works	Public Works	talderfer@glendaleohio.org
Bell	Kevin	Chief Utility Operator	Utility Department	kbell@glendaleohio.org
Hawkins	Spencer	Administrative Clerk	Administration	shawkins@glendaleohio.org
Jetter	William	Fire Chief	Fire Department	wjetter@glendaleohio.org
Lerman	Scott	Asst. Fire Chief	Fire Department	slerman@glendaleohio.org
Lofty	Donald	Mayor	Village Council	dlofty@glendaleohio.org
Lumsden	David	Village Administrator	Administration	dlumsden@glendaleohio.org
Macenko	Nacy	Councilmember	Council	nmacenko@glendaleohio.org
Romano	Toney	EMS Coordinator	Fire Department	cwalsh@glendaleohio.org
Walsh	Craig	Police Chief	Police Department	cwalsh@glendaleohio.org
Wilson	Sally	Office Manager	Administration	swilson@glendaleohio.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (3 Responses)	Yes	Yes	Yes	

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
William Jetter	Yes		4/4/2023, 2:00 pm – 3:30pm
Donald Lofty	Yes		4/4/2023, 2:00 pm – 3:30pm
David Lumsden	Yes		4/4/2023, 2:00 pm – 3:30pm
Ryan McEwan	Yes		4/4/2023, 2:00 pm – 3:30pm

Community Profile & Description

Glendale Village was founded in 1855. Glendale is one of only four communities in Hamilton County that does not have an income tax. In 1977, Glendale became the first village in Ohio designated as a National Historic Landmark by the U.S. Department of the Interior. Glendale Village is 1.69 square miles and had an estimated population of 1,930 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Cyber Incident: The Village operates a water and sewer utility that relies on internet and telephone networks, including plant operation and billing services.

Dam/Levee Failure: Winton Woods Lake poses a minor risk to the village, but is unlikely to fail.

Flood (Flash): The village has experienced street flooding on Greenville Ave, Troy Ave, Sharon Rd, Little Creek, Ward, and the I-75 south entrance from Sharon Rd. Flash flooding on railroad tracks has also occurred. Flooding has also caused erosion on the Coral Avenue bridge.

Hazardous Materials Incident: Many hazardous materials utilize both rail lines and the interstate. This poses a potential vulnerability and added risk for hazardous releases. GE and large sulfuric storage areas are also potentially vulnerable to HAZMAT incidents. Railroad lines and roadways transporting radiological materials pose a risk to the village.

High Wind and Tornado: Many old, large trees throughout village pose a threat during tornado/high wind incidents.

Infrastructure and Structural Failure: Water mains needing upgrades, could potentially cause infrastructure failure. Older systems are in need of replacement. Water and sewer infrastructure aging beyond anticipated life, replacement of a significant portion of these mains is required. Additionally, storm water management systems are overwhelmed by heavy rainfall events, causing potential property damage, etc. Tree limbs may cause electrical service issues for parts of the Village..

Mass Transportation Incident: I-75 (over 100,000 vehicles per day) and two CSX rail lines that run through the village are both potentially vulnerable to major transportation accidents.

Severe Thunderstorm: Many old large trees throughout village are prone to damage from severe thunderstorm.

Land Loss (i.e. Sinkhole/Karst/Subsidence Erosion): Failures due to crumbling pipes and lines underground are of concern to the village.

Terrorism/Active Assailant: Like all prominent employers and schools, GE and the Bethany School Complex are a potential target for terrorism or criminal acts. High risk areas for violent mass casualty incidents include rail lines (Amtrak) and Interstate 75.

Wildfire: The north end of North Troy and North Greenville, by the railroad tracks, is vulnerable to wildfire.

Glendale Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	11	15	23	49	**75**
Infrastructure and Structural Failure	3	12	13	20	45	**69**
Severe Thunderstorm	3	4	13	19	36	**57**
Hazardous Material Incident	2	11	15	24	50	**53**
Public Health Emergency	2	8	11	26	45	**49**
Flash Flood	2	7	10	27	44	**48**
Severe Winter Storm	2	4	13	26	43	**47**
Extreme Cold Incident	2	3	5	26	34	**38**
Extreme Heat Incident	2	3	5	24	32	**36**
Riverine Flood	1	8	13	24	45	**27**
Civil Disorder/Riot	1	11	13	20	44	**26**
Terrorism/ Active Assailant	1	11	11	18	40	**24**
Cyber Incident	1	11	10	17	38	**23**
Mass Transportation Incident	1	4	5	22	31	**19**
Urban Fire/ Structural Fire	1	4	5	22	31	**19**
Drought	1	3	3	15	21	**14**
Land Loss	1	0	2	19	21	**14**
Dam/Levee Failure	0	0	0	24	24	**0**
Earthquake	0	0	0	27	27	**0**
Landslide	0	0	0	16	16	**0**
Wildfire	0	0	0	15	15	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Continued replacement of aging water, wastewater and stormwater infrastructure						
Action #	18-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Permanent generator installation at Glendale Fire Station/Town Hall to power necessary Fire Department equipment and make Town Hall space functional for use as warming/cooling center, Point of Dispensing, etc.						
Action #	18-02	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Replace Fire apparatus on rotating 10-15 year lifecycle						
Action #	18-03	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**

2023		
2024		
2025		
2026		
2027		

Mitigation Action	Purchase portable generator						
Action #	18-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	33

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	ID Funding Source
2024		
2025		
2026		
2027		

Mitigation Action	Water main/hydrant replacement						
Action #	18-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Sharon Repl. 2021 more repl. Coming hydrant repl. ongoing
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options						
Action #	18-06	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Village transitioned to CMom/Stormwater Impr.
2024		
2025		
2026		
2027		

Mitigation Action	Expand inventory of emergency equipment						
Action #	18-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Rep'l pumper ordered, April 2025
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to evaluate inertial valves						
Action #	18-08	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Evaluation of backflow devices for sanitary systems						
Action #	18-09	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Unneeded

2024		
2025		
2026		
2027		

Golf Manor – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Burgin	Paula			p.burgin@golfmanoroh.gove
Campbell	Christopher	Police Chief	Police Department	c.campbell@golfmanoroh.gov
Chaney	Sharon	Councilmember	Village Council	s.chaney@golfmanoroh.gov
Densmore	Stefan			s.densmore@golfmanoroh.gov
Doering	Brian	Firefighter/Paramedic	Little Miami Joint Fire & Rescue	brian.doering@cincinnati-oh.gov
Forrest	Michael	Police Lieutenant	Police Department	m.forrest@golfmanoroh.gov
Hirth	Ron	Village Administrator	Administration	r.hirth@golfmanoroh.gov
Mathews	Jill	Police Officer	Police Department	j.mathews@golfmanoroh.gov
Puthoff	James			j.puthoff@golfmanoroh.gov
Pridonoff	Eric			e.pridonoff@golfmanoroh.gov
Synder	Ashley			a.synder@golfmanoroh.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (5 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Stefan Densmore	Yes		3/3/2023, 9:00 am – 12:00 pm
Eric Pridonoff	Yes		3/3/2023, 9:00 am – 12:00 pm
James Puthoff	Yes		3/3/2023, 9:00 am – 12:00 pm
Ashley Snyder	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

Golf Manor Village was laid out by property developers in the 1920s. The village has the oldest Orthodox Jewish synagogue in the Cincinnati Area, Golf Manor Synagogue. Golf Manor Village is 0.57 square miles and had an estimated population of 3,782 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: Civil disorder, spilling over from adjoining jurisdictions, is a concern for the village.

Cyber Incident: The village hosts its own server which is vulnerable to cyberattack. Interestingly people are dependent on internet access and utility.

Extreme Cold Incident: Low income residents who cannot pay their utility bills may need to shelter in municipal buildings (Pleasant Ridge Community Center) during extreme cold events.

Extreme Heat Incident: Low income residents who do not have A/C, may need to shelter in municipal buildings (Pleasant Ridge Community Center) during extreme heat events.

Flood (Flash): Older MSO lines and storm runoff cause flooding in basements throughout village. Chuck Harman Way, Stover Ave., and Rosedale Ave. are areas potentially vulnerable to flooding. In previous years, the location at 2100 Losantiville Ave has flooded and required rescue.

Hazardous Materials Incident: The Hilton Devis (chemical company**)** Wright Brothers (compressed gas company), railroads, and pipelines are susceptible to hazardous materials release.

High Wind and Tornado: There is potential for tornado and high winds throughout village. They have a Duke Energy substation that is vulnerable to extreme wind events. There is also a safe room for first responders is needed.

Infrastructure and Structural Failure: Train trestle, MSO Lines, and the Duke Energy power relay station and pipeline (located adjacent to the railroad track between Section Road and Losantiville Avenue) are all vulnerable to infrastructure failure. The aging multi-family buildings in the village are more vulnerable to structural failure and present a concern for the village. Above ground utilities throughout village creates added concern for utility failure. A generator for the municipal building and systems backup is needed.

Mass Transportation Incident: Trains passing through the village pose a possible risk for a major transportation incident.

Public Health Emergency: The aging population in the village are more vulnerable during a public health emergency.

Severe Thunderstorm: Storm runoff throughout village, older tree destruction, and above ground utility damage from trees are concerns during severe thunderstorm events.

Severe Winter Storm: The village has issues with their salt storage facility.

Land Loss (i.e. Sinkhole/Karst/ Subsidence Erosion): Subsidence is a possible vulnerability throughout village, particularly the 6000 block of Stover Ave.

Terrorism/Active Assailant: The village's proximity to the four (4) Jewish schools within Golf Manor and the oldest orthodox synagogue in Cincinnati within Golf Manor present an added terrorist concern. Schools and synagogues are a potential target for violent mass casualty incidents.

Golf Manor Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	12	18	28	58	**86**
Hazardous Material Incident	3	12	18	27	57	**85**
Civil Disorder/Riot	3	11	18	25	54	**81**
Infrastructure and Structural Failure	3	12	17	24	53	**80**
Extreme Cold Incident	3	8	12	30	50	**76**
Extreme Heat Incident	3	8	12	28	48	**73**
Public Health Emergency	3	12	13	23	48	**73**
Severe Winter Storm	3	8	12	28	48	**73**
Flash Flood	3	8	13	25	46	**71**
Terrorism/ Active Assailant	3	12	16	18	46	**71**
Severe Thunderstorm	3	8	14	20	42	**65**
Cyber Incident	3	12	11	18	41	**64**
Urban Fire/ Structural Fire	3	6	6	26	38	**60**
Mass Transportation Incident	2	8	11	22	41	**45**
Drought	2	6	11	17	34	**38**
Earthquake	1	12	18	36	66	**37**
Land Loss	2	4	6	20	30	**34**
Wildfire	2	0	6	19	25	**29**
Dam/Levee Failure	0	0	0	24	24	**0**
Riverine Flood	0	0	0	20	20	**0**
Landslide	0	1	0	17	18	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Installation of permanent generator in the community hall, PD building and remodeling and refurnishing of kitchen facility to provide meals and food storage in case of public shelter emergency needs						
Action #	19-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Rebuild salt storage facility and purchase plowing (salt) equipment						
Action #	19-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	32

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Ensure road safety during winter events to protect investments.
2024		
2025		
2026		
2027		

Mitigation Action	Conversion of municipal building basement to operations center/shelter						
Action #	19-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	28

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquisition of property on stover cul-de-sac to mitigate infrastructure damage from storm flooding						
Action #	19-04	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	28

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	19-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Public shelter and emergency operation during extreme weather to minimize interruption of essential services.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	19-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Equip existing facilities as safe rooms/shelters						
Action #	19-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		

2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	19-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Green – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Birkenhauer	Frank	Administrator	Administration	fbirkenhauer@greentwp.org
Callos	Triffon	Trustee	Township Trustees	tcallos@greentwp.org
Gemmell	Ray	Emergency Planner	Fire & EMS Department	rgemmell@greentwp.org
Lambing	Joe	Director	Public Services	jlambing@greentwp.org
Williams	Jeff	Fire Marshal	Fire & EMS Department	Jeffw@greentwop.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (66 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Chris House	Yes		3/2/2023, 9:00 am – 12:00 pm
Joe Lambing	Yes		3/3/2023, 9:00 am – 12:00 pm
Jeff Williams	Yes		3/2/2023, 9:00 am – 12:00 pm

Community Profile & Description

Green Township was names after Nathanael Greene, a general in the Revolutionary War. The Township was founded in 1809. Green Township is 27.9 square miles and had a population of 59,914 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash):

- Reemelin Rd. to Haft Rd. by Taylor Creek experiences frequent overland flooding during high rain events requiring residents who attempt to drive over flooded roads to be rescued.
- Harrison Ave. near Springdale Dr. Experiences frequent flooding from Taylor Creek. The culvert near I-74 often cannot handle water. Engineering work was Complete in the area, but it is unknown if the issue has been resolved.
- Homes along Muddy Creek Rd. (and the Muddy Creek) regularly experience basement flooding during high rain events. Residents have requested the County purchase their homes.

Mass Transportation Accident/Incident: Interstate 74 goes through northern Green Township and there is always concern for a mass transportation incident along the interstate.

Green Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Thunderstorm	3	4	14	22	40	**63**
Flash Flood	3	3	6	28	37	**59**
Public Health Emergency	2	9	17	26	52	**55**
Riverine Flood	3	4	6	24	34	**54**
High Wind and Tornado	2	12	13	26	51	**54**
Severe Winter Storm	2	3	14	29	46	**50**
Hazardous Material Incident	2	8	11	24	43	**47**
Extreme Cold Incident	2	4	9	28	41	**45**
Infrastructure and Structural Failure	2	8	11	21	40	**44**
Extreme Heat Incident	2	4	9	25	38	**42**
Earthquake	1	5	7	32	44	**26**
Mass Transportation Incident	1	4	9	24	37	**23**
Civil Disorder/Riot	1	8	6	21	35	**22**
Urban Fire/ Structural Fire	1	5	6	23	34	**21**
Cyber Incident	1	4	9	20	33	**21**
Terrorism/ Active Assailant	1	7	6	20	33	**21**
Land Loss	1	4	6	21	31	**19**
Landslide	1	4	6	19	29	**18**
Wildfire	1	3	6	18	27	**17**
Drought	1	1	5	17	23	**15**
Dam/Levee Failure	0	2	5	29	36	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Reduce flash flooding impacts due to excessive rainfall as the result of increasing number of 100-year storms						
Action #	20-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	27/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Plan to house and shelter a large portion of the township's population in the event of an extreme natural incident (i.e. Tornado or power outage). Natural hazards are significant to Green Township's elderly population, residential structure, and utilities						
Action #	20-02	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	21/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Mass casualty/active shooter preparedness and prevention in local schools						
Action #	20-03	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Police and Fire Training. Updated plans with current information about schools. Updated communications plans, reunification plans, etc. Schools have made updated and current security measures they have hired additional security and safety personnel, police personnel. Police personnel have received additional training in this area.
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate hazardous materials transportation incident on I-74 (4 miles) between mm7 and mm14						
Action #	20-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	See previous comments
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate transportation accidents on I-74 (4 miles) between mm7 and mm14

Action #	20-05	Year Initiated	2018	Current Status	Ongoing	STAPLEE Score	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	See previous comments
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate sewer flooding on Antonius Drive						
Action #	20-06	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Worked with DPW to resolve issue.
2024		
2025		
2026		
2027		

Mitigation Action	Investigate mitigation alternatives at Muddy Creek Rd (3600 Block) to address sewer overflow flooding between Sylved Land and Allview Ct						
Action #	20-07	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Demo affected houses, nearly complete.

2024		
2025		
2026		
2027		

Mitigation Action	Mitigate flooding on Johnson Rd at Haft Rd. Improve flow of stream under I-74 culvert						
Action #	20-08	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	ODOT reworked and improved culverts and overpass, reducing storm water impacts.
2024		
2025		
2026		
2027		

Greenhills – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Kovach	Evonne	Municipal Manager	Administration	ekovach@greenhillsohio.org
Davis	Brenda	Executive Assistant to the Municipal Manager	Administration	bdavis@greenhillsohio.org
Moore	David	Mayor	Village Council	dmoore@greenhillsohio.org
Spaeth	Anthony	Fire Chief	Fire Department	4801@ghfd.org
Kovach	Evonne	Municipal Manager	Administration	ekovach@greenhillsohio.org
Ferdelman	Niel	Police Chief	Police Department	n.ferdelmon@greenhillspd.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (7 Responses)	Yes	Yes		

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Mike Caster	Yes		4/13/2023, 9:00 am – 10:30 am
Brenda Davis	Yes		4/13/2023, 9:00 am – 10:30 am
Neil Ferdelman	Yes		4/13/2023, 9:00 am – 10:30 am
Ryan McEwan	Yes		4/13/2023, 9:00 am – 10:30 am
Evonne Rovach	Yes		4/13/2023, 9:00 am – 10:30 am

Community Profile & Description

Greenhills Village was one of three "Greenbelt Communities" build by the short-lived Resettlement Administration during the 1930s. Greenhills was designed to be surrounded by a "belt" of woodland and natural landscaping. Greenhills Village is 1.25 square miles and had an estimated population of 3,711 and 1,516 total households based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash): Storm water flow is overwhelmed in heavy rains. During concentrated periods of heavy rain, streets and storm sewer systems may become overwhelmed and flood both public and private property. Additionally, the Greenhills Golf Course has a detention basin/swale, which controls storm water runoff in periods of heavy rain.

High Wind and Tornado: Power failures/communication loss between village and community are causes of concern involving tornado and high winds.

Mass Transportation Incident: Frequent accidents and limited transportation routes in and out of town pose an issue to the Village. The Village of Greenhills is bisected by Winton Road, a 4-lane road. An estimated 40,000 to 50,000 cars travel through the Village daily along Winton Road. A large accident has the potential to limit the flow of traffic northbound or southbound to multiple communities. This may limit emergency vehicle travel and commuter travel. Detours have the potential to negatively impact residential side streets.

Infrastructure and Structural Failure: Utility failure concerns are especially pertinent for the Alzheimer Center and Mobilcomm. Mobilcomm, a large-scale supplier of Motorola brand radios and other equipment, operates from the northwest corner of the Village. A 740-foot tower on site provides radio services to the surrounding areas. Malfunction or other failure of this equipment could interrupt or restrict radio communications in the area.

Greenhills Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	2	8	16	24	48	**52**
Public Health Emergency	2	5	12	27	44	**48**
Severe Winter Storm	2	7	9	27	43	**47**
Civil Disorder/Riot	2	5	13	20	38	**42**
Severe Thunderstorm	2	7	11	20	38	**42**
Cyber Incident	2	8	7	17	32	**36**
Earthquake	1	8	15	33	56	**32**
Hazardous Material Incident	1	8	13	22	43	**26**
Extreme Cold Incident	1	4	10	26	40	**24**
Flash Flood	1	4	10	25	39	**24**
Extreme Heat Incident	1	4	10	24	38	**23**
Infrastructure and Structural Failure	1	8	11	19	38	**23**
Mass Transportation Incident	1	4	9	24	37	**23**
Urban Fire/ Structural Fire	1	7	7	23	37	**23**
Terrorism/ Active Assailant	1	5	12	18	35	**22**
Drought	1	4	8	17	29	**18**
Land Loss	1	4	5	19	28	**18**
Dam/Levee Failure	0	0	0	25	25	**0**
Riverine Flood	0	0	0	21	21	**0**
Landslide	0	0	5	17	22	**0**
Wildfire	0	7	5	16	28	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Traffic infrastructure study of Winton Road corridor especially South of Cromwell						
Action #	21-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Installation of box culverts or rain gardens in multiple locations						
Action #	21-02	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct regular maintenance for drainage systems and flood control structures						
Action #	21-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Routine
2024		
2025		
2026		
2027		

Mitigation Action	Protect infrastructure and critical facilities by purchasing generators for key buildings						
Action #	21-04	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Municipal building added in 2020
2024		
2025		
2026		
2027		

Mitigation Action	Establish standards for inspection and management of trees and tree pruning around power lines and drainage systems						
Action #	21-05	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	33

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Ongoing inspections and maintenance
2024		
2025		
2026		
2027		

Mitigation Action	Retrofitting public buildings to prevent wind damage						
Action #	21-06	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	33

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continuous
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	21-07	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	OneCall and AlertHC
2024		

2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	21-08	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Main building and school have generators
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	21-09	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	2019 new plow
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study on winter snow maintenance of older homes						
Action #	21-10	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	No longer needed
2024		
2025		
2026		
2027		

Mitigation Action	Storm water repair grant						
Action #	21-11	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Harrison – City

Participation

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Hamons	Shannon	Director	Economic Development/ Building & Zoning	shamons@harrisonohio.gov
Hursong	William	Fire Chief	Fire Department	wrhursong@harrisonohio.gov
Krupp	Jason	Firefighter/Paramedic	Fire Department	jkrupp@harrisonohio.gov
Leslie	Jim	Director	Public Works	jleslie@harrisonohio.gov
Lindsey	Charles	Police Chief	Police Department	clindsey@harrisonohio.gov
Mains	Mike	Councilmember	City Council	mmains@harrisonohio.gov
Neyer	William	Mayor	City of Harrison	bneyer@harrisonohio.gov
Offill	Corey	Firefighter/Paramedic	Fire Department	coffill@harrisonohio.gov
Reinert	Austin	Firefighter/Paramedic	Fire Department	areinert@harrisonohio.gov
Rimroth	Michael	Fire Lieutenant	Fire Department	mrimroth@harrisonohio.gov
Robben	Andrew	Firefighter	Fire Department	arobben@harrisonohio.gov
Wong	Gordon	Building Official	Building & Zoning	gwong@harrisonohio.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (6 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
William Hursong	Yes		3/2/2023, 9:00 am – 12:00 pm

Community Profile & Description

The City of Harrison was laid out in 1810 named in honor of William Henry Harrison, a decorated general and state legislator and afterward the 9th President of the United States. The City was incorporated in 1850 and became a city in 1981. The City is 4.96 square miles. As of the 2021 American Community Survey 5-Year estimate , the population is 12,842.

Hazard Analysis

Civil Disorder/Riot: The Annual Fourth of July event, Taste of Harrison, and Food Truck Rally are a few events that attract large gatherings.

Dam/Levee Failure: A failure at Brookville Dam would impact the city and township.

Flood (Riverine): Flooding of Whitewater River may impact the area's central infrastructure/businesses and residents.

Flood (Flash): The following roadways (Lynees Avenue, Biddle, Iliff, Broadway, Campbell, and West) are subject to flooding during extended or heavy rain.

Hazardous Materials Incident: Interstate 74 from 0.0 mm to 3.5 mm are especially susceptible to HAZMAT incidents.

Mass Transportation Incident: Interstate 74 is a major corridor susceptible to major transportation incidents.

Infrastructure and Structural Failure: City water and wastewater are affected during utility failure incidents.

Terrorism/Active Assailant: Mass casualty incidents are possible at annual city/township public events, schools, and large businesses.

Harrison City Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Hazardous Material Incident	3	11	12	25	48	**73**
Severe Winter Storm	3	7	6	27	40	**63**
High Wind and Tornado	2	11	17	26	54	**57**
Severe Thunderstorm	3	4	6	20	30	**49**
Public Health Emergency	2	7	9	26	42	**46**
Flash Flood	2	7	6	26	39	**43**
Extreme Cold Incident	2	4	6	28	38	**42**
Extreme Heat Incident	2	4	6	26	36	**40**
Urban Fire/ Structural Fire	2	4	6	25	35	**39**
Land Loss	2	4	6	21	31	**35**
Drought	2	4	6	17	27	**31**
Infrastructure and Structural Failure	1	11	16	21	48	**28**
Earthquake	1	4	11	32	47	**28**
Mass Transportation Incident	1	7	12	26	45	**27**
Dam/Levee Failure	1	4	6	28	38	**23**
Cyber Incident	1	7	11	18	36	**22**
Riverine Flood	1	7	6	23	36	**22**
Terrorism/ Active Assailant	1	7	9	20	36	**22**
Wildfire	1	7	6	20	33	**21**
Civil Disorder/Riot	1	4	6	22	32	**20**
Landslide	1	4	6	19	29	**18**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33

Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Replace existing overhead utilities with underground utilities to eliminate long power outages during extreme weather events						
Action #	22-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	30/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	**Build/establish shelters with generators**						
Action #	22-02	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Update emergency operations plan for City of Harrison and Harrison Township						
Action #	22-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop plan to shelter animals in a disaster						
Action #	22-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	28

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators						
Action #	22-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	20

Annual Project Maintenance

Year	Status	Comments
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	22-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy-out plan for flood prone structures						
Action #	22-07	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	1

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		

2026		
2027		

Mitigation Action	Develop an enhanced county-wide emergency notification communication system						
Action #	22-08	**Year Initiated**	2017	**Current Status**	Archive	**Prioritization Score**	14

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Harrison – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Dole	Rick	Trustee Vice President	Township Trustees	freddole@fuse.net
Hursong	William	Fire Chief	Fire Department	wrhursong@harrisonohio.gov
Krupp	Jason	Firefighter/Paramedic	Fire Department	jkrupp@harrisonohio.gov
Kugler	Kam	Lieutenant/Fire Inspector	Fire Department	ckugler@harrisonohio.gov
Losekamp	Thomas	Trustee President	Township Trustees	tlosekamp@aol.com
Offill	Corey	Firefighter/Paramedic	Fire Department	coffill@harrisonohio.gov
Reinert	Austin	Firefighter/Paramedic	Fire Department	areinert@harrisonohio.gov
Rimroth	Michael	Fire Lieutenant	Fire Department	mrimroth@harrisonohio.gov
Robben	Andrew	Firefighter	Fire Department	arimroth@harrisonohio.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (7 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
William Hursong	Yes		3/2/2023, 9:00 am – 12:00 pm

Community Profile & Description

Harrison Township was founded in 1853 and still retains much of its rural charm and beauty as it did when it began. Harrison Township is 17.8 square miles and had a population of 14,351 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: The Annual Fourth of July event, Taste of Harrison, and Food Truck Rally are a few events that attract large gatherings.

Dam/Levee Failure: A failure at Brookville Dam would impact the city and township.

Flood (Flash): The following roadways (Lynees Avenue, Biddle, Iliff, Broadway, Campbell, and West) are subject to flooding during extended or heavy rain.

Flood (Riverine): Flooding of Whitewater River may impact the area's central infrastructure/businesses and residents.

Hazardous Materials Incident: Interstate 74 from 0.0 mm to 3.5 mm are especially susceptible to HAZMAT incidents.

Mass Transportation Incident: Interstate 74 is a major corridor susceptible to major transportation incidents.

Infrastructure and Structural Failure: City water and wastewater are affected during utility failure incidents.

Terrorism/Active Assailant: Mass casualty incidents are possible at annual city/township public events, schools, and large businesses.

Harrison Township Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Hazardous Material Incident	3	11	12	25	48	**73**
Severe Winter Storm	3	7	6	27	40	**63**
High Wind and Tornado	2	11	17	26	54	**57**
Severe Thunderstorm	3	4	6	20	30	**49**
Public Health Emergency	2	7	9	26	42	**46**
Flash Flood	2	7	6	26	39	**43**
Extreme Cold Incident	2	4	6	28	38	**42**
Extreme Heat Incident	2	4	6	26	36	**40**
Urban Fire/ Structural Fire	2	4	6	25	35	**39**
Land Loss	2	4	6	21	31	**35**
Drought	2	4	6	17	27	**31**
Infrastructure and Structural Failure	1	11	16	21	48	**28**
Earthquake	1	4	11	32	47	**28**
Mass Transportation Incident	1	7	12	26	45	**27**
Dam/Levee Failure	1	4	6	28	38	**23**
Cyber Incident	1	7	11	18	36	**22**
Riverine Flood	1	7	6	23	36	**22**
Terrorism/ Active Assailant	1	7	9	20	36	**22**
Wildfire	1	7	6	20	33	**21**
Civil Disorder/Riot	1	4	6	22	32	**20**
Landslide	1	4	6	19	29	**18**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Replace existing overhead utilities with underground utilities to eliminate long power outages during extreme weather events						
Action #	22-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	30/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Update emergency operations plan for City of Harrison Township						
Action #	23-02	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Mitigation Action	Develop program/method to educate public on mitigate and preparedness						
Action #	23-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	31

Annual Project Maintenance

Year	Status	Comments
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop plan to shelter animals in a disaster						
Action #	23-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	28

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Lincoln Heights – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Edwards	David	Code Enforcement Officer	Building Department	dedwards2007@cinci.rr.com
Hopkins	Rebecca	Village Manager	Administration	rhopkins@vlho.org
Mumphrey	Ruby Kinsey	Mayor	Village Council	rkmumphrey@vlho.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (1 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jeremy Depaoli	Yes		3/15/2023, 8:00 am – 9:30 am
Amos Johnson	Yes		3/15/2023, 8:00 am – 9:30 am
John Key	Yes		3/15/2023, 8:00 am – 9:30 am
Ryan McEwan	Yes		3/15/2023, 8:00 am – 9:30 am
Christopher Williams	Yes		3/15/2023, 8:00 am – 9:30 am

Community Profile & Description

Lincoln Heights Village was founded in the 1920s by property developers as a suburban enclave for black homeowners working in nearby industries. The first attempt at incorporation came in 1939 so the residents could establish their own municipal services. In 1946 Hamilton County allowed Lincoln Heights to incorporate with 10 percent of the original proposal's area. Lincoln Heights Village is 0.76 square miles and had an estimated population of 3,153 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: Like many communities, the village is highly sensitive to political and social justice concerns.

Fire: The housing stock is vulnerable. There are a number of vacant and blighted properties that are vulnerable to fire.

Flood (Flash): Due to the lack of maintenance and upgrades to the catch basins and storm water drains, the village frequently experiences street flooding, basement flooding, etc.

Infrastructure and Structural Failure: If I-75 were to be compromised or inaccessible, the village's streets and other infrastructure would be unable to support a significant amount of traffic. This is due to eroding streets, inadequate catch basins and unmanaged storm water runoff. These issues are currently being addressed.

Mass Transportation Incident: The Village of Lincoln Heights is situated to the immediate east of I-75, across from GE in Evendale.

Public Health Emergency: There is a healthcare facility in the village that has been identified as a point of distribution for vaccination disbursement. As such, village residents may be exposed to people who have been affected by airborne or infections when exposed people come for their medications.

*The population consists of a significant number of elderly people residing in substandard housing with limited access to transportation and other resources. While the village attempts to know who and where these residents reside, the village would be depleted of resources if a major disaster situation occurred.

Land Loss (i.e. Sinkhole/Karst/ Subsidence Erosion): The village has some depressions forming on streets due to lack of maintenance. The village is addressing these as funding becomes available.

Lincoln Heights Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Winter Storm	3	4	9	28	41	**64**
High Wind and Tornado	2	8	16	25	49	**53**
Hazardous Material Incident	2	8	11	25	44	**48**
Extreme Cold Incident	2	4	9	28	41	**45**
Extreme Heat Incident	2	4	9	26	39	**43**
Severe Thunderstorm	2	7	11	21	39	**43**
Earthquake	1	8	13	31	52	**30**
Public Health Emergency	1	7	11	25	43	**26**
Terrorism/ Active Assailant	1	7	10	20	37	**23**
Infrastructure and Structural Failure	1	7	9	20	36	**22**
Dam/Levee Failure	1	2	6	27	35	**22**
Flash Flood	1	4	5	26	35	**22**
Mass Transportation Incident	1	3	9	23	35	**22**
Civil Disorder/Riot	1	4	9	20	33	**21**
Urban Fire/ Structural Fire	1	3	6	23	32	**20**
Land Loss	1	1	5	20	26	**17**
Cyber Incident	1	1	4	18	23	**15**
Drought	1	4	3	16	23	**15**
Wildfire	1	0	1	18	19	**13**
Riverine Flood	0	4	5	22	31	**0**
Landslide	0	0	5	19	24	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66

High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Retrofitting and reinforce the Municipal Building for future hazards						
Action #	24-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to understand subsidence issues in the Village						
Action #	24-02	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	C.T. Consultant DIC study
2024		
2025		
2026		
2027		

Mitigation Action	Conduct tree trimming and removal to address interference with utility/power lines						
Action #	24-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Duke is doing it
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	24-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	New School
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification system						
Action #	24-05	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	21

Annual Project Maintenance

Year	Status	Comments
2023	Complete	Robo call list
2024		
2025		
2026		
2027		

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels						
Action #	24-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Water work/MSD Street Development
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators						
Action #	24-07	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	School Health Center
2024		
2025		
2026		

2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	24-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	New Truck Slat in progress
2024		
2025		
2026		
2027		

Mitigation Action	Acquire training, equipment and resources to handle small hazardous materials spills						
Action #	24-09	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	W.F.D
2024		
2025		
2026		
2027		

Mitigation Action	Acquire storage and organizational equipment for municipal facilities						
Action #	24-10	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Lincoln Height
2024		
2025		
2026		
2027		

Mitigation Action	Remove Fuel Tanks at Municipal Site						
Action #	34-11	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Lincoln Heights
2024		
2025		
2026		
2027		

Lockland – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Wehmeyer	Douglas	Fire Chief	Fire Department	dwehmeyer@locklandoh.org
Blum	Krista	Village Administrator	Administration	Kblum@locklandoh.org
Brock	Eric	Director	Public Works	ebrock@locklandoh.org
Mason	Mark	Mayor	Village Council	mmason@locklandoh.org
Bundren	Chris	Police Chief	Police Department	cbundren@locklandoh.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (2 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Eric Brock	Yes		3/1/2023, 9:00 am – 12:00 pm
Krista Brum	Yes		3/1/2023, 9:00 am – 12:00 pm
Chris Bundren	Yes		3/1/2023, 9:00 am – 12:00 pm
Douglas Wehmeyer	Yes		3/1/2023, 9:00 am – 12:00 pm

Community Profile & Description

Lockland's development was the direct result of its location on the Miami-Erie Canal. Following construction of four locks on the canal, the community was plotted in 1828 by Nicholas Longworth and Lewis Howell. Lockland was incorporated in 1849. Lockland Village is 1.23 square miles and had an estimated population of 3,495 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: Proximity to the City of Cincinnati poses a possible threat to civil disorder/riot.

Flood (Flash): Wyoming and Elm (railroad track) and West Forrer (200 block) are areas vulnerable to flooding.

Hazardous Materials Incident: Railroad, I-75 (North or South), and Pilot Chemical Corporation (606 Shepherd Avenue) are all potential concerns for hazardous materials release.

Mass Transportation Incident: Railroad and I-75 (North and South) are potentially vulnerable to major transportation accidents.

Terrorism/Active Assailant: Proximity to General Electric poses a terrorism threat. An incident or accident on I-75 or a railroad incident could result in a serious mass casualty incident.

Infrastructure and Structural Failure: The water distribution system is potentially vulnerable to utility failure.

Lockland Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Mass Transportation Incident	3	12	16	28	56	**84**
Hazardous Material Incident	3	12	14	27	53	**80**
Public Health Emergency	3	12	12	27	51	**77**
Infrastructure and Structural Failure	3	12	11	21	44	**68**
Severe Winter Storm	3	4	12	28	44	**68**
Flash Flood	3	4	12	25	41	**64**
Urban Fire/ Structural Fire	3	7	8	23	38	**60**
High Wind and Tornado	2	12	15	25	52	**55**
Severe Thunderstorm	3	4	11	19	34	**54**
Terrorism/ Active Assailant	2	12	15	21	48	**52**
Extreme Cold Incident	2	8	11	25	44	**48**
Extreme Heat Incident	2	7	11	23	41	**45**
Landslide	2	11	5	20	36	**40**
Earthquake	1	12	15	33	60	**34**
Riverine Flood	1	5	12	26	43	**26**
Civil Disorder/Riot	1	8	11	21	40	**24**
Cyber Incident	1	11	6	19	36	**22**
Drought	1	5	8	18	31	**19**
Dam/Levee Failure	0	5	10	28	43	**0**
Land Loss	0	11	5	21	37	**0**
Wildfire	0	5	8	20	33	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Address erosion issue at the Municipal Building on the southside of the property to protect critical infrastructure and the bridge over West of the Mill Creek						
Action #	25-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	34/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct study to determine hazardous materials coming through the Village from railroad and Interstate 75						
Action #	25-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Hazard Material Survey (RR) in progress.
2024		
2025		
2026		
2027		

Mitigation Action	Identify existing facilities as safe rooms/shelters						
Action #	25-03	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	29

Annual Project Maintenance

Year	Status	Comments
2023	Complete	TH Basement, Rec Hall, School District.
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	25-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Purchasing 2023
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options						
Action #	25-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continuous review and repair
2024		
2025		

2026		
2027		

Mitigation Action	Conduct an engineering study on the Lockland 'tunnel'						
Action #	25-06	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Phase SI-75 through the Valley in Tunnel
2024		
2025		
2026		
2027		

Mitigation Action	Implement industrial site buffering						
Action #	25-07	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Loveland – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Bailey	Kathy	Mayor	City Council	bailey@lovelandoh.gov
Frye	Jon	Deputy Fire Chief	Loveland-Symmes Fire Department	jfrye@lsfd.org
Huber	Otto	Fire Chief, Deputy Safety Director	Loveland-Symmes Fire Department	ohuber@lsfd.org
Kennedy	Dave	City Manager	Administration	dkennedy@lovelandoh.gov
Klopfenstein	Cindy	City Engineer/ Floodplain Admin.	Public Works	cklopfenstein@lovelandoh.gov
Wisby	Scott	Director	Public Works/Parks & Recreation	swisby@lovelandoh.gov
Gregory	Harold	Deputy Fire Chief	Fire Department	

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (39 Responses)	Yes	Yes	Yes	

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jon Frye	Yes		3/1/2023, 1:00 pm – 4:00 pm
Harold Gregory	Yes		3/1/2023, 1:00 pm – 4:00 pm

Community Profile & Description

The City of Loveland is a City in Hamilton, Clermont, and Warren counties. Once a busy railroad town, the City of Loveland is now a major stop along the Little Miami Scenic Trail. The City was named after James Loveland, who operated a general store and post office near railroad tracks downtown. It was incorporated as a village in 1876 and incorporated as a city in 1961. The City is 5.0 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 9,645.

Hazard Analysis

Fire and Hazardous Materials Incident: Vulnerable areas include Industrial Park located off Union Cemetery. An active railroad track runs through the center of the city and downtown area.

Flood (Flash): Street flooding on Riverside Drive and Karl Brown Way occurs due to high water in the LMR. Flooding of streets in the Heights area has occurred due to urban flooding and insufficient storm sewer system.

Flood (Riverine): The city is bisected by the Little Miami River (LMR). The LMR and major tributaries have identified floodplains, including the city's downtown area.

Landslide: Slips have occurred on Broadway St., Riverside Dr., Butterworth Rd., Glen Lake Dr., and Hidden Creek Park.

Mass Transportation Incident: The railroad runs through the city, posing an elevated risk for railroad incidents. The West Loveland Avenue Bridge connects Hamilton County to Warren and Clermont Counties and carries over 20,000 vpd.

Infrastructure and Structural Failure: The city operates its own drinking water system, including 3 wells, a treatment plant, 7 water storage tanks, and distribution piping. The city has 3 Westera Water works and emergency interconnections for water (Clermont Co. and GCWW).

Loveland Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Winter Storm	3	4	12	30	46	**71**
Flash Flood	3	4	9	29	42	**65**
Riverine Flood	3	4	9	26	39	**61**
Severe Thunderstorm	3	4	12	23	39	**61**
Dam/Levee Failure	2	4	11	29	44	**48**
High Wind and Tornado	2	4	12	26	42	**46**
Hazardous Material Incident	2	4	11	24	39	**43**
Mass Transportation Incident	2	4	9	23	36	**40**
Public Health Emergency	2	5	6	25	36	**40**
Extreme Heat Incident	2	1	4	24	29	**33**
Infrastructure and Structural Failure	2	1	7	19	27	**31**
Landslide	2	1	4	19	24	**28**
Earthquake	1	2	3	32	37	**23**
Extreme Cold Incident	1	1	5	27	33	**21**
Land Loss	1	1	4	21	26	**17**
Terrorism/ Active Assailant	1	1	6	19	26	**17**
Civil Disorder/Riot	1	1	4	19	24	**16**
Cyber Incident	1	1	4	16	21	**14**
Urban Fire/ Structural Fire	1	0	0	20	20	**13**
Drought	1	1	0	15	16	**11**
Wildfire	0	0	0	15	15	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66

High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Hire a consultant to develop downtown-level and city-wide master plan including land-use, resiliency, sustainability, etc.						
Action #	26-01	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	33

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy – out plan for flood prone structures						
Action #	26-02	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels						
Action #	26-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues						
Action #	26-04	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Mitigation Action	Clean up dumping along railroad lines						
Action #	26-05	**Year Initiated**	2007	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators for smaller jurisdictions and mobile home parks						
Action #	26-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Madeira – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Ouhterson	Stephen	Fire Chief	Madeira & Indian Hill Joint Fire District	oughtersons@mihjfd.org
Ballweg	David	Building Inspector	Building Department	buildingdept@madeiracity.com
Caceres	Francisco	Fire Captain	Madeira & Indian Hill Joint Fire District	caceresf@mihjfd.org
Disbennett	Andy	Staff Member	Public Works	parks@madeiracity.com
Fiedler	William C.	Chief Building Official	Building Department	buildingdept@madeiracity.com
Lack	Tom	Supervisor	Public Works	publicworks@madeiracity.com
Lynch	John	Fire Captain	Madeira & Indian Hill Joint Fire District	lynchj@mihjfd.org
Lowndes	Kristie	Assistant Treasurer	Finance Department	klowndes@madeiracity.com
Norton-Smith	Michael	City Manager	Administration	mnorton-smith@madeiracity.com
Schaefer	David	Police Chief	Police Department	dschaefer@madeiracity.com
Thompson	Lori	Assistant City Manager	Administration	lthompson@madeiracity.com
Berson	Dave	Assistant Superintendent	Madeira City Schools	dberson@madeiracityschools.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (16 Responses)	Yes	No	No	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Francisco Caceres	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

The City of Madeira was laid out in 1871. The City is 3.38 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 9,397.

Hazard Analysis

Civil Disorder/Riot: There is minimal risk of civil disorder/riot in the city.

Cyber Incident: Internal systems for both County and City IT infrastructure are at risk of cyberattack.

Earthquake: While this is a county-wide risk, seismic activity poses a threat to the cell tower at McDonalds Commons.

Extreme Cold Incident: This is a county-wide risk. There are municipal buildings that are designated shelters for extreme cold events.

Extreme Heat Incident: This is a county-wide risk. There are municipal buildings that are designated shelters for extreme heat events.

Fire: The city has two nursing homes and a new Senior facility that are of concern due to the vulnerable population living in those facilities. Camargo Road is at risk of fire hazards.

Flood (Flash): Urban flooding occasionally occurs in the city. Notably, in 2001, a 500-year incident occurred. Urban flooding would result in damage to existing structures.

Hazardous Materials Incident: There are several locations that are vulnerable to hazardous materials release. They include: Madeira Swimming Club, 4 Formations on Camargo, Kenwood Hills Cabana Club, and CBT Switch Section at Miami/Shawnee Run.

High Wind and Tornado: Madeira Mobile Home Park is a location vulnerable to damages from tornados and high winds.

Infrastructure and Structural Failure: Camargo Culverts, old watermains, Camargo Bridge at EUCLID, Shawnee Run Bridge, and Miami Culverts are structures that are potentially vulnerable to infrastructure failure. A number of utilities are at risk of failure, such as GCWW, Duke, CBT, Spectrum, and Indian Hills Water Works.

Landslide: There are several areas that are at risk of landslide. Thes areas at risk of landslide include: Camargo Canyon, Madeira Pines, West end of Vista Ridge, south end of Maple Ridge, and OAR Vista.

Mass Transportation Incident: There are many transportation areas within the city that are prone to incidents. These areas prone to incidents include: train/rail line, I-71, and Montgomery Rd. School buses are also of great concern.

Public Health Emergency: Schools and nursing homes are most vulnerable during public health emergencies.

Terrorism/Active Assailant: There are many events that could attract terrorism because of the high volume of attendees. These events include: street dance, Independence Day, Art Fair, Easter Egg Scramble, bike race, high school events, homecoming parade, and park events.

Wildfire: Parks and wooded areas are minimally vulnerable to wildfire.

Madeira Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	12	18	28	58	**86**
Hazardous Material Incident	3	12	15	26	53	**80**
Severe Winter Storm	3	5	15	31	51	**77**
Flash Flood	3	11	9	30	50	**76**
Public Health Emergency	3	8	13	28	49	**75**
Extreme Cold Incident	3	7	12	28	47	**72**
Severe Thunderstorm	3	8	15	24	47	**72**
Infrastructure and Structural Failure	3	9	14	23	46	**71**
Landslide	3	6	9	22	37	**59**
Land Loss	3	5	7	24	36	**57**
Riverine Flood	3	5	6	24	35	**56**
Urban Fire/ Structural Fire	2	4	12	26	42	**46**
Terrorism/ Active Assailant	2	11	9	21	41	**45**
Extreme Heat Incident	2	3	12	25	40	**44**
Cyber Incident	2	7	12	19	38	**42**
Mass Transportation Incident	2	7	7	24	38	**42**
Earthquake	1	12	16	35	63	**36**
Dam/Levee Failure	1	7	6	28	41	**25**
Drought	1	8	9	18	35	**22**
Wildfire	1	4	6	20	30	**19**
Civil Disorder/Riot	1	1	6	21	28	**18**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Improve the education of the public by using social media, websites, education materials for festivals and school visits to better prepare residents during most types of emergencies						
Action #	27-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Replace or repair culvert at Camargo Road						
Action #	27-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Increase cyber security capabilities						
Action #	27-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	27-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation options						
Action #	27-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		

2026		
2027		

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels						
Action #	27-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct engineering impact studies on flood mitigation						
Action #	27-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues

Action #	27-08	Year Initiated	2013	Current Status	Ongoing	Prioritization Score	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Re-engineer Dawson Road						
Action #	27-09	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	8

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and business using natural gas						
Action #	27-10	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	32

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	

2024		
2025		
2026		
2027		

Mariemont – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Ertel	Chris	Village Engineer	Administrative	chris.ertel@cincinnati-oh.gov
Copeland	Dan	Assistant Fire Chief	Fire Department	dcopeland@mariemont.org
Brown	Bill	Mayor	Village Council	mayor@mariemont.org
Scherpenberg	John	Supervisor	Maintenance Department	servdeptsuper@gmail.com
Uhrig	Allison	Village Administrator	Administrative	auhrig@mariemont.org
Van Pelt	Joanee	Village Administrator	Administrative	joanee@mariemont.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (9 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Dan Copeland	Yes		3/2/2023, 9:00 am – 12:00 pm
Chris Ertel	Yes		3/1/2023, 9:00 am – 12:00 pm
Jim Henderson	Yes		3/2/2023, 9:00 am – 12:00 pm

Community Profile & Description

Mariemont Village was founded by Mary Emery and planned by John Nolen and 25 leading American architects. Emery and other dignitaries broke ground on April 25, 1923. Mariemont Village is 0.89 square miles and had an estimated population of 3,497 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: Due to the village's proximity to the City of Cincinnati and the densely populated surrounding areas, the possibility of civil unrest or major incident is a concern for the village.

Drought/Flooding: The "South 80" area is located in the village. Contractors farm next to the Little Miami River.

Flood (Flash): Most notably in 2013, several homes flooded on Homewood Road. There are a couple sections of the village that are susceptible to roadway flooding. The roads susceptible to flooding include: Settle Rd, Wooster Pike, Rt. 50 (in between Oak St. and Plainville Rd), as well as the municipal building that houses village administration, police and fire departments.

Hazardous Materials Incident: The Norfolk Southern Railroad passes through the village.

Landslide: The Whiskey Creek area behind Mariemont Ave. (6600 block) has land erosion that is impacting residences that sit above the creek.

Mass Transportation Incident: US 50, which is used by many trucks, is at an increased risk for a major transportation incident.
Public Health Emergency: The village is designated POD site.

Terrorism/Active Assailant: Town meetings event, Fourth of July event, Memorial Parade, Taste of Mariemont, and Craft Show on Wooster Pike are all potential targets of violent mass casualty incidents.

Wildfire: "South 80" Gardens and Dog Wood Park are vulnerable to wildfire, and the lack of water supply presents an added risk.

Mariemont Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	12	17	31	60	**89**
Severe Winter Storm	3	11	17	32	60	**89**
Riverine Flood	3	12	17	28	57	**85**
High Wind and Tornado	3	12	17	25	54	**81**
Severe Thunderstorm	3	11	17	25	53	**80**
Land Loss	3	12	11	24	47	**72**
Landslide	3	11	11	23	45	**69**
Hazardous Material Incident	3	8	8	23	39	**61**
Extreme Cold Incident	2	8	14	29	51	**54**
Extreme Heat Incident	2	8	14	27	49	**53**
Civil Disorder/Riot	2	8	17	23	48	**52**
Public Health Emergency	2	8	9	27	44	**48**
Infrastructure and Structural Failure	2	8	13	20	41	**45**
Wildfire	2	8	6	19	33	**37**
Earthquake	1	8	13	32	53	**31**
Urban Fire/ Structural Fire	1	8	8	24	40	**24**
Terrorism/ Active Assailant	1	9	10	20	39	**24**
Dam/Levee Failure	1	4	6	27	37	**23**
Mass Transportation Incident	1	4	8	25	37	**23**
Cyber Incident	1	4	11	20	35	**22**
Drought	1	5	9	19	33	**21**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66

High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Flood prevention of Whiskey Creek						
Action #	28-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	26/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Reinforce hillside slippage along Mariemont Ave.						
Action #	28-02	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Soil North wall installed in 2018 behind 6610 Mariemont Ave.
2024		
2025		
2026		
2027		

Mitigation Action	Expand stormwater drainage under public roads to reduce flooding						
Action #	28-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Settle Rd. Stormwater detention structure installed in 2018 Homewood Rd new drainage installed in 2019.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	28-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Tie needed for generators to provide heat or colling if power goes out.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	28-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Equip existing facilities as safe rooms/shelters						
Action #	28-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	28-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		

2027		

Mitigation Action	Establish mutual aid response agreements within the county						
Action #	28-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills						
Action #	28-09	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Draft building ordinances to ensure safe building standards						
Action #	28-10	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop safety standards and emergency plans						
Action #	28-11	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Participants are working on this action in workshop (participating in workshop).
2024		
2025		
2026		
2027		

Miami – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Rininger	Jack	Trustees President	Township Trustees	auldbrig@oal.com
Galbraith	Sissy	Administrative Assistant	Miami Township	sissy.galbraith@miamitownship.org
Hughes	Jim	Safety Services	Township	
Lacey	Brien	Fire Chief	Township	brien.lacey@miamitownship.org
Street	Rob	Assistant Fire Chief	Township	Rob.street@miamitownship.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (10 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Sissy Galbraith	Yes		3/2/2023, 9:00 am – 12:00 pm
Jim Hughes	Yes		3/2/2023, 9:00 am – 12:00 pm
Brien Lacey	Yes		3/2/2023, 9:00 am – 12:00 pm
Robert Street	Yes		3/2/2023, 9:00 am – 12:00 pm
Jack Rininger	Yes		3/2/2023, 9:00 am – 12:00 pm

Community Profile & Description

Miami Township was named for its location at the point where the Great Miami River flows into the Ohio River and was founded in 1791. Miami Township is an interesting combination of hills and valleys bordered on two sides by the Ohio and Great Miami Rivers. Miami Township is 23.8 square miles and had a population of 15,907 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Dam/Levee Failure: Aston Oaks Lake poses a threat to the township.

Flood (Flash): Wesselman Road and Jordan Road are at risk of flash flooding.

Flood (Riverine): Homes and roadways along East Miami River Rd are at risk of flooding.

Hazardous Materials Incident: Industries near Brower Road are susceptible to HAZMAT incidents.

Terrorism/Active Assailant: Education-related campuses and facilities are susceptible to violent mass casualty incidents.

Wildfire: Shawnee and Mitchel Park are susceptible to wildfires.

Miami Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Hazardous Material Incident	3	12	15	25	52	**78**
Flash Flood	3	9	7	30	46	**71**
Riverine Flood	3	9	7	27	43	**67**
Severe Thunderstorm	3	7	13	21	41	**64**
Public Health Emergency	2	11	11	29	51	**54**
High Wind and Tornado	2	5	10	25	40	**44**
Terrorism/ Active Assailant	2	8	10	21	39	**43**
Urban Fire/ Structural Fire	2	4	8	24	36	**40**
Infrastructure and Structural Failure	2	5	10	20	35	**39**
Cyber Incident	2	0	12	21	33	**37**
Wildfire	2	4	5	20	29	**33**
Severe Winter Storm	1	4	11	28	43	**26**
Extreme Cold Incident	1	4	8	27	39	**24**
Extreme Heat Incident	1	4	8	25	37	**23**
Mass Transportation Incident	1	4	8	23	35	**22**
Dam/Levee Failure	1	3	5	26	34	**21**
Earthquake	1	0	5	29	34	**21**
Land Loss	1	1	10	21	32	**20**
Landslide	1	1	8	19	28	**18**
Civil Disorder/Riot	1	0	5	22	27	**17**
Drought	1	0	5	17	22	**14**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Add generators to Senior Center, Town Hall, and maintenance facility						
Action #	29-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	39/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Install waterlines in areas where public water is not currently provided						
Action #	29-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023		
2024		
2025		
2026		
2027		

Montgomery – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Dobrozsi	Chris	Council Member	City Council	cdobrozsi@ci.montgomery.oh.us
Riblet	Brian	City Manager	Administration	briblet@ci.montgomery.oh.us
Roblero	Tracy	Assistant City Manager	Administration	troblero@montgomeryohio.org
Vonden Benken	Greg	Assistant Police Chief	Police Department	gvondenbenken@montgomeryohio.org
Wright	Paul	Fire Chief	Fire Department	pwright@montgomeryohio.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (26 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Paul Wright	Yes		3/3/2023, 1:00 pm – 4:00 pm

Community Profile & Description

The City of Montgomery was settled in 1796, making it one of the oldest settlements in Hamilton County. The City of Montgomery was an affluent commuter town in the 1960's for people working in Cincinnati. The City is 5.30 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 10,796.

Hazard Analysis

Hazardous Materials Incident: Proximity to I-71 and I-275 has potential for transportation accidents involving hazardous materials.

Mass Transportation Incident: Interstate I-71, I-275, Ronald Regan Highway and US 22 all transect the community. A major incident on these roadways create grid lock.

Public Health Emergency: Bethesda North, is both an asset to address public health concerns, but may also attract residents seeking care during a health crisis.

Montgomery Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	12	18	28	58	**86**
Public Health Emergency	3	8	15	28	51	**77**
Severe Winter Storm	3	6	12	27	45	**69**
Flash Flood	3	8	7	26	41	**64**
Hazardous Material Incident	3	7	6	23	36	**57**
Mass Transportation Incident	3	0	10	24	34	**54**
Severe Thunderstorm	3	0	12	20	32	**52**
Urban Fire/ Structural Fire	3	2	6	23	31	**50**
Extreme Cold Incident	2	3	14	27	44	**48**
Cyber Incident	2	7	16	20	43	**47**
Extreme Heat Incident	2	3	14	25	42	**46**
Drought	2	8	11	18	37	**41**
Earthquake	1	12	18	36	66	**37**
Terrorism/ Active Assailant	2	6	6	19	31	**35**
Civil Disorder/Riot	1	7	7	24	38	**23**
Infrastructure and Structural Failure	1	7	8	20	35	**22**
Land Loss	1	5	6	21	32	**20**
Landslide	1	5	6	19	30	**19**
Riverine Flood	1	5	0	21	26	**17**
Wildfire	1	0	3	15	18	**12**
Dam/Levee Failure	0	0	0	25	25	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Community education program targeted and strategized to specific groups of residents for emergency preparedness based on their life situation (elderly, special needs, and group homes						
Action #	30-01	**Year Initiated**	2026	**Current Status**	New	**STAPLEE+E Score**	31/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Institute public health awareness and prevention initiative to ensure the spread of illness and disease is mitigated/prevented						
Action #	30-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continued Pandemic
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	30-03	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	21

Annual Project Maintenance

Year	Status	Comments
2023	Complete	They have subscribed to CodeRed and enrolled residents in Smart 911.
2024		
2025		
2026		
2027		

Mitigation Action	Harden bridges						
Action #	30-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Not Complete due to the lack of funding
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to evaluate the structural integrity of Bethesda Hospital						
Action #	30-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Not Complete due to lack of funding
2024		
2025		
2026		

2027		

Mitigation Action	Obtain a GIS license to better map the community						
Action #	30-06	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	New plan and maps on computer in early 2023.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	30-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	2

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Lack of funds
2024		
2025		
2026		
2027		

Mitigation Action	Acquire Gator Bags						
Action #	30-08	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	50

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mt. Healthy – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Bauer	Scott	City Manager	Administration	sbauer@mthealthy.org
Lawson	Steve	Fire Chief	Fire Department	slawson@mthealthy.org
Wolf	James	Mayor	City Council	jwolf@mthealthy.org
Westrich	Justin	Public Works	City Council	jwestrich@mthealthy.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (7 Responses)	Yes	No	No	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Scott Bauer	Yes		3/1/2023, 9:00 am – 12:00 pm
Steve Lawson	Yes		3/1/2023, 9:00 am – 12:00 pm
Justin Westrich	Yes		3/1/2023, 9:00 am – 12:00 pm

Community Profile & Description

The City of Mount Healthy was founded in 1817 as the village of Mount Pleasant. In 1850, the village renamed itself "Mount Healthy" following a cholera epidemic, where many of the citizens survived, while those in other surrounding territories did not. The village of Mount Healthy became a city in 1951. The City is 1.41 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 6,976.

Hazard Analysis

Dam/Levee Failure: There is a small dam at the end of Rugg St. that may adversely impact residents in the event of a failure.

Mass Transportation Incident: Ronald Reagan Highway (SR 126) is a major corridor that connects the western and central portions of the county and runs across the southern border of Mt. Healthy.

Mt. Healthy Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	4	10	24	38	**60**
Severe Winter Storm	3	3	9	24	36	**57**
Extreme Cold Incident	3	1	9	24	34	**54**
Extreme Heat Incident	3	1	9	22	32	**52**
Severe Thunderstorm	3	3	9	17	29	**47**
Infrastructure and Structural Failure	3	3	9	15	27	**45**
Urban Fire/ Structural Fire	3	0	6	20	26	**43**
Flash Flood	2	1	3	23	27	**31**
Cyber Incident	3	1	0	15	16	**28**
Civil Disorder/Riot	2	1	0	17	18	**22**
Terrorism/ Active Assailant	2	0	3	15	18	**22**
Dam/Levee Failure	1	1	0	24	25	**16**
Public Health Emergency	1	0	0	22	22	**14**
Mass Transportation Incident	1	0	0	19	19	**13**
Hazardous Material Incident	1	0	0	18	18	**12**
Land Loss	1	0	0	18	18	**12**
Landslide	1	0	0	16	16	**11**
Wildfire	1	0	0	15	15	**10**
Drought	0	1	0	15	16	**0**
Earthquake	0	0	0	27	27	**0**
Riverine Flood	0	1	0	20	21	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Action	Purchase generators for extreme weather conditions and install them in municipality, schools, and churches						
Action #	31-01	**Year Initiated**	2024-2025	**Current Status**	New	**STAPLEE+E Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators						
Action #	31-02	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	31-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Require manufactured homes to have tie-downs						
Action #	31-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023		
2024		
2025		
2026		
2027		

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills						
Action #	31-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		

2026		
2027		

Newtown – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Kobasuk	Mark	Mayor	Village Council	mkobasuk@newtownohio.gov
McBreen	Shawn	Police Lieutenant	Police Department	smcbreen@villageofnewtown.com

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (2 Responses)	Yes	No	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Shawn McBreen	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

Newtown Village was settled in 1792 under the name of Mercersburg. The name was changed before the village was incorporated in 1901. Newtown Village is 2.73 square miles and had an estimated population of 2,679 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash): Flash flooding from McCullough's Run is a concern to the village.

Flood (Riverine): The village experienced flooding (water backup) in 1997. Flooding of the Little Miami River and McCullough's Run are of concern to the village. The Village also experienced flooding in the spring of 2018. Multiple homes and businesses were damaged as a result of these floodings.

Landslide: The village has a low risk for landslides.

Mass Transportation Incident: SR 32 has considerable truck traffic and is vulnerable to major transportation accidents.

Infrastructure and Structural Failure: Powerline failures and damages are the primary concern for the village.

Newtown Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Winter Storm	3	10	16	28	54	**81**
Severe Thunderstorm	3	11	16	21	48	**73**
Flash Flood	2	11	16	29	56	**59**
Public Health Emergency	2	12	16	27	55	**58**
Riverine Flood	2	11	16	26	53	**56**
Hazardous Material Incident	2	11	16	23	50	**53**
High Wind and Tornado	2	8	16	24	48	**52**
Extreme Cold Incident	2	4	16	27	47	**51**
Extreme Heat Incident	2	4	16	25	45	**49**
Infrastructure and Structural Failure	2	7	16	22	45	**49**
Urban Fire/ Structural Fire	2	6	6	24	36	**40**
Cyber Incident	2	9	6	19	34	**38**
Dam/Levee Failure	1	12	16	31	59	**34**
Mass Transportation Incident	1	4	14	26	44	**26**
Terrorism/ Active Assailant	1	7	12	21	40	**24**
Landslide	1	6	11	21	38	**23**
Civil Disorder/Riot	1	4	9	23	36	**22**
Land Loss	1	6	6	23	35	**22**
Drought	1	4	12	18	34	**21**
Wildfire	1	5	6	19	30	**19**
Earthquake	0	12	16	34	62	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Improvement to McCullough Run Retaining Wall to prevent flooding						
Action #	32-01	**Year Initiated**	2022	**Current Status**	New	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Currently getting proposals from engineers on McCullogh retains and direct stormwater.
2024		
2025		
2026		
2027		

Mitigation Action	Inventory and identify equipment needed for disasters						
Action #	32-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	32

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Will continue to improve equipment.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification system						
Action #	32-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Newtown work in conjunction with Hamilton County Alert Notification.

2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	32-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Establish mutual aid response agreements within the county						
Action #	32-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continue mutual aid agreements
2024		
2025		
2026		
2027		

North Bend – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Bownner	Joe	Vice Mayor	Village Council	jbownner.northbend@fuse.net
Kramer	Marilyn	Deputy Clerk	Administration	village@fuse.net
Romweber	Fran	Councilwoman	Village Council	fromweber.northbend@fuse.net
Sammons	Doug	Mayor	Village Council	dsammons.northbend@fuse.net

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (4 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Fran Romweber	Yes		3/2/2023, 9:00 am – 12:00 pm

Community Profile & Description

North Bend Village was founded in 1789 and incorporated as a village in 1845. North Bend was named for its location where the Ohio River meanders to the north. North Bend Village is 1.15 square miles and had an estimated population of 1,056 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash): River Road (US 50), between Shady Lane and St. Anne's, is susceptible to flash flooding. The sidewalks on US 50 are deteriorating because of runoff from the hills, which is constant. The corner of St. Anne's and US 50 has a dangerous gully, and could result in accidents. ODOT will be contacted to address this issue.

Hazardous Materials Incident: Indiana Railroad and other railroad companies travel through North Bend, which creates an increased risk for hazardous materials accidents and spills.

High Wind and Tornado: The many dead trees in the village have the potential to do severe property damage, injuries/fatalities, and cause road blockage.

Landslide: In North Bend, there is potential for landslides between St. Anne's and Shady Lane; and again from Shady Lane East to the village landline before Addyston. The topography of North Bend makes the village vulnerable to landslides.

Mass Transportation Incident: US 50, which is used by many trucks, is at an increased risk for a major transportation incident. CSX Railroad also travels through North Bend.

Severe Thunderstorm: High winds with the potential for toppled trees is the primary concern.

Severe Winter Storm: Although the village and utilities trim trees to mitigate damage to power lines, there are thousands of dead trees due to ash disease. These dead trees pose a risk for increased utility and property damages in the event of a major ice storm or high wind incident.

Land Loss (i.e. Sinkhole/Karst/ Subsidence Erosion): The village has experienced sinkholes on US 50 between St. Anne's and Shady Lane. The maintenance department and ODOT address these issues, as needed.

North Bend Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Hazardous Material Incident	3	12	13	27	52	**78**
Flash Flood	3	8	13	30	51	**77**
Riverine Flood	3	8	12	25	45	**69**
High Wind and Tornado	2	12	18	27	57	**60**
Severe Winter Storm	2	7	10	28	45	**49**
Severe Thunderstorm	2	7	13	22	42	**46**
Public Health Emergency	2	2	13	26	41	**45**
Landslide	2	8	7	20	35	**39**
Drought	2	3	9	18	30	**34**
Extreme Cold Incident	1	5	12	29	46	**27**
Dam/Levee Failure	1	4	12	28	44	**26**
Extreme Heat Incident	1	5	12	27	44	**26**
Land Loss	1	8	7	24	39	**24**
Wildfire	1	5	7	20	32	**20**
Terrorism/ Active Assailant	1	4	5	18	27	**17**
Civil Disorder/Riot	0	0	7	21	28	**0**
Cyber Incident	0	3	10	20	33	**0**
Earthquake	0	7	18	36	61	**0**
Infrastructure and Structural Failure	0	11	13	23	47	**0**
Mass Transportation Incident	0	0	5	21	26	**0**
Urban Fire/ Structural Fire	0	5	5	23	33	**0**

**Normalized to 100*

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Development of 14 acres Riverfront property in North Bend						
Action #	33-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Create a Riverview Park off Harbor Road in North Bend, on newly purchased land from the Village of Cleves						
Action #	33-02	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate and address issue at the culvert on US 50 and St. Anne						
Action #	33-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Discrepancy on who owned the land – whose responsibility it belongs- continually addressed repair sinkholes- wrote grants all areas – always with permission from Genesee Wyoming RR who owns the land.
2024		
2025		
2026		
2027		

Mitigation Action	Tree removal of dead trees from Ash virus						
Action #	33-04	**Year Initiated**	2018	**Current Status**	Archive	**STAPLEE Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	Sidewalk are dangerous and have been reconstructed and safe going forward.
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate landslides on St. Anne to Shady Lane causing sidewalk deterioration and water ponding along US 50						
Action #	33-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	They are constantly aware of hazardous materials in R.R. which are disastrous to the village.

2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy-out plan for flood prone structures. Identify repetitive loss properties impacted by flooding and landslides						
Action #	33-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Ongoing but partially resolved. $20,000 grant we have pull trees to open up the H. Harrison Tomb - we are continually addressing the need to pull trees which have the potential to block roads.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	33-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Trucks for carry hazardous materials along U.S. 50 since East Palistine, Oh.
2024		
2025		
2026		

2027		

Mitigation Action	Implement industrial site buffering						
Action #	33-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Ongoing but partially resolved. $20,000 grant we have pull trees to open up the H. Harrison Tomb - we are continually addressing the need to pull trees which have the potential to block roads.
2024		
2025		
2026		
2027		

Mitigation Action	Develop ordinances to require improved building standards and floodplain ordinances						
Action #	33-09	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Ongoing but partially resolved. $20,000 grant we have pull trees to open up the H. Harrison Tomb - we are continually addressing the need to pull trees which have the potential to block roads.
2024		
2025		
2026		
2027		

North College Hill – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Fels	Brian	Fire Chief	Fire Department	bfels.fd@northcollegehill.org
Klus Ekey	Jennifer	City Administrator	Administration	Jekey@northcollegehill.org
Nichols	Tracie	Mayor	City Council	tnichols@northcollegehill.org
Ruter	Braden	Public Works	Public Works	bruter@northcollegehill.org
Schrand	Ryan	Police Chief	Police Department	rschrand@northcollegehill.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (5 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Brian Fels	Yes		4/14/2023, 7:30 am – 9:00 am
Ryan McEwan	Yes		4/14/2023, 7:30 am – 9:00 am

Community Profile & Description

North College Hill is located in southwest Ohio. North College Hill is part of Hamilton County. North College Hill has 1.83 square miles of land area and 0.00 square miles of water area. As of 2021, the total North College Hill population is 9,556, which has grown since 2010 (9,397). The population growth rate is much lower than the state average rate and is much lower than the national average rate. North College Hill median household income is $51,120 in 2017-2021. The income growth rate is much lower than the state average rate and is much lower than the national average rate. North College Hill median house value is $90,600 in 2017-2021. The house value growth rate is much lower than the state average rate and is much lower than the national average. On average, the public school district that covers North College Hill is worse than the state average in quality.

Hazard Analysis

Civil Disorder/Riot: The city borders the City of Cincinnati and the city has experienced limited protests and civil disorder.

Dam/Levee Failure: The city has a large underground water culvert that runs through the north side of the jurisdiction.

Extreme Cold Incident: The city has a high population that depends on walking and public transportation for food, school, and jobs.

Fire: The city has a large population of vision impaired individuals (residents and employees) who may be more vulnerable to fire hazards.

Flood (Flash): The city has experienced intermittent basement flooding in limited areas.

Mass Transportation Incident: Ronald Reagan Highway (SR I26) is a major corridor that connects the western and central portions of the county.

Terrorism/Active Assailant: The city has a high number of junior and senior high schools, which may be more prone to violent mass casualty incidents.

North College Hill Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	11	15	25	51	**77**
Civil Disorder/Riot	3	6	16	23	45	**69**
Public Health Emergency	3	8	9	28	45	**69**
Severe Thunderstorm	3	8	15	22	45	**69**
Urban Fire/ Structural Fire	3	9	9	25	43	**67**
Hazardous Material Incident	3	7	9	24	40	**63**
Mass Transportation Incident	3	0	3	25	28	**46**
Infrastructure and Structural Failure	2	7	11	21	39	**43**
Severe Winter Storm	2	4	8	27	39	**43**
Flash Flood	2	4	7	27	38	**42**
Extreme Cold Incident	2	3	5	27	35	**39**
Extreme Heat Incident	2	3	8	23	34	**38**
Land Loss	2	3	9	22	34	**38**
Riverine Flood	1	0	6	26	32	**20**
Wildfire	1	3	5	19	27	**17**
Landslide	1	1	5	20	26	**17**
Cyber Incident	0	10	12	21	43	**0**
Dam/Levee Failure	0	0	0	30	30	**0**
Drought	0	0	3	17	20	**0**
Earthquake	0	4	15	33	52	**0**
Terrorism/ Active Assailant	0	9	9	21	39	**0**

**Normalized to 100*

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Development of community safe room						
Action #	34-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Study and identify the necessity of safe room for residents. This could include location and size and design and installation						
Action #	34-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Exploring funding opportunities
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	34-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	In progress
2024		
2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	34-04	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	New Salt Trucks and plans
2024		
2025		
2026		
2027		

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills						
Action #	34-05	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	FD acquired items in 2019

2024		
2025		
2026		
2027		

Norwood – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Blevins	Erik	Fire Captain	Fire Department	eblevins@norwoodohiofire.org
Geers	Joseph	Service Safety Director	Administration	ssd@norwood-ohio.com
McCabe	Tom	Assistant Fire Chief	Fire Department	tmccabe@norwoodohiofire.org
Murphy	Ronald	Police Lieutenant	Police Department	rmurphy@norwoodpolice.org
Wallace	Ron	Fire Chief	Fire Department	rwallace@norwoodohiofire.org
Schneider	Victor	Mayor	City Council	mayor@norwood-ohio.com

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (23 Responses)	Yes	No	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Brodie Cianciolo	Yes		3/2/2023, 1:00 pm – 4:00 pm
Michael Gabbard	Yes		3/2/2023, 1:00 pm – 4:00 pm
Tom McCabe	Yes		3/2/2023, 1:00 pm – 4:00 pm
John Peter	Yes		3/2/2023, 1:00 pm – 4:00 pm
Noah Powers	Yes		3/2/2023, 1:00 pm – 4:00 pm
Mark Reeves	Yes		3/2/2023, 1:00 pm – 4:00 pm
Mike Skelly	Yes		3/2/2023, 1:00 pm – 4:00 pm
Dwayne Sumner	Yes		3/2/2023, 1:00 pm – 4:00 pm
Clint Zimmerman	Yes		3/2/2023, 1:00 pm – 4:00 pm

Community Profile & Description

The City of Norwood is the second most populous city in Hamilton County. In 1902, the City of Cincinnati made the first of several attempts to annex Norwood. The citizens of Norwood rejected the merger by a margin of 55 votes. Later that year, Norwood citizens voted to incorporate the village as a city, since their population of 6,480 made them eligible for incorporation. The City is 3.15 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 18,983.

Hazard Analysis

Civil Disorder/Riot: Norwood is surrounded by the City of Cincinnati. The area is very susceptible to Civil Disorder/Riot, primarily on the southern and western borders of the city.

Cyber Incident: Cyberattack is a concern for the city. Efforts are needed to better understand how the city can better protect its I.T. infrastructure, public utilities, and other vulnerable assets.

Earthquake: The aging building stock in the city presents a unique concern to the city for seismic activity.

Fire: Within the city, residential buildings with old construction represent 50% of building stock. Many buildings do not have sprinkler systems and are built close in proximity. These buildings are of great concern to the city. Similarly, 50 percent of industrial/commercial and nonindustrial sites are aging and/or vacant. Many commercial sites are newer and have sprinkler systems.

Flood (Flash): Notably, in 2016, the city suffered major flash flooding. The incident overwhelmed fire/police, including the dispatch center. Norwood is seeking to improve capabilities to better manage flooding concerns.

Flood (Riverine): There is potential for major flooding in areas south of Norwood.

Hazardous Materials Incident: Two large chemical companies occupy space along Highland Avenue and are located in close proximity to each other. These are both bordered on the south by Highway 562. The number of pharmacies/facilities utilizing radiological materials is a concern to the city.

Landslide: There is limited concern for landslide incidents.

Mass Transportation Incident: Highway 562 and I-71 run through the city. An estimated 250,000 vehicles utilize these roadways within a 24-hour period. Given the volume of vehicles that use these roadways, there is increased concern for a major transportation incident. There is also concern with the train storage area and the multiple rail lines that run through the city.

Public Health Emergency: The aging population in the city represents a unique concern for the city during a public health emergency. There is also an influx of economically disadvantaged residents (primarily renters) that may be more vulnerable during a public health crisis.

Land Loss (i.e., Sinkhole/Karst/Subsidence Erosion): The city has experienced a manmade sinkhole incident, which was caused by sewer issues.

Infrastructure and Structural Failure: As buildings age in the city, they become more susceptible to failure. The city has a number of vacant/abandoned structures.

Wildfire: Wildfire is an unlikely event for jurisdiction.

Norwood Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	8	12	29	49	75
Severe Winter Storm	3	4	11	28	43	67
Extreme Cold Incident	3	4	9	28	41	64
Extreme Heat Incident	3	4	9	26	39	61
Severe Thunderstorm	3	4	11	22	37	59
Hazardous Material Incident	2	11	17	25	53	56
High Wind and Tornado	2	11	16	26	53	56
Public Health Emergency	2	7	17	28	52	55
Infrastructure and Structural Failure	2	8	14	21	43	47
Mass Transportation Incident	2	7	11	25	43	47
Civil Disorder/Riot	2	4	11	22	37	41
Cyber Incident	2	8	9	19	36	40
Urban Fire/ Structural Fire	2	3	6	25	34	38
Earthquake	1	11	16	34	61	35
Terrorism/ Active Assailant	1	7	9	22	38	23
Land Loss	1	5	6	23	34	21
Landslide	1	5	6	19	30	19
Drought	1	1	6	18	25	16
Dam/Levee Failure	0	3	3	26	32	0
Riverine Flood	0	1	5	20	26	0
Wildfire	0	4	3	17	24	0

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Upgrade infrastructure failure (e.g. to mains and distribution) for both water and stormwater to reduce localized flooding						
Action #	35-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	38/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop a post-disaster recovery ordinance to ensure that repairs made to damaged structures follow a regulated, orderly process by requiring pre-repair permit(s) and a post-repair inspection						
Action #	35-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	35-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	NHS Complete. Other schools are ongoing. Three City buildings have them; City Hall Fire, and Police.
2024		
2025		
2026		
2027		

Mitigation Action	Retrofit/harden fire stations						
Action #	35-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Updated Cameras, Updated Security
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	35-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		

2025		
2026		
2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	35-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	New truck purchased in 2022
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to re-engineer the railroad crossing						
Action #	35-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills						
Action #	35-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Secure funding to reinstate former staffing levels for inspections and public education						
Action #	35-09	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Reading – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Bemmes	Robert (Bo)	Mayor	City Council	rbemmes@readingohio.org
Owens	Todd	Fire Chief	Fire Department	towens@readingohio.org
Ross	Patrick	Safety Services Director	Administration	pross@readingohio.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (7 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Dan Bressert	Yes		3/3/2023, 9:00 am – 12:00 pm
Bryan Edens	Yes		3/3/2023, 9:00 am – 12:00 pm
Todd Owens	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

The City of Reading was incorporated as a village in 1851. It is named after Harvey Redinbo, who purchased land in the 1790s, in honor of his hometown of Reading. The City is 2.89 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 10,467.

Hazard Analysis

Flood (Flash): Flash flooding occurs in the valley area along the Millcreek. Flooding also occurs at the south end of Reading (Reading Rd).

Hazardous Materials Incident: I-75 and Ronald Reagan Highway are susceptible to HAZMAT incidents. Train derailments (note: railroad tracks split the city and border the west side of the city) may result in hazardous materials releases.

Mass Transportation Incident: Railroads, I-75 and Ronald Reagan Highway are susceptible to major transportation incidents.

Terrorism/Active Assailant: Terrorism is a general concern for the city. School shootings are a concern for the city. The city has four elementary schools (K-8) and two high schools.

Reading Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	2	4	12	29	45	49
Public Health Emergency	2	7	9	28	44	48
Riverine Flood	2	4	12	26	42	46
Extreme Cold Incident	2	3	9	27	39	43
Extreme Heat Incident	2	3	9	26	38	42
Severe Thunderstorm	2	4	11	22	37	41
Infrastructure and Structural Failure	2	4	11	21	36	40
Terrorism/ Active Assailant	1	11	15	23	49	29
Hazardous Material Incident	1	4	14	25	43	26
High Wind and Tornado	1	4	12	27	43	26
Severe Winter Storm	1	3	11	29	43	26
Civil Disorder/Riot	1	6	10	23	39	24
Mass Transportation Incident	1	3	9	27	39	24
Cyber Incident	1	6	9	18	33	21
Urban Fire/ Structural Fire	1	0	6	23	29	18
Land Loss	1	0	6	21	27	17
Landslide	1	0	6	19	25	16
Wildfire	1	0	6	18	24	16
Dam/Levee Failure	0	3	5	26	34	0
Drought	0	3	6	19	28	0
Earthquake	0	3	9	30	42	0

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Build a new energy efficient City/Police/Fire building and generator to power the field house for emergency relocation of residents during emergencies						
Action #	36-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	30/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Institute a buy-out plan for flood prone structures						
Action #	36-02	Year Initiated	2013	Current Status	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop/upgrade storm water drainage plans to guide surface water through proper channels						
Action #	36-03	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Mill Creek Bench Project - Increase capacity by 1m +/- gallons in 2021.
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	36-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an engineering study to mitigate landslides and erosion issues						
Action #	36-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	One area on Hunt Rd.
2024		
2025		
2026		

2027		

Mitigation Action	Enhance snow removal equipment and supplies						
Action #	36-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement a water conservation plan						
Action #	36-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas						
Action #	36-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		-

Mitigation Action	Update tree trimming ordinances						
Action #	36-09	**Year Initiated**	2007	**Current Status**	Complete	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Tree removed from right of way.
2024		
2025		
2026		
2027		

St. Bernard – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Stuchell	Jonathan	Mayor	Village Council	mayor@cityofstbenard.org
Young	Bryan	Fire Chief	Fire Department	firechief@cityofstbernard.org
Paul	Thomas	Director	Service Department	service@cityofstbernard.org
Simos	Michael	Police Chief	Police Department	msimos@stbernardpolice.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (2 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Brian Young	Yes		3/3/2023, 9:00 am – 12:00 pm
Thomas Paul	Yes		3/3/2023, 9:00 am – 12:00 pm
Michael Simos	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

St. Bernard Village was laid out in 1851 at the intersection of Main Street, the Miami and Erie Canal and the Cincinnati, Hamilton and Dayton Railway. St. Bernard was incorporated as a village in 1878. St. Bernard Village is 1.56 square miles and had an estimated population of 4,052 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: Due to the village's demographic and surrounding jurisdictions, it is prone to potential civil disorders.

Cyber Incident: The village has experienced a cyber-attack in the past.

Earthquake: There is a slight risk for earthquakes.

Fire and Hazardous Materials: The village has a large industrial and chemical base, increasing the risk of fire and HAZMAT hazards.

Flood (Flash): Historically, the Village had a "catastrophic" flood in 2016 due to a "storm of the century." The recent severe flash flooding demonstrates how vulnerable St. Bernard is to this hazard.

Flood (Riverine): The Mill Creek flows through the jurisdiction, but is electronically controlled.

High Wind and Tornado: St. Bernard is in an area of the country that is vulnerable to severe thunderstorms and tornadoes.

Mass Transportation Incident: St. Bernard has rail lines and I-75 that run through the jurisdiction, making the village vulnerable to major transportation incidents.

Severe Winter Storm: St. Bernard is in a part of the country that regularly experiences winter storms.

Land Loss (i.e., Sinkhole/Karst/ Subsidence Erosion): The village has experienced sinkholes in the past.

Terrorism/Active Assailant: Terrorism is a possibility due to P&G and chemical plants in the jurisdiction. St. Bernard has two high schools and two elementary schools, which are at risk of a violent mass casualty incident, like all schools.

St. Bernard Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	11	13	26	50	**76**
Hazardous Material Incident	3	11	13	25	49	**75**
Civil Disorder/Riot	3	7	11	22	40	**63**
Severe Thunderstorm	3	7	13	20	40	**63**
Extreme Cold Incident	3	0	11	26	37	**59**
Urban Fire/ Structural Fire	3	8	5	24	37	**59**
Extreme Heat Incident	3	0	11	23	34	**54**
Flash Flood	2	11	10	29	50	**53**
Public Health Emergency	2	11	11	26	48	**52**
Severe Winter Storm	2	7	13	28	48	**52**
Cyber Incident	2	6	8	19	33	**37**
Mass Transportation Incident	2	6	5	21	32	**36**
Earthquake	1	11	10	33	54	**31**
Terrorism/ Active Assailant	1	9	15	22	46	**27**
Infrastructure and Structural Failure	1	11	10	20	41	**25**
Dam/Levee Failure	1	5	5	26	36	**22**
Drought	0	0	5	16	21	**0**
Riverine Flood	0	6	5	26	37	**0**
Land Loss	0	4	5	21	30	**0**
Landslide	0	1	5	18	24	**0**
Wildfire	0	0	5	17	22	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Upgrade to an Emergency Operation Center						
Action #	37-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Install portable computers in emergency vehicles						
Action #	37-02	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	25

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire training, equipment, and resources to handle small hazardous materials spills						
Action #	37-03	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Complete for Safety Center and City Hall.

2024		
2025		
2026		
2027		

Mitigation Action	Storm sewer upgrade						
Action #	37-04	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire transfer switches/generators for all shelters						
Action #	37-05	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Complete for Safety Center and City Hall
2024		
2025		
2026		
2027		

Sharonville – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Carlso	Mike	Assistant Director	Public Works	mcarlson@cityofsharonville.com
Cordes	Walter	Lieutenant	Police Department	wcordes@cityofsharonville.com
Creech	John	Director	Community Development	jcreech@cityofsharonville.com
Hardman	Kevin M.	Mayor	City Council	khardman@cityofsharonville.com
Busam	Steve	Director	Public Works	sbussan@cityofsharonville.com
Lukas	James	Safety Services Director	Administration and Finance	jlukas@cityofsharonville.com
Sunderman	Dan	Fire Chief	Fire Department	dsunderman@cityofsharonville.com
Nesbit	James	Police Chief	Police Department	jnesbit@cityofsharonville.com

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (30 Responses)	Yes	No	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Steve Busam	Yes		3/3/2023, 9:00 am – 12:00 pm
Michael Blower	Yes		3/3/2023, 9:00 am – 12:00 pm
Randy Campion	Yes		3/3/2023, 9:00 am – 12:00 pm
John Creech	Yes		3/3/2023, 9:00 am – 12:00 pm
Chris Ellis	Yes		3/3/2023, 9:00 am – 12:00 pm
James Lukas	Yes		3/3/2023, 9:00 am – 12:00 pm
Jim Nesbit	Yes		3/3/2023, 9:00 am – 12:00 pm
Dan Sunderman	Yes		3/3/2023, 9:00 am – 12:00 pm
Luke Sholl	Yes		3/3/2023, 9:00 am – 12:00 pm
Dan Sunderman	Yes		3/3/2023,9:00 am – 12:00 pm

Community Profile & Description

The City of Sharonville is located in both Butler and Hamilton counties in Ohio. The majority of the population (over 11,000 people) reside in Hamilton County. Settlers arrived in present day Sharonville in 1788 and the was incorporated in 1911 as a village. Sharonville received its city rights in 1962. The City is 9.89 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 11,493.

Hazard Analysis

Civil Disorder/Riot: Several local events pose a risk of civil disorder or riot, including: Sharonfest (July), St. Michael's (June), Blue Ash, and Summit Park events.

Dam/Levee Failure: The city has a retention dam.

Flood (Riverine): Mill Creek, Canal Rd, Mosteller at Kemper, and Reading at Kemper are subject to flooding.

Flood (Flash): Businesses along Mill Creek are susceptible to urban/flash flooding.

Hazardous Materials Incident: Railroad and chemical plants pose a threat to the city.

Mass Transportation Incident: A railroad runs through the city, which poses a risk to the city.

Severe Winter Storm: Snow incidents impacting major roadways is a concern for the city.

Terrorism/Active Assailant: Events at the Convention Center and Princeton High school may be vulnerable to violent mass casualty incidents.

Sharonville Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Mass Transportation Incident	3	7	10	24	41	**64**
Severe Thunderstorm	3	7	11	22	40	**63**
Hazardous Material Incident	2	12	15	26	53	**56**
High Wind and Tornado	2	11	15	26	52	**55**
Flash Flood	2	8	10	29	47	**51**
Public Health Emergency	2	8	12	27	47	**51**
Riverine Flood	2	8	12	26	46	**50**
Severe Winter Storm	2	4	9	28	41	**45**
Infrastructure/Structural Failure	2	8	11	19	38	**42**
Extreme Cold Incident	2	4	6	27	37	**41**
Cyber Incident	2	8	9	19	36	**40**
Extreme Heat Incident	2	4	6	25	35	**39**
Urban Fire/ Structural Fire	2	5	6	24	35	**39**
Terrorism/ Active Assailant	2	4	6	19	29	**33**
Earthquake	1	8	13	32	53	**31**
Dam/Levee Failure	1	11	11	29	51	**30**
Civil Disorder/Riot	1	3	7	23	33	**21**
Land Loss	1	5	6	22	33	**21**
Wildfire	1	7	6	20	33	**21**
Landslide	1	5	6	20	31	**19**
Drought	1	4	6	18	28	**18**

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

**Normalized to 100*

Mitigation Actions

Mitigation Action	Increase the ability and ease of mobile communication between agencies and municipalities.						
Action #	38-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Decrease emergency response times and increase public travel options over and/or around rail crossing						
Action #	38-02	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	33/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	

2024		
2025		
2026		
2027		

Mitigation Action	Create main street open ditch stormwater. Remove underground culvert and create open ditch to improve capacity and flow of stormwater						
Action #	38-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	32

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Cost revised from 2 million to 3 million. Expected completion is now 12/2023. Work is active and in progress now.
2024		
2025		
2026		
2027		

Mitigation Action	Kemper Road basin flood control mitigation						
Action #	38-04	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Complete in 2020
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to re-engineer the rail road crossings						
Action #	38-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to address “large scale gridlock/chaos” resulting from power outages						
Action #	38-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	38-07	**Year Initiated**	2018	**Current Status**	Archive	**STAPLEE Score**	2

Annual Project Maintenance

Year	Status	Comments
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Develop an enhanced county-wide emergency notification communication system						
Action #	38-08	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	14

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Enhanced snow removal equipment and supplies						
Action #	38-09	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Complete in 2014
2024		
2025		
2026		

2027		

Silverton – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Meador	Denny	Fire Chief	Deer Park-Silverton Joint Fire District	dmeadorjr@dpsjfd.org
Smith	John A.	Mayor	Village Council	jasmith@fuse.net

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (5 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jade Cameron	Yes		3/13/2023, 8:00 am – 9:30 am
Destiny Jardin	Yes		3/13/2023, 8:00 am – 9:30 am
Paul Naber	Yes		3/13/2023, 8:00 am – 9:30 am
Ryan McEwan	Yes		3/13/2023, 8:00 am – 9:30 am
Jason Webber	Yes		3/13/2023, 8:00 am – 9:30 am

Community Profile & Description

Silverton is a Village formed out of Columbia and Sycamore townships, but withdrew from both and formed a paper township. Silverton Village is 1.11 square miles and had an estimated population of 4,890 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Civil Disorder/Riot: The village's proximity to the urban population center, and the main roadways that feed into the area (Montgomery Road and I-71), make the village vulnerable to civil disorder/riots. Special events, such as the annual Taste of Silverton in June (up to 2,000 assembled), is a large gathering of people, which increases the risk for disorderly behavior.

Extreme Cold Incident: The village will need to give assistance to the retirement community and nursing home in the event of power/heat failure. Residents with special needs will also be of concern.

Extreme Heat Incident: The village will need to give assistance to the retirement and nursing homes in the event of power/AC unit failure. Residents with special needs will also be of concern.

Fire: A number of facilities (i.e. retirement centers) with vulnerable populations are a specific concern for the village.

Flood (Flash): Stewart and the ramp on I-71 is susceptible to flooding. Residential basement flooding is also a concern during flooding events. MSD Sewer at Diehl and 6700 Montgomery are specific areas of concern.

Hazardous Materials Incident: HAZMAT is a concern for the village. Railways and roadways, including I-71 and Montgomery Road, pose a unique risk to the village.

High Wind and Tornado: The village has a substantial urban forest, which increases the risk for tree limb damage to power and phone lines.

Landslide: There are several areas prone to landslide within the village. These areas prone to landslide include: Stewart Road at I-71, the hillside overlooking I-71, the hillside by 6760 Belkenton, and Section Road.

Mass Transportation Incident: I-71 and the railroad passing through the village is a concern for major transportation incidents. Specific areas of concern are: I-71 and Montgomery Road (6700 block to 7400 block).

Public Health Emergency: Nursing homes and retirement communities are most vulnerable during public health emergencies.

Severe Thunderstorm: Storm/wind may cause damage to all businesses and residents within the village.

Severe Winter Storm: The village would assist all residents during a winter weather incident, especially those who are most vulnerable. Specifically, retirement and nursing homes and special needs residents will be a priority. Stewart Road Hillside (north of I-71) is steep and is an area of concern during a winter weather incident.

Infrastructure and Structural Failure: There is one known "bridge" culvert on Stewart Road north of I-71 that is a potential risk for structural failure. Nursing and retirement communities, along with residents with special needs are most vulnerable during utility failure. Water, gas, electric and telephone utilities run through Silverton by way of Montgomery Road and Plainfield Road. This area is susceptible to utility failure.

There are cell towers, which serve large areas, overlooking I-71 between Red Bank and Stewart exits. These are also critical assets.

Terrorism/Active Assailant: There are many events that are potential targets for incidents of violent mass casualties. The potential targets for incidents of violent mass casualties include: School type functions, city/village music concerts, and village community yard sale, along with Silverton Paideia School.

Silverton Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	2	11	13	24	48	**52**
Hazardous Material Incident	2	9	12	24	45	**49**
Urban Fire/ Structural Fire	3	1	5	21	27	**45**
Severe Winter Storm	2	4	9	27	40	**44**
Extreme Cold Incident	2	1	8	26	35	**39**
Severe Thunderstorm	2	4	11	20	35	**39**
Extreme Heat Incident	2	1	8	23	32	**36**
Mass Transportation Incident	2	4	6	22	32	**36**
Flash Flood	2	2	5	24	31	**35**
Earthquake	1	3	12	31	46	**27**
Public Health Emergency	1	5	14	26	45	**27**
Civil Disorder/Riot	1	6	11	21	38	**23**
Terrorism/ Active Assailant	1	9	9	19	37	**23**
Infrastructure and Structural Failure	1	8	6	18	32	**20**
Cyber Incident	1	5	6	18	29	**18**
Drought	1	0	5	16	21	**14**
Riverine Flood	1	0	0	20	20	**13**
Land Loss	1	1	0	19	20	**13**
Landslide	1	0	0	16	16	**11**
Dam/Levee Failure	0	0	0	24	24	**0**
Wildfire	0	0	0	15	15	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Storm water management study for N. Berkeley and S. Berkeley streets and possible mitigation projects						
Action #	39-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Request MSD to separate combined sewers on Montgomery Road, Stoll, and Diehl						
Action #	39-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	32

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Need to explore impacts to Silverton
2024		
2025		
2026		
2027		

Mitigation Action	Identify and confirm shelter locations						
Action #	39-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	35

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	Need to identify past actions and facilities.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	39-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Confirm address of other buildings
2024		
2025		
2026		
2027		

Mitigation Action	Build/establish shelters with generators						
Action #	39-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Confirm address of other buildings
2024		
2025		
2026		

2027		

Mitigation Action	Conduct engineering impact studies on flood mitigation						
Action #	39-06	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Stewart Rd.
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to re-engineer the rail road crossing						
Action #	39-07	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	ODOT – Mont. Rd. Project 2023. ODOT updates to Montgomery Rd.
2024		
2025		
2026		
2027		

Mitigation Action	Improve storm water management						
Action #	39-08	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Addressed by other actions
2024		
2025		
2026		
2027		

Mitigation Action	Restructure the intersection of Plainfield and Montgomery Roads						
Action #	39-09	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Springdale – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Huxsoll	Mike	Assistant Director	Public Works	mhuxsoll@springdale.org
Clayton	Matt	Health Commissioner	Health Department	mclayton@springdale.org
Jones	John J.	City Administrator	Administration	jjones@springdale.org
Wells	Thomas	Police Chief	Police Department	twells@springdale.org
Uhl	Brian	Assistant City Administrator	Administration	buhl@springdale.org
Williams	Scott	Assistant Fire Chief	Fire Department	swilliams@springdale.org
Stanley	Anthony	Assistant Fire Chief	Fire Department	anthonys@springdale.org
Webster	Doyle	Mayor	City of Council	dwebster@springdale.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (23 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Mike Huxsoll	Yes		3/3/2023, 9:00 am – 12:00 pm
Thomas Wells	Yes		3/2/2023, 1:00 pm – 4:00pm
Brian Uhl	Yes		3/3/2023, 9:00 am – 12:00 pm
Anthony Stanley	Yes		3/1/2023, 9:00 am – 12:00 pm

Community Profile & Description

The City of Springdale was originally settled in the early 1800's but grew little until after World War II when Cincinnati started a rapid expansion to the suburbs. Due to its strategic location, Springdale became one of the fastest growing areas. Springdale was incorporated as a village in December 1959 and forming a local government was top priority at the time. By February 1971, Springdale's population had grown to over 5,000 and it was officially given status as a city. The City is 4.97 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 11,024.

Hazard Analysis

Hazardous Materials: I-275 is the hazardous materials route for Hamilton County and passes through Springdale. Trains that pass through Springdale also transport hazardous materials.

Mass Transportation Incident: There is also concern for Mass Transportation Incident along I-275

Terrorism/Active Assailant: Tri-County mall in Springdale presented a soft target for potential terrorist attacks. The mall was closed, and future development is in progress.

Springdale Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	4	9	30	43	**67**
Severe Thunderstorm	3	4	12	23	39	**61**
High Wind and Tornado	2	8	18	28	54	**57**
Public Health Emergency	2	9	13	29	51	**54**
Hazardous Material Incident	2	10	13	27	50	**53**
Severe Winter Storm	2	7	13	29	49	**53**
Extreme Cold Incident	2	4	12	29	45	**49**
Extreme Heat Incident	2	4	12	26	42	**46**
Urban Fire/ Structural Fire	2	7	7	27	41	**45**
Cyber Incident	2	7	7	19	33	**37**
Earthquake	1	8	11	33	52	**30**
Mass Transportation Incident	1	10	13	26	49	**29**
Infrastructure and Structural Failure	1	11	14	22	47	**28**
Terrorism/ Active Assailant	1	10	12	23	45	**27**
Dam/Levee Failure	1	5	7	27	39	**24**
Civil Disorder/Riot	1	4	11	23	38	**23**
Land Loss	1	4	8	22	34	**21**
Landslide	1	4	8	20	32	**20**
Drought	1	1	12	18	31	**19**
Riverine Flood	1	0	5	24	29	**18**
Wildfire	0	1	8	20	29	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Replaced the Emergency Generators for City Own facilities used for Public Service, EOC, and as warming/cooling centers						
Action #	40-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Flash Flooding on and around Tricon Road						
Action #	40-02	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	31/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Improvements/upgrades to the City's Emergency Operations Center						
Action #	40-03	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	37/40

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct tabletop exercises to increase preparedness, work with the local EMA's Mass Care Coordinator, and develop community education opportunities to increase preparedness						
Action #	40-04	**Year Initiated**	2023-2024	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	To increase storm drainage capacity through installation of more regional retention to prevent flooding in the community and further downstream						
Action #	40-05	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	29/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		

2025		
2026		
2027		

Mitigation Action	Increase operational capabilities of the established emergency operations center including security upgrades (physical and cyber), IT Upgrades, and plan revisions/trainings						
Action #	40-06	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Coordinate with commercial property owners regarding flood-prone properties						
Action #	40-07	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	65

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		

2027		

Mitigation Action	Mitigation of railroad overpass at SR 747						
Action #	40-08	**Year Initiated**	2007	**Current Status**	Archive	**Prioritization Score**	

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to determine which public buildings have back-up power						
Action #	40-09	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	65

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Acquire communication radios for emergency personnel						
Action #	40-10	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	57

Annual Project Maintenance

Year	Status	Comments
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to re-engineer the rail road crossing						
Action #	40-11	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	35

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas						
Action #	40-12	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	32

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		

2026		
2027		

Mitigation Action	Build/establish shelters with generators for smaller jurisdictions and mobile home parks						
Action #	40-13	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	20

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	
2024		
2025		
2026		
2027		

Springfield – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Bley	Rick	Public Safety Director	Police Department	rbley@springfieldtwp.org
Browe	Rick	Fire Chief	Fire Department	
Buckmeier	Rob		Public Works	
Eller	Ashley	Lieutenant	Fire Department	
Gilbert	Chris	Township Administrator	Administration	cgilbert@springfieldtwp.org
Gould	Mike	Dir. of Infrastructure and Development	Public Works	mgould@springfieldtwp.org
Kennedy	Kathleen	Township Administrator	Administration	
Miller	Randy	Fire Lieutenant	Fire Department	rmiller@springfieldtwp.org
Niehaus	Chris	Captain	Police Department	
Peterson	Nick	Captain	Police Department	
Thurman	Mark	Captain	Fire Department	
Schardine	Scott		Public Works	
Seiter	Andy		Public Works	

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (99 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Ashley Eller	Yes		3/1/2023, 9:00 am – 12:00 pm
Mark Thurman	Yes		3/1/2023, 9:00 am – 12:00 pm
Rick Browe	Yes		3/1/2023, 9:00 am – 12:00 pm
Randy Miller	Yes		3/1/2023, 9:00 am – 12:00 pm
Andy Seiter	Yes		3/1/2023, 9:00 am – 12:00 pm
Rob Buckmeier	Yes		3/1/2023, 9:00 am – 12:00 pm
Chris Niehaus	Yes		3/1/2023, 9:00 am – 12:00 pm
Nick Peterson	Yes		3/1/2023, 9:00 am – 12:00 pm
Scott Schardine	Yes		3/1/2023, 9:00 am – 12:00 pm
Anthony Stanley	Yes		3/2/2023, 1:00 pm – 4:00 pm

Community Profile & Description

As the centermost point in Hamilton County, Springfield Township is the place approximately 36,000 people call home. Our community includes portions of seven public school districts and the area's top-rated private academic institutions. The heart of Springfield Township spans an area from North Bend Road, through the county's second largest park, Winton Woods. Our neighborhoods often provide individual identity and may be more familiar by name; Finneytown, Pleasant Run Farms, New Burlington, View Place, and Parkview Heights to name a few. As a predominately residential community, we boast nearly fifty churches worshiping weekly and sharing various cultures in celebration through Greek festivals, German tradition and African dance. We are home to the internationally known artist - Charley Harper, the first LaRosa's franchise restaurant and largest all male Jesuit high school, St. Xavier. We are center to convenience with service at our core - dentists, dry cleaners, veterinarians and hair stylists you know by name. Springfield Township is the perfect mix of urban and suburban lifestyle with a wide range of housing choices and a growing arts presence. Best yet, with access to I-75, Cross County Highway and I-275, Springfield Township is a short drive to the biggest sporting events, shopping destinations, entertainment venues, universities, and restaurants the area has to offer.

Hazard Analysis

Dam/Levee Failure: Winton Woods Lake Dam is listed by Homeland Security as a threat. Although it has a minimal risk of failure, it is a potential terrorist concern.

Flood (Flash): Commercial properties on Caldwell Dr. are exposed to flash flooding. Residential homes in the Golfway Drive area are also vulnerable.

Hazardous Materials Incident: Major roadways (highway and I-75) are especially susceptible to HAZMAT-related incidents.

Mass Transportation Incident: I-75 and Ronald Reagan Cross County Highway increase the risk of a major transportation incident occurring in the township.

Terrorism/Active Assailant: The following are susceptible to violent mass casualty incidents: 1) school events (i.e. high school football and basketball); 2) transportation incidents; and 3) largest private school in Ohio, including seven (7) different school districts and several private schools.

Wildfire: Wooded areas are susceptible to wildfire, such as Winton Woods Park. A fire would also threaten residential communities.

Springfield Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	12	16	26	54	**81**
Severe Winter Storm	3	7	14	31	52	**78**
Extreme Cold Incident	3	7	14	30	51	**77**
Hazardous Material Incident	3	11	14	26	51	**77**
Public Health Emergency	3	9	12	29	50	**76**
Extreme Heat Incident	3	7	14	28	49	**75**
Infrastructure and Structural Failure	3	10	16	22	48	**73**
Cyber Incident	3	8	16	21	45	**69**
Severe Thunderstorm	3	7	14	24	45	**69**
Terrorism/ Active Assailant	3	10	12	21	43	**67**
Mass Transportation Incident	3	7	9	26	42	**65**
Urban Fire/ Structural Fire	3	3	6	26	35	**56**
Dam/Levee Failure	2	12	8	31	51	**54**
Flash Flood	2	8	11	29	48	**52**
Riverine Flood	2	8	11	26	45	**49**
Civil Disorder/Riot	2	10	9	25	44	**48**
Earthquake	1	12	16	34	62	**35**
Wildfire	2	1	6	21	28	**32**
Land Loss	1	3	6	23	32	**20**
Landslide	1	4	6	21	31	**19**
Drought	0	0	6	18	24	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Establish logistical staging areas (LSA) for equipment and supplies						
Action #	41-01	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop long-term strategies to educate the community on the hazards affecting the community						
Action #	41-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	CERT class scheduled for Fall. Weather Spotter in person.
2024		
2025		
2026		
2027		

Mitigation Action	Mitigate flooding in certain areas of the township (Caldwell, Golfway, etc.)						
Action #	41-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	

2024		
2025		
2026		
2027		

Mitigation Action	Update EOP/EOC and Provide Training on the Plans						
Action #	41-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	EOP training conducted in 2022. EOP training conducted with Township leaders and Hamilton County EMA (2022)
2024		
2025		
2026		
2027		

Mitigation Action	Identify and Establish Shelters						
Action #	41-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Incorporate disaster preparedness information on the Springfield Township web page						
Action #	41-06	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	30

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	41-07	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	All buildings that are township facilities have generators except grove.
2024		
2025		
2026		
2027		

Mitigation Action	To identify the need to train and develop procedures for active shooter and civil distress. Work with city, schools, and police for drawings, communications, and equipment						
Action #	41-08	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Promote Fire Safety and Conduct Fire Inspections						
Action #	41-09	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Sycamore – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Kellums	Tracy	Administrator	Administration	tkellums@sycamoretownship.org
Wiedman	Tom	Trustee President	Township Trustees	twiedman@sycamoretownship.org
Uckotter	Jeff	Administrator	Planning & Zoning	juckotter@sycamoretownship.org
Reutelshofer	Steven	Design Technician	Maintenance Department	sreutelshofer@sycamoretownship.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (20 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Mark Homar	Yes		3/1/2023, 1:00 pm - 4:00pm
Rob Penny	Yes		3/3/2023, 9:00 am – 12:00 pm
Steve Reutershofer	Yes		3/1/2023, 1:00 pm - 4:00pm

Community Profile & Description

Sycamore Township was established in 1803 and has established and maintained one of the oldest forms of government known in America. Township is 6.7 square miles and had a population of 19,546 based the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash): Reading Road and Chaucer Drive are prone to flooding. Flooding from Amberley Creek, during a rain incident of substance, causes flooding to Reading Road/U.S. 42. Flooding causes safety response efforts to be compromised or delayed.

Hazardous Materials Incident: Lyondell Chemical on Northlake Drive is vulnerable to hazardous materials release.

Mass Transportation Incident: I-275, I-75, and I-71 pass through the township and pose a risk for major transportation accidents.

Public Health Emergency: Jewish Hospital on Kenwood Road and East Galbraith could be overwhelmed during a public health emergency.

Terrorism/Active Assailant: Kenwood shopping district, located in the vicinity of Kenwood Road/Montgomery Road/ US 22 and Galbraith Road, is a possible terrorism target with many retail and office spaces. Kenwood Shopping District, Moeller High School, Cincinnati Hills Christian Academy, and Rockwern Academy Schools are possible targets for a violent mass casualty incident.

Infrastructure and Structural Failure: Highpoint Subdivision is a vulnerable community with a main high-pressure natural gas supply substation and termination of a gas line. Various water towers throughout the township are also vulnerable to failure.

Sycamore Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Severe Winter Storm	3	7	17	30	54	**81**
Severe Thunderstorm	3	4	16	22	42	**65**
High Wind and Tornado	2	12	18	28	58	**61**
Public Health Emergency	2	11	17	30	58	**61**
Urban Fire/ Structural Fire	3	4	6	23	33	**53**
Mass Transportation Incident	2	10	13	26	49	**53**
Extreme Cold Incident	2	4	14	28	46	**50**
Hazardous Material Incident	2	11	11	23	45	**49**
Extreme Heat Incident	2	4	14	26	44	**48**
Terrorism/ Active Assailant	2	7	12	21	40	**44**
Flash Flood	2	4	7	28	39	**43**
Cyber Incident	2	5	16	17	38	**42**
Earthquake	1	9	17	35	61	**35**
Land Loss	2	2	6	21	29	**33**
Infrastructure and Structural Failure	1	8	9	20	37	**23**
Drought	1	1	14	18	33	**21**
Civil Disorder/Riot	1	3	6	21	30	**19**
Riverine Flood	1	1	3	22	26	**17**
Wildfire	1	0	5	17	22	**14**
Dam/Levee Failure	0	0	0	25	25	**0**
Landslide	0	1	5	18	24	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	To identify or create shelters for storms, tornados, HazMat exposure, HazMat release						
Action #	42-01	**Year Initiated**	2023-2024	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Flash flood mitigation within highpoint subdivision to prevent property damage, improve safety response						
Action #	42-02	**Year Initiated**	2026	**Current Status**	New	**STAPLEE+E Score**	29/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Improve school safety for active shooter incidents. Reduce the ability of unauthorized persons to access schools and cause a severe act of violence. Install access control and monitoring capabilities in schools						
Action #	42-03	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Continue to work through Sheriff and school to improve safety and reduce unauthorized persons to access.
2024		
2025		
2026		
2027		

Mitigation Action	Expand first responder's preparedness, training, and planning of terrorist acts						
Action #	42-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	
2024		
2025		
2026		
2027		

Mitigation Action	Improved design, routing, and traffic control at problem areas on major roadways to reduce risk of accidents. Designate truck routes, in long-term planning, establish more connector road or construct roundabouts to reduce congestion on arterial roads						
Action #	42-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	Have Complete several road improvements and have others in design phase.
2024		
2025		
2026		
2027		

Symmes – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Beck	Phil	Trustee President	Township Trustees	beckfortrustee@fuse.net
Frye	Jon	Deputy Fire Chief	Loveland-Symmes Fire Department	jfrye@lsfd.org
Huber	Otto	Fire Chief	Loveland-Symmes Fire Department	ohuber@lsfd.org
Lapensee	Kimberly A.	Township Administrator	Administration	klapensee@symmestownship.org
Pitman	Bill	Director	Public Works	bpitman@symmestownship.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (23 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Phil Beck	Yes		3/3/2023, 1:00 pm – 4:00 pm
William Burns	Yes		3/1/2023, 1:00 pm – 4:00 pm
Jon Frye	Yes		3/1/2023, 1:00 pm – 4:00 pm

Community Profile & Description

Symmes Township was named for John Cleves Symmes. It is located in what was originally the Symmes Purchase. It was incorporated by an act of the General Assembly in 1822. Symmes Township is 8.6 square miles and had a population of 15,479 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Flood (Flash): Camp Dennison/Cunningham, Morganstrace, Walnut Ridge, and Kemper from Bentley Pass to Loveland Madeira are all areas prone to flooding.

Flood (Riverine): The Little Miami River is susceptible to flooding.

High Wind and Tornado: Overhead transmission lines are vulnerable to tornado and high winds. Utility failure during tornado/high wind incident poses a threat to the community.

Infrastructure and Structural Failure: Three substations and other electrical apparatus are vulnerable to infrastructure failure. The township also has wastewater/sewer facilities that would be vulnerable to failure. There is a large overhead transmission line (county line north to south at Loveland Madeira) that is vulnerable to utility failure.

Landslide: The Loveland Madeira slippage area is vulnerable to landslides.

Mass Transportation Incident: RR-126, Loveland Madeira Rd, along with Interstates 275 and 71, increase the risk of a major transportation accident occurring throughout the township.

Severe Winter Storm: During severe winter weather, a generator for the admin/public works building would be useful in case of utility failure. This facility is a critical asset to the township and would be impacted by a severe winter weather incident.

Terrorism/Active Assailant: The township has buildings that are vulnerable to terrorism, including a GE facility and Governor's Hill. Some of these companies have approximately 3,500 employees who may at risk.

Symmes Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	4	12	29	45	**69**
High Wind and Tornado	3	5	12	27	44	**68**
Riverine Flood	3	4	12	26	42	**65**
Severe Winter Storm	3	0	11	30	41	**64**
Severe Thunderstorm	3	0	11	24	35	**56**
Mass Transportation Incident	2	3	13	27	43	**47**
Dam/Levee Failure	2	4	9	29	42	**46**
Hazardous Material Incident	2	4	8	27	39	**43**
Public Health Emergency	2	1	6	29	36	**40**
Extreme Cold Incident	2	1	5	28	34	**38**
Infrastructure and Structural Failure	2	1	11	21	33	**37**
Extreme Heat Incident	2	1	5	26	32	**36**
Landslide	2	1	6	20	27	**31**
Earthquake	1	0	2	29	31	**19**
Urban Fire/ Structural Fire	1	0	6	24	30	**19**
Land Loss	1	1	6	22	29	**18**
Terrorism/ Active Assailant	1	1	4	19	24	**16**
Civil Disorder/Riot	1	1	3	18	22	**14**
Drought	1	1	4	17	22	**14**
Cyber Incident	1	1	3	16	20	**13**
Wildfire	0	0	6	17	23	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Current administration building's new replacement is being studied in lieu of retrofitting the old existing building						
Action #	43-01	**Year Initiated**	2022	**Current Status**	New	**STAPLEE+E Score**	40/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and install them in critical infrastructure						
Action #	43-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	29

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Older administration building may be replaced L.L..O Retrofitted
2024		
2025		
2026		
2027		

Terrace Park – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Carle	Jeff	Fire Admin/Training Officer	Fire Department	tp94fire@gmail.com
Gaskey	John	Councilman	Village Council	gaskey@terracepark.org
Hayhow	Gerald	Village Administrator	Administration	hayhow@terracepark.org
Tepe	Tom	Mayor	Village Council	tepe@terracepark.org

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (4 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Gerald Hayhow	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

Terrace Park Village was established as a small fortified settlement in 1789 by Abraham Covalt. Terrace Park was incorporated in 1893 and was the winter residence of the Robinson Circus until 1916. Terrace Park Village is 1.22 square miles and had an estimated population of 2,012 based upon the 2021 American Community Survey 5-Year population estimate

Hazard Analysis

Dam/Levee Failure: The southern border is the Little Miami River. If the East Fork Dam were to fail it would have a devastating effect.

Earthquake: Mining activity may cause seismic concerns in the area.

Extreme Cold Incident: A segment of the population is elderly, thus making transportation and living conditions difficult in extreme temperatures. Some of the buildings and homes are extremely old making them vulnerable, as well.

Fire: This community was established in 1893 with many of the original buildings intact. These buildings could burn quickly. The fire department is one of the last remaining all volunteer fire departments in Hamilton County.

Flood (Flash): Urban flooding occurs at Indian Hill Road (at Old Indian Hill).

Flood (Riverine): Flooding at the Little Miami River is a concern for the village.

Hazardous Materials Incident: US 50 is susceptible to HAZMAT incidents.

High Wind and Tornado: The main impact from a tornado or high wind incident would be from falling trees and power lines. Terrace Park has a large number of old growth trees, some as old as 100 years, and have grown extremely tall.

Landslide: The homes on the eastside of Miami Avenue overlook the Little Miami River. The homes are approx. 60-100 feet above the river and sit on gravel.

Mass Transportation Incident: During a major transportation accident, a HAZMAT incident is the greatest concern. Also, US 50 (the highway that intersect the entire US) has no load restrictions. U.S. 50 runs through the center of town. Because there are no load restrictions on materials hauled within the jurisdiction, an accident or spill would be considered a major incident. This would not only affect the residents, but potentially the water supply to many parts of the county.

Severe Winter Storm: Winter and ice storm would impact the elderly population by limiting their mobility.

Terrace Park Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	5	11	28	44	**68**
Riverine Flood	3	5	11	25	41	**64**
High Wind and Tornado	2	8	16	26	50	**53**
Severe Winter Storm	2	7	11	29	47	**51**
Hazardous Material Incident	2	7	14	25	46	**50**
Land Loss	2	5	11	24	40	**44**
Urban Fire/ Structural Fire	2	5	9	25	39	**43**
Wildfire	2	8	11	20	39	**43**
Severe Thunderstorm	2	4	11	23	38	**42**
Infrastructure and Structural Failure	2	4	9	22	35	**39**
Cyber Incident	2	4	6	18	28	**32**
Earthquake	1	4	11	33	48	**28**
Extreme Cold Incident	1	7	11	28	46	**27**
Public Health Emergency	1	5	14	26	45	**27**
Dam/Levee Failure	1	7	8	28	43	**26**
Extreme Heat Incident	1	4	11	26	41	**25**
Mass Transportation Incident	1	4	9	25	38	**23**
Terrorism/ Active Assailant	1	6	9	17	32	**20**
Landslide	1	4	6	20	30	**19**
Drought	1	4	5	17	26	**17**
Civil Disorder/Riot	1	3	0	18	21	**14**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Install generators at the Police and Administration Building for continued Law Enforcement service						
Action #	44-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct geotechnical analysis and environmental impact study						
Action #	44-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Delay in mining has delayed the impact study.
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	44-03	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Financial constraints has delayed the purchase and installation.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	44-04	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Use in conjunction with Hamilton County and will continue.
2024		
2025		
2026		
2027		

Mitigation Action	Establish mutual aid response agreements within the county						
Action #	44-03	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**

2023	Ongoing	County wide mutual aid agreements.
2024		
2025		
2026		
2027		

The Village of Indian Hill – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Henderson	Nate			nhenderson@indianhill.gov
Adkins	Jason	Superintendent	Public Works / Water Works	jadkins@indianhill.gov
Oughterson	Steve			oughtersons@mihjfd.org
Caceres	Francisco	Fire Captain	Madeira & Indian Hill Joint Fire District	caceresf@mihjfd.org
Dressell	Michael	Police Captain	Rangers	mdressell@indianhill.gov
Gully	Scott	Tax Commissioner	Administration	sgully@indianhill.gov
Minneci	Dina	City Manager	Administration	dminneci@indianhill.gov
Schlie	Chuck	Police Chief	Rangers	cschlie@indianhill.gov
Lynch	John	Fire Captain		lynchj@mihjfd.org
Wade-Dorman	Kathleen	Engineer/ Project Manager	Public Works	kdorman@indianhill.gov
West	Jon	Assistant City Manager	Administration	jwest@indianhill.gov
Chaney	Jessica	Director of Admin Services	Administration	jchaney@indianhill.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (2 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jason Adkins	Yes		3/1/2023, 1:00 pm – 4:00 pm
Francisco Caceres	Yes		3/3/2023, 9:00 am – 12:00 pm
Dina Minneci	Yes		3/3/2023, 9:00 am – 12:00 pm
Chuck Schlie	Yes		3/3/2023, 9:00 am – 12:00 pm
Kathleen Wade-Dorman	Yes		3/3/2023, 9:00 am – 12:00 pm
Jon West	Yes		3/3/2023, 9:00 am – 12:00 pm
David Yeager	Yes		3/3/2023, 9:00 am – 12:00 pm

Community Profile & Description

The Village of Indian Hill was incorporated as a village prior to 1970, but under Ohio law became a designated city once its population was verified as exceeding 5,000. The municipality changed its name to add "Village" into the official name. Legally, the City of the Village of Indian Hill is the official name. The Village of Indian Hill is 18.65 square miles and had an estimated population of 6,017 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Dam/Levee Failure: Heimann Pond Dam is a concern to the village. Located on Kugler Mill Road, this Class II Dam is a private dam regulated by ODNR.

Earthquake or Sinkhole/Karst: Mining activity may cause seismic concerns in the area, therefore, it has stopped.

Flood (Flash): Urban/flash flooding have occurred at the intersections of Graves/Sorrel Area, Spooky Hollow at Loveland Madeira Road (July 2001), Given Road at Sycamore Creek Road (2001) and Kroger Farm at Cunningham Road.

Flood (Riverine): The Livingston Lodge area has experienced flooding. Notably, a flooding incident occurred in 2001.

Hazardous Materials Incident: Hazardous materials incidents are possible from the rail corridor (Midland Sub branch)

Landslide: Landslides continue to be a concern for the village due to the soil type in certain areas.

Infrastructure and Structural Failure: The City experiences widespread and persistent power outages due to wind and winter storm incidents.

Indian Hill Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
High Wind and Tornado	3	11	18	28	57	85
Severe Winter Storm	3	8	17	29	54	81
Flash Flood	3	11	12	29	52	78
Severe Thunderstorm	3	8	16	23	47	72
Landslide	3	9	14	22	45	69
Extreme Cold Incident	3	7	9	27	43	67
Infrastructure and Structural Failure	3	9	10	21	40	63
Land Loss	3	5	7	21	33	53
Public Health Emergency	2	8	13	25	46	50
Hazardous Material Incident	2	8	12	23	43	47
Riverine Flood	2	8	7	24	39	43
Extreme Heat Incident	2	4	9	25	38	42
Terrorism/ Active Assailant	2	7	10	19	36	40
Wildfire	2	8	7	19	34	38
Cyber Incident	2	4	10	18	32	36
Earthquake	1	8	11	32	51	30
Dam/Levee Failure	1	8	11	28	47	28
Drought	1	8	9	18	35	22
Urban Fire/ Structural Fire	1	4	8	23	35	22
Mass Transportation Incident	1	4	6	22	32	20

Civil Disorder/Riot	1	4	6	20	30	19

**Normalized to 100*

Classification	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Conduct a condition assessment and replace at-risk water tower						
Action #	45-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	36/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a condition study and needs assessment of existing pier walls/retaining walls village-wide						
Action #	45-02	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	24

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Complete study and needs assessment and begin implementation of projects
2024		

2025		
2026		
2027		

Mitigation Action	Replace at-risk bridges (Blome, Keller, SR126, etc.)						
Action #	45-03	**Year Initiated**	2018	**Current Status**	Complete	**STAPLEE Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Complete Bridge replacements – Blome/Keller
2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	45-04	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	Complete upgrades to WTP generator and switch gear
2024		
2025		
2026		
2027		

Mitigation Action	Conduct an upgrade study on storm/sewer line mitigation option						
Action #	45-05	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Hired GIS Analyst to begin map and plan updates.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and implement safety education for residents and businesses using natural gas						
Action #	45-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Various articles to address ongoing issues.
2024		
2025		
2026		
2027		

Whitewater – Township

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Schaible	Guy	Trustee President	Township Trustees	g.shaible@whitewatertwp.org
McCreary	Josh	Assistant Director	Public Works	j.mccreary@whitewatertwp.org
Schorsch	Scott	Fire Chief	Fire Department	s.schorsch@whitewatertwp.org
Westerfeld	Peggy	Administrator	Administration	p.westerfeld@whitewatertwp.org
Brown	Hubert	Trustee President	Township Trustees	trusteebrown@aol.com

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (2 Responses)	Yes	Yes	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Jim Brett	Yes		04/10/2023, 8:00 am – 9:30 am
Josh McCreary	Yes		04/10/2023, 8:00 am – 9:30 am
Ryan McEwan	Yes		04/10/2023, 8:00 am – 9:30 am
Peggy Westerfeld	Yes		04/10/2023, 8:00 am – 9:30 am

Community Profile & Description

Whitewater Township was established in 1803 when the State of Ohio was admitted to the Union as the 17th state. Whitewater Township is 26.3 square miles and had a population of 6,238 based upon the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Dam/Levee Failure: Hidden Valley Lake Dam and Brookville would greatly impact the township should the dam fail.

Drought: A drought would greatly impact the township with its large agricultural economy.

Earthquake: There are five to seven active mines within Whitewater Township, which have the potential to create localized tremors.

Extreme Cold Incident: A gauge is needed on Whitewater River and Harrison. Lawrenceburg Rd., between Highway 50 and Miamiview Road, floods annually.

Flood (Flash): In Miamitown, Hill St. has a 4-ft wide stream (off the top of the hill) that goes past the catch basin.

Flood (Riverine): Flooding from the Whitewater River is a concern for the township. Lawrenceburg Rd closes annually due to flooding. Green Acres Canoe and Kayak rental is the largest canoe rental in Ohio, and the business is negatively impacted by riverine flooding.

Hazardous Materials Incident: The township has several locations/chemicals vulnerable to HAZMAT. These include: Baleco International, Inc. pool chemicals (chlorine), Wardway Fuel (two 30,000 gallon propane tanks above ground), Reis Trucking, and tar plant. There is a jet fuel pipeline that runs through parts of Whitewater Township.

Landslide: There is a landslide concern between Morgan and US 50 across from the Rivers Edge soccer complex. There is slippage along SR-128.

Mass Transportation Incident: Major transportation accidents are likely to occur on Lawrenceburg “S” bend as well as northbound I-275 to westbound I-74. Tractor trailers flip about five times a year. The SR 128 exit from I-275 is a high-risk area for major transportation accidents.

Infrastructure and Structural Failure: A failure of the Duke Energy substation in Miamitown could lead to power failures in much of Whitewater Township. Cincinnati Bell has a switching station in Whitewater that could affect internet and/or phone operations in the area.

Terrorism/Active Assailant: Gravelrama (held annually in August) is a 5-day event held on Valley Junction Road with thousands of campers. Events at Gravelrama include: Dune buggy ATV races and a parade through Cleves. It is a potential target for a violent mass casualty incident. Other events vulnerable to mass casualty incidents in the area include: Miamitown car show, craft fair/flea market, and soccer tournaments (county park and privately owned) with at least two major tournaments and weekend leagues.

Wildfire: Miami Whitewater Park does controlled burnings annually.

Whitewater Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Flash Flood	3	7	16	30	53	**80**
Riverine Flood	3	8	16	27	51	**77**
Severe Winter Storm	3	3	10	28	41	**64**
Severe Thunderstorm	3	3	10	21	34	**54**
High Wind and Tornado	2	8	13	25	46	**50**
Hazardous Material Incident	2	7	7	26	40	**44**
Extreme Cold Incident	2	3	8	28	39	**43**
Extreme Heat Incident	2	4	8	25	37	**41**
Urban Fire/ Structural Fire	2	6	6	24	36	**40**
Cyber Incident	2	8	6	19	33	**37**
Mass Transportation Incident	2	4	6	23	33	**37**
Dam/Levee Failure	1	9	15	31	55	**32**
Earthquake	1	8	7	32	47	**28**
Land Loss	1	9	13	24	46	**27**
Public Health Emergency	1	4	6	26	36	**22**
Landslide	1	6	5	21	32	**20**
Infrastructure and Structural Failure	1	5	6	20	31	**19**
Terrorism/ Active Assailant	1	3	8	19	30	**19**
Drought	1	4	5	19	28	**18**
Civil Disorder/Riot	0	0	5	19	24	**0**
Wildfire	0	7	6	19	32	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Upgrade current server to a cloud base backup						
Action #	46-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	39/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Stream gauge on Whitewater River						
Action #	46-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Work with the National Weather Service.
2024		
2025		
2026		
2027		

Mitigation Action	Improvements to N275 to W74 (ramp)						
Action #	46-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	30

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	ODOT

2024		
2025		
2026		
2027		

Mitigation Action	Conduct study of Hill St. catch basin in Miami town						
Action #	46-04	**Year Initiated**	2018	**Current Status**	Archive	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Private Property
2024		
2025		
2026		
2027		

Mitigation Action	Lawrenceburg Rd. Improvement project around bridge						
Action #	46-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	30

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Hamilton County Engineers.
2024		
2025		
2026		
2027		

Mitigation Action	Elevate Lawrenceburg Rd						
Action #	46-06	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	30

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Previous efforts were unsuccessful. Elevate Lawrenceburg Rd and suspension Bridge
2024		
2025		
2026		
2027		

Woodlawn – Village

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Brown	Anthony	Director of Public Works	Public Works	abrown@beautifulwoodlawn.us
Calhoun	Terry	Senior Equipment Operator	Public Works	tcalhoun@beautifulwoodlawn.us
Geans	Alan	Municipal Manager	Administration	ageans@beautifulwoodlawn.us
Johnson	Amos	Fire Chief	Fire Department	amos.johnson@beautifulwoodlawn.us
Lawson	Robert	Police Sergeant	Police Department	rlawson@beautilfulwoodlawn.us
Pittman	Carter	Assistant Fire Chief	Fire Department	Cpittman@beautifulwoodlawn.us
Tillman	Aaron L.	Police Chief	Police Department	atillman@beautifulwoodlawn.us
Upton-Farley	Susan	Mayor	Village Council	mayoruptonfarley@beautifulwoodlawn.us

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (4 Responses)	Yes	No	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Victoria Banks	Yes		3/15/2023, 10:00 am – 11:30 am
Timothy Engel	Yes		3/15/2023, 10:00 am – 11:30 am
Ryan McEwan	Yes		3/15/2023, 10:00 am – 11:30 am
Anson Turley	Yes		3/15/2023, 10:00 am – 11:30 am

Community Profile & Description

Woodlawn Village is 2.57 square miles and had an estimated population of 3,844 based the 2021 American Community Survey 5-Year population estimate.

Hazard Analysis

Fire: There are multiple locations throughout the village that are vulnerable to fire hazards.

Flood (Flash): Waverly Ave (6-feet pipe with a grate over it) experienced flooding. The train underpass is potentially vulnerable to flooding. Glendale-Milford is another area in the village that is vulnerable to flooding.

The Woodlawn Flood Study is a priority for the village.

Hazardous Materials Incident: Tier II facilities and rail carrying HAZMAT pose the most significant threat to the village. The Armory (Ohio National Guard) is potentially vulnerable to radiological incidents.

Mass Transportation Incident: Major transportation accidents are likely to occur on major roadways.

Terrorism/Active Assailant: The Armory is potentially vulnerable to terrorism.

Woodlawn Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Extreme Cold Incident	3	3	15	26	44	**68**
Severe Winter Storm	3	3	11	26	40	**63**
Extreme Heat Incident	3	3	11	24	38	**60**
Infrastructure and Structural Failure	3	7	13	18	38	**60**
Flash Flood	3	3	8	26	37	**59**
Severe Thunderstorm	3	6	8	19	33	**53**
Urban Fire/ Structural Fire	3	3	5	24	32	**52**
Hazardous Material Incident	2	11	11	24	46	**50**
Mass Transportation Incident	2	8	12	25	45	**49**
High Wind and Tornado	2	8	13	22	43	**47**
Public Health Emergency	2	8	9	26	43	**47**
Wildfire	2	6	8	19	33	**37**
Cyber Incident	2	4	9	17	30	**34**
Earthquake	1	8	13	29	50	**29**
Civil Disorder/Riot	1	10	13	20	43	**26**
Terrorism/ Active Assailant	1	7	8	21	36	**22**
Land Loss	1	4	7	21	32	**20**
Landslide	1	5	7	19	31	**19**
Drought	1	4	8	16	28	**18**
Dam/Levee Failure	0	4	8	25	37	**0**
Riverine Flood	0	3	5	23	31	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Install necessary infrastructure to mitigate run off during all new street construction projects						
Action #	47-01	**Year Initiated**	2023	**Current Status**	New	**STAPLEE+E Score**	39/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Develop public education program specific to active shooter						
Action #	47-02	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	35

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Implemented at schools need TXG for municipal employees.
2024		
2025		
2026		
2027		

Mitigation Action	Conduct flow study per NFIP requirement on Waverly Road						
Action #	47-03	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	35

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Need a study ($$) to take out of floodplain.
2024		
2025		
2026		
2027		

Mitigation Action	Implement cyber security and cyber infrastructure enhancements						
Action #	47-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	34

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Continual process
2024		
2025		
2026		
2027		

Mitigation Action	Implement prevention and mitigation measures to prepare for active shooter incidents						
Action #	47-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Combine with first.
2024		

2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	47-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	On order…supply chain issues.
2024		
2025		
2026		
2027		

Mitigation Action	Develop and/or participate in an enhanced county-wide emergency notification communication system						
Action #	47-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	21

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Use CodeRed mitigate to Alert Hamilton County.
2024		
2025		
2026		
2027		

Mitigation Action	Develop/Upgrade storm water drainage plans to guide surface water through proper channels						
Action #	47-08	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	19

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Contract Hamilton County for a plan
2024		
2025		
2026		
2027		

Mitigation Action	Conduct engineering impact studies on flood mitigation						
Action #	47-09	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	23

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Unnecessary due to street studies
2024		
2025		
2026		
2027		

Mitigation Action	Enhanced snow removal equipment and supplies						
Action #	47-10	**Year Initiated**	2013	**Current Status**	Complete	**Prioritization Score**	22

Annual Project Maintenance

Year	Status	Comments
2023	Ongoing	Purchased new trucks, plows, and equipment (2022)
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study to address the carcinogenic properties of Flint Ink for first responder						
Action #	47-11	**Year Initiated**	2013	**Current Status**	Archive	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Archive	Property sold under remediation
2024		
2025		
2026		
2027		

Wyoming – City

Planning Team

2023 Local Planning Team Representatives and Contact Information

Last Name	First Name	Title	Organization	Email
Brady	Brooke	Police Chief	Police Department	bbrady@wyomingohio.gov
Caudill	Jeremiah	Finance Director	Customer Service & Finance Department	jcaudill@wyoming.gov
Herzog	Rusty	City Manager	Administration	rherzog@wyomingohio.gov
Leininger	Rachel	Director	Recreation Department	rleininger@wyomingohio.gov
Lippert	Michael	Director	Water works/Public Works	mlippert@wyomingohio.gov
Brown	Dennis	Fire Chief	Fire & EMS Department	dbrown@wyomingohio.gov
Monich	Melissa	Mayor	City Council	mmonich@wyomingohio.gov
Statt Blake	Megan	Director	Community Development	mstattblake@wyomingohio.gov
Zeilman	Karen	Director of Administration	City Council	kzeilman@wyomingohio.gov

Jurisdiction Participation

Community Mitigation Survey Responses	Represented at Workshop/Meeting	Submitted a Hazard Analysis for the Jurisdiction	Reviewed/Updated Past Mitigation Action(s)	Submitted At Least One (1) New Mitigation Action
Yes (17 Responses)	Yes	No	Yes	Yes

Planning Team Participation

Name	Workshop/Meeting Attendance	Reviewed Draft Plan	Other Participation Activities
Brooke Brady	Yes		3/1/2023, 9:00 am – 12:00 pm
Dennis Brown	Yes		3/1/2023, 9:00 am – 12:00 pm
Rusty Herzog	Yes		3/1/2023, 9:00 am – 12:00 pm
Rachel Leininger	Yes		3/1/2023, 9:00 am – 12:00 pm
Megan Statt Blake	Yes		3/1/2023, 9:00 am – 12:00 pm

Community Profile & Description

The completion of the Miami & Erie Canal in neighboring Lockland in the late 1820s opened the doors for growth and industry in the City of Wyoming. Many Lockland factory owners chose to build their homes in Wyoming. Significant growth in Wyoming did not occur until the Cincinnati, Hamilton, and Dayton Railroad was put into service in 1851. In 1949, the village became a city of over 5,000 persons, implementing the City Manager form of government. The City is 2.87 square miles. As of the 2021 American Community Survey 5-Year population estimate, the population is 8,619.

Hazard Analysis

Cyber Incident: A cyberattack disrupting water distribution at the city water plant is a major concern.

Flood (Flash): 1) The city has experienced many issues with basement flooding due to sewer backup issues with MSD, including the areas of Wyoming, Stout and Barney, Waverly, and Grove. 2) North Park Avenue is vulnerable to flooding due to Mill Creek.

Hazardous Materials Incident: The CSX railway, which runs along the east side of town, could potentially be susceptible to hazardous materials release.

High Wind and Tornado: Big and old trees are vulnerable to damage during tornado or high wind incidents. These events could also cause downed powerlines causing utility damage and damage to private property.

Infrastructure and Structural Failure: Critical facilities may be in need of back power. For example, the public safety facility is in need of a new generator because the current generator is inadequate. Also, backup power is needed at the recreation center, which serves as a facility to accommodate the public during public safety incidents.

Landslide: The 400 block of Galbraith has had issues with landslides and is an area of concern.

Mass Transportation Incident: The city's proximity to Interstate 75 and the CSX Railway (along the eastern border), make the city vulnerable to HAZMAT incidents, such as a derailment and/or chemical spill.

Severe Thunderstorm: Severe thunderstorms can cause downed powerlines and home damage which are a concern to the city.

Severe Winter Storm: Severe Winter weather can cause downed powerlines and home damage which is a concern to the city.

Land Loss (i.e., Sinkhole/Karst/Subsidence Erosion): The old landfill located at Oak Park is vulnerable to subsidence.

Terrorism/Active Assailant: Water utilities are a potential target for terrorism.

Infrastructure and Structural Failure: Wyoming has its own water plant, water tower and wells that are vulnerable to utility failure.

Wyoming Hazard Rankings

	Probability	Consequence				Total Risk
Hazard Event	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score*** (Probability x Consequence)
Urban Fire/ Structural Fire	3	3	6	25	34	**54**
High Wind and Tornado	2	8	14	25	47	**51**
Severe Winter Storm	2	4	12	29	45	**49**
Extreme Cold Incident	2	3	12	28	43	**47**
Flash Flood	2	4	9	29	42	**46**
Civil Disorder/Riot	2	7	12	22	41	**45**
Extreme Heat Incident	2	3	12	26	41	**45**
Hazardous Material Incident	2	7	9	24	40	**44**
Cyber Incident	2	8	10	20	38	**42**
Infrastructure and Structural Failure	2	5	12	20	37	**41**
Riverine Flood	2	5	6	25	36	**40**
Severe Thunderstorm	2	4	9	22	35	**39**
Mass Transportation Incident	2	3	4	24	31	**35**
Public Health Emergency	1	6	10	27	43	**26**
Dam/Levee Failure	1	4	6	28	38	**23**
Terrorism/ Active Assailant	1	7	9	22	38	**23**
Landslide	1	2	4	20	26	**17**
Drought	1	1	4	19	24	**16**
Earthquake	0	3	14	31	48	**0**
Land Loss	0	3	4	22	29	**0**
Wildfire	0	1	1	17	19	**0**

**Normalized to 100*

Classification	**Probability Factor**	**Sum of Weighted Extent Factors**	**Sum of Weighted Vulnerability Factors**	**Sum of Weighted Impact Factors**	**Consequence Score**	**Total Risk Score**
Low (L)	1	0–4	0–6	0–13	0–23	0–33
Medium (M)	2	5–8	7–12	14–26	24–46	34–66
High (H)	3	9–12	13–18	27–39	47–69	67–100

This legend—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The jurisdiction probability factor score is not weighted. Unlike when ranking Hamilton County, the probability factor was weighted by each jurisdiction population size.

The Consequence Score represents the sum of the Extent, Vulnerability, and Impact Factors.

The Total Risk Score is a product of Probability and Consequence.

Mitigation Actions

Mitigation Action	Upgrade of public safety building to allow long term habitation of first responders and law enforcement in event of an extended emergency and upgrade of Emergency Operations Center to utilize current technology available						
Action #	48-01	**Year Initiated**	2025	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Security to monitor and identify security attacks and vulnerabilities						
Action #	48-02	**Year Initiated**	2024	**Current Status**	New	**STAPLEE+E Score**	35/40

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	New	
2024		
2025		
2026		
2027		

Mitigation Action	Upgrade traffic control devices – Wyoming carries large amount of traffic when 75 has obstructions – Current infrastructure struggles with heavy flow of traffic

Action #	48-03	Year Initiated	2018	Current Status	Complete	STAPLEE Score	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Complete	New Traffic Lights and system
2024		
2025		
2026		
2027		

Mitigation Action	New generator for public safety facility						
Action #	48-04	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	31

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Applied for funding (currently not funded)
2024		
2025		
2026		
2027		

Mitigation Action	Study the adequacy of the culvert under Fleming Road at Chatham Court and increase its size to eliminate flooding of properties at the upstream side						
Action #	48-05	**Year Initiated**	2018	**Current Status**	Ongoing	**STAPLEE Score**	27

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Made some changes

2024		
2025		
2026		
2027		

Mitigation Action	Procure generators and transfer switches for schools, public facilities, and critical facilities						
Action #	48-06	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	26

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	Need funding
2024		
2025		
2026		
2027		

Mitigation Action	Conduct a study regarding industrial vulnerability						
Action #	48-07	**Year Initiated**	2013	**Current Status**	Ongoing	**Prioritization Score**	22

Annual Project Maintenance		
Year	**Status**	**Comments**
2023	Ongoing	EMA is tracking and mapping by state law and have real time access through Raven.
2024		
2025		
2026		

2027		

Appendix C – Additional Hazard Analysis Documentation

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100-Year Flood Analysis C-2
500-Year Flood Analysis 18
Earthquake Analysis C-355

Flood Analysis

100-Year Flood Analysis



Hazus: Flood Global Risk Report

Region Name:	Hamilton_OH
Flood Scenario:	Full
Print Date:	Wednesday, March 29, 2023

Disclaimer:
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.





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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Ohio

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 148 square miles and contains 8,664 census blocks. The region contains over 347 thousand households and has a total population of 830,623 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 286,201 buildings in the region with a total building replacement value (excluding contents) of 153,873 million dollars. Approximately 87.24% of the buildings (and 58.13% of the building value) are associated with residential housing.

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Building Inventory

General Building Stock

Hazus estimates that there are 286,201 buildings in the region which have an aggregate total replacement value of 153,873 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	89,445,233	58.1%
Commercial	38,217,305	24.8%
Industrial	11,092,018	7.2%
Agricultural	468,027	0.3%
Religion	2,985,794	1.9%
Government	2,384,580	1.5%
Education	9,280,019	6.0%
Total	**153,872,976**	**100%**

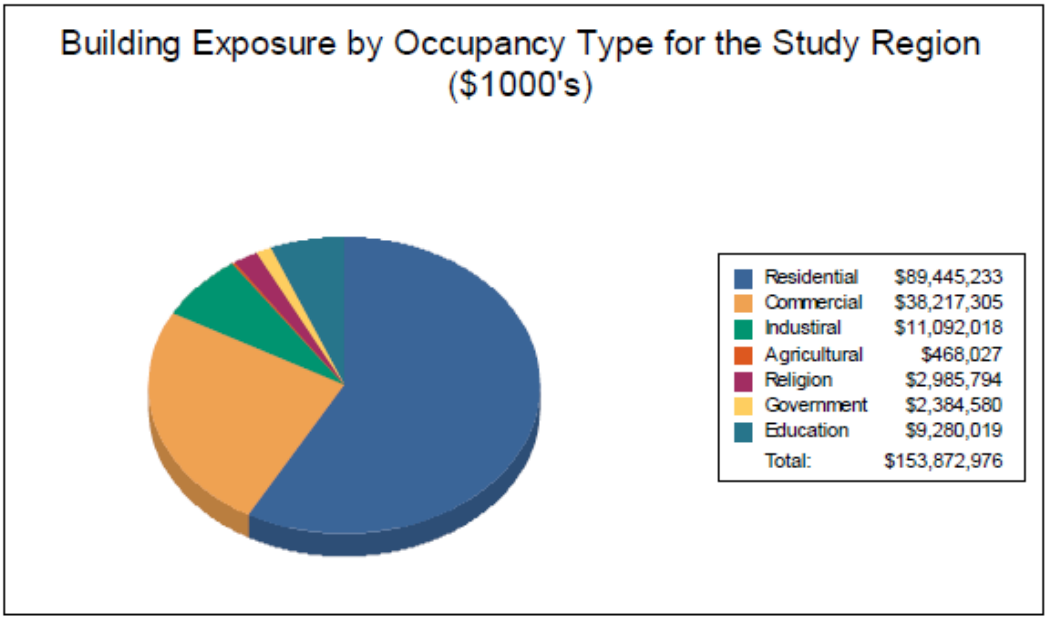
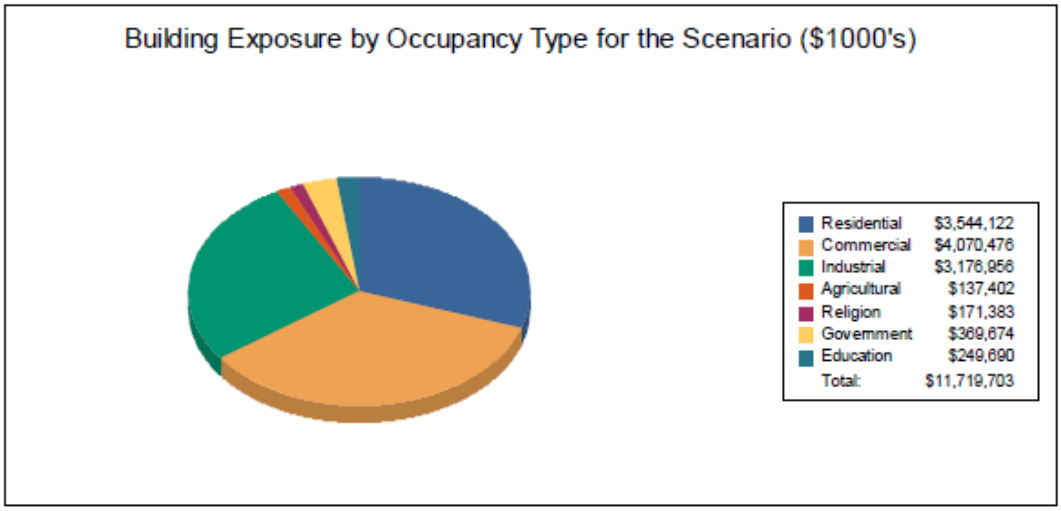


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	3,544,122	30.2%
Commercial	4,070,476	34.7%
Industrial	3,176,956	27.1%
Agricultural	137,402	1.2%
Religion	171,383	1.5%
Government	369,674	3.2%
Education	249,690	2.1%
Total	**11,719,703**	**100%**



Essential Facility Inventory

For essential facilities, there are 27 hospitals in the region with a total bed capacity of 5,326 beds. There are 323 schools, 97 fire stations, 60 police stations and 1 emergency operation center.

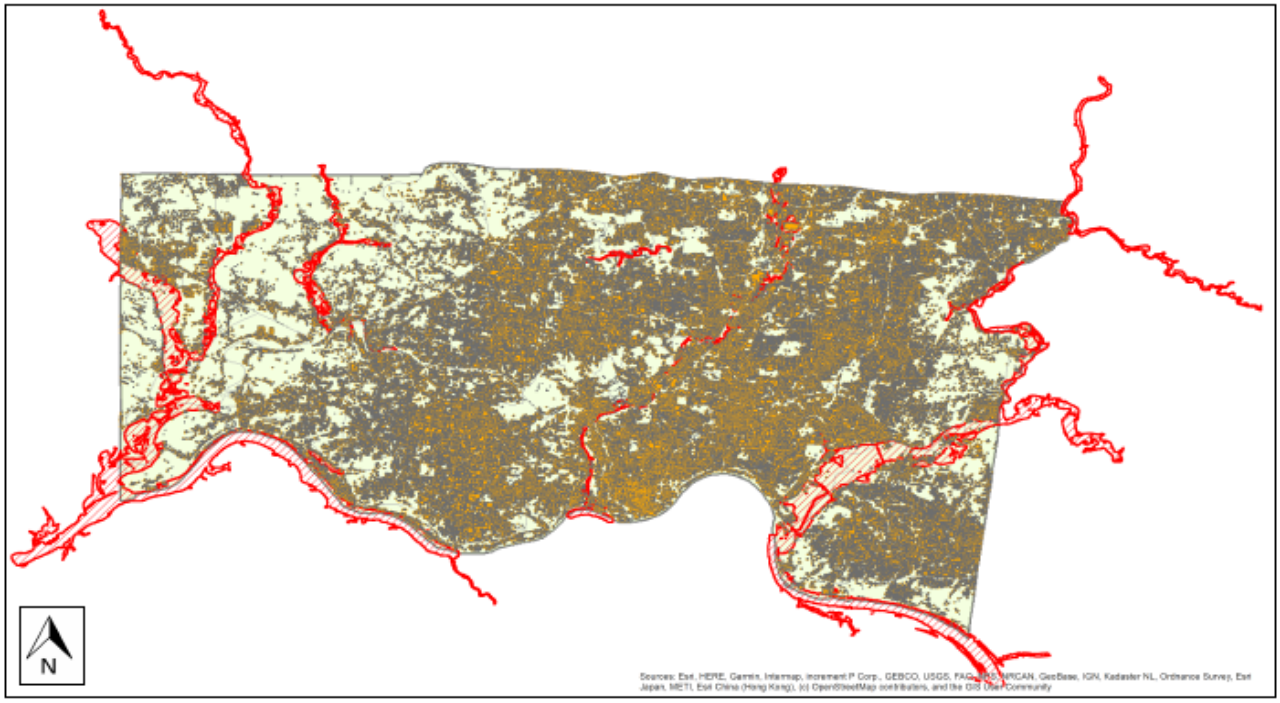
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Hamilton_OH
Scenario Name:	Full
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



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Building Damage

General Building Stock Damage

Hazus estimates that about 764 buildings will be at least moderately damaged. This is over 83% of the total number of buildings in the scenario. There are an estimated 21 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = $300K) Overview Map

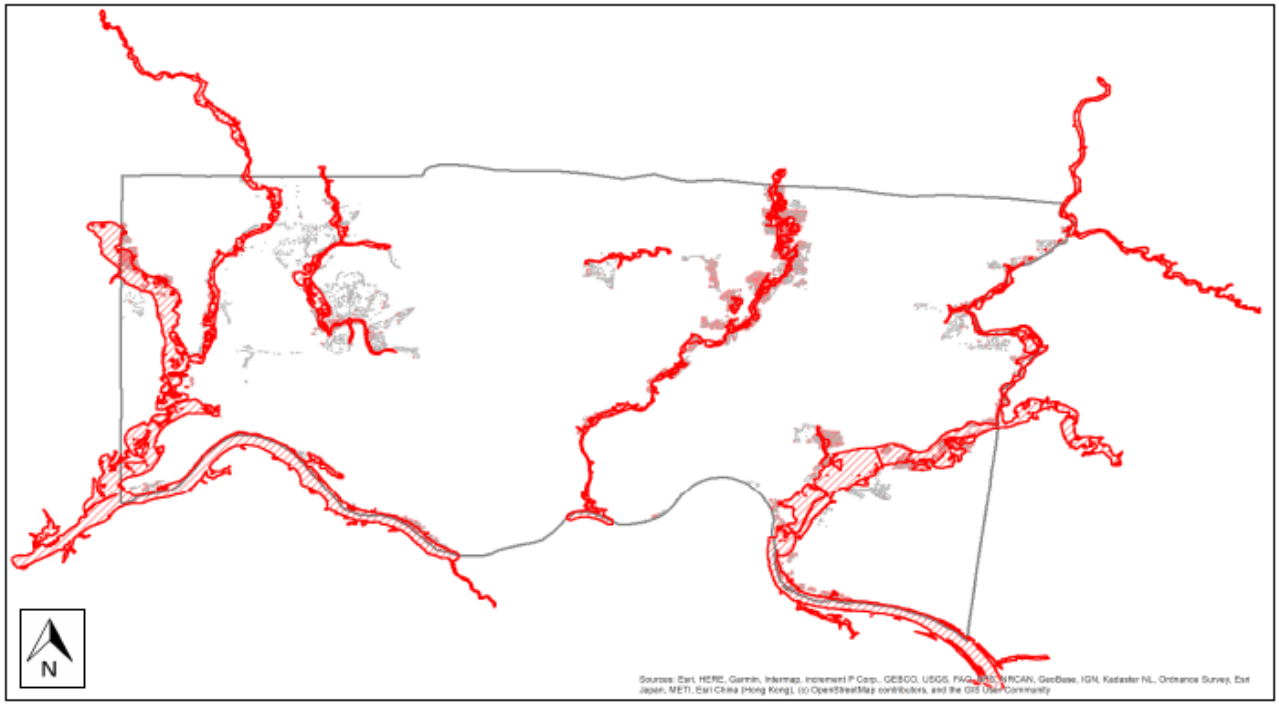


Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		>50	
Occupancy	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	1	50	1	50	0	0	0	0	0	0	0	0
Commercial	21	34	34	55	5	8	2	3	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	1	100	0	0	0	0	0	0	0	0
Industrial	7	33	12	57	1	5	1	5	0	0	0	0
Religion	1	17	5	83	0	0	0	0	0	0	0	0
Residential	159	18	391	45	194	23	68	8	28	3	21	2
Total	**189**		**444**		**200**		**71**		**28**		**21**	

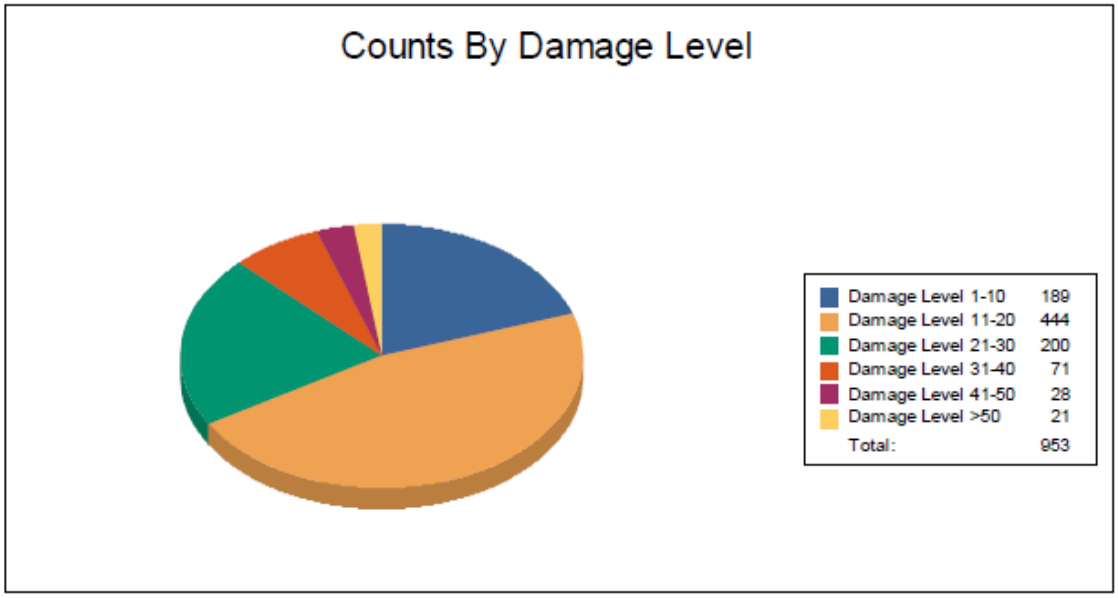


Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	5	50	5	50	0	0	0	0	0	0	0	0
ManufHousing	0	0	2	29	0	0	0	0	1	14	4	57
Masonry	33	18	98	54	40	22	9	5	3	2	0	0
Steel	6	33	11	61	1	6	0	0	0	0	0	0
Wood	134	19	314	45	157	22	59	8	24	3	17	2

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 5,326 hospital beds available for use. On the day of the scenario flood event, the model estimates that 5,326 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	1	0	0	0
Fire Stations	97	0	0	0
Hospitals	27	0	0	0
Police Stations	60	0	0	0
Schools	323	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

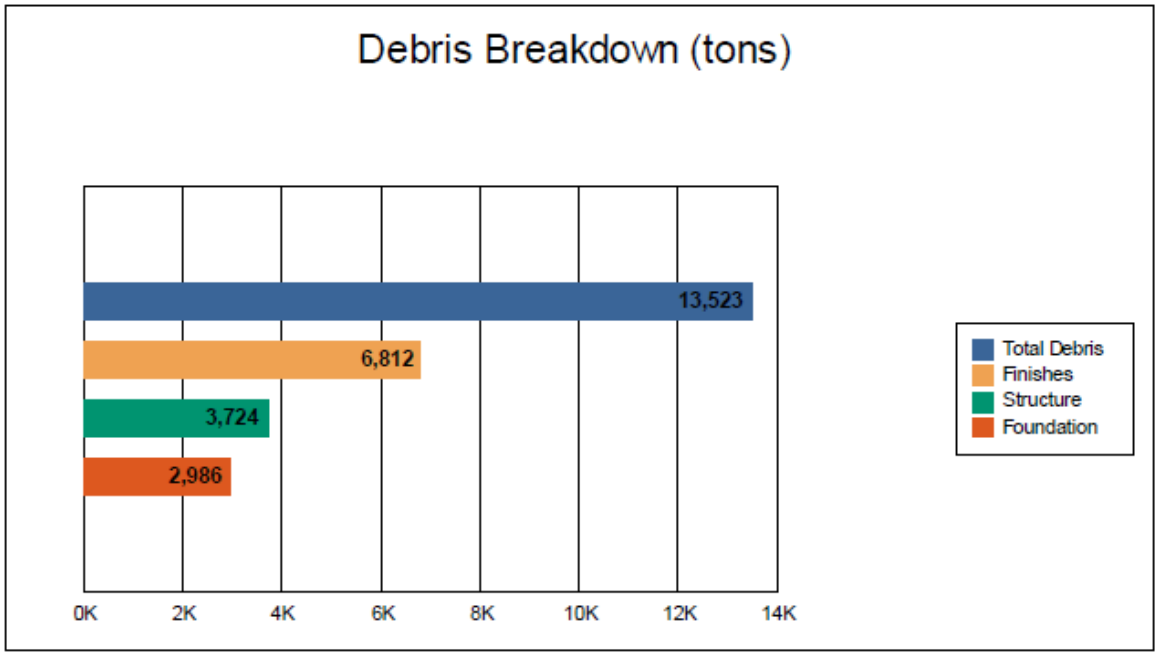
(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

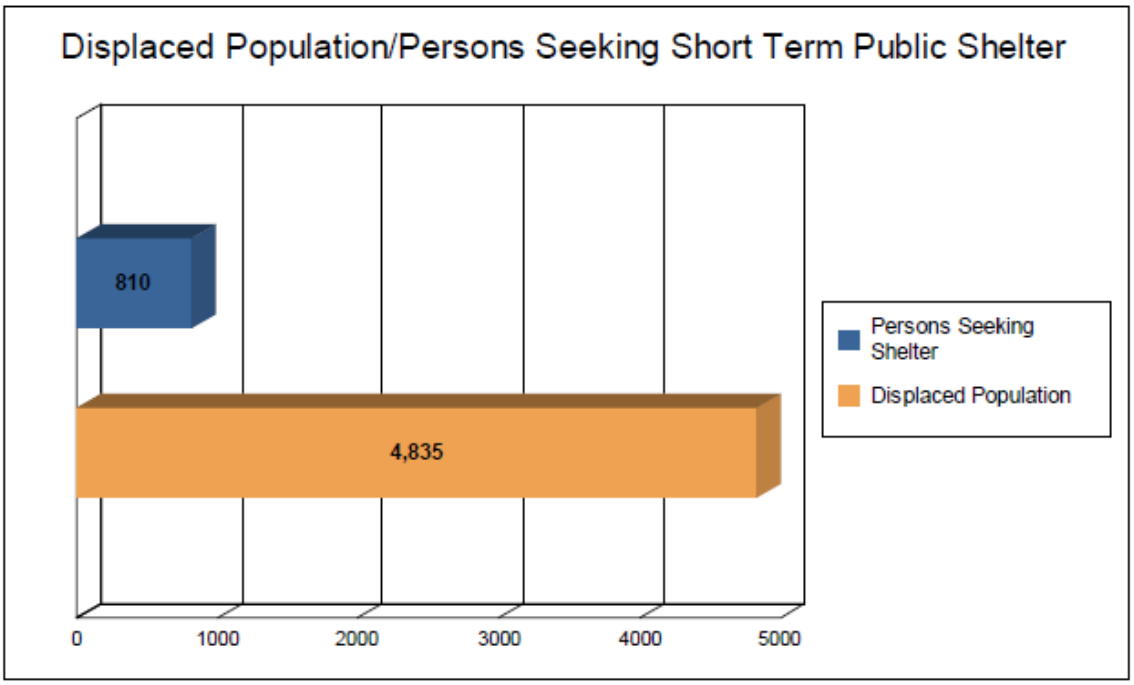


The model estimates that a total of 13,523 tons of debris will be generated. Of the total amount, Finishes comprises 50% of the total, Structure comprises 28% of the total, and Foundation comprises 22%. If the debris tonnage is converted into an estimated number of truckloads, it will require 541 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 1,612 households (or 4,835 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 810 people (out of a total population of 830,623) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 1,449.50 million dollars, which represents 12.37 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 829.49 million dollars. 43% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 10.97% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

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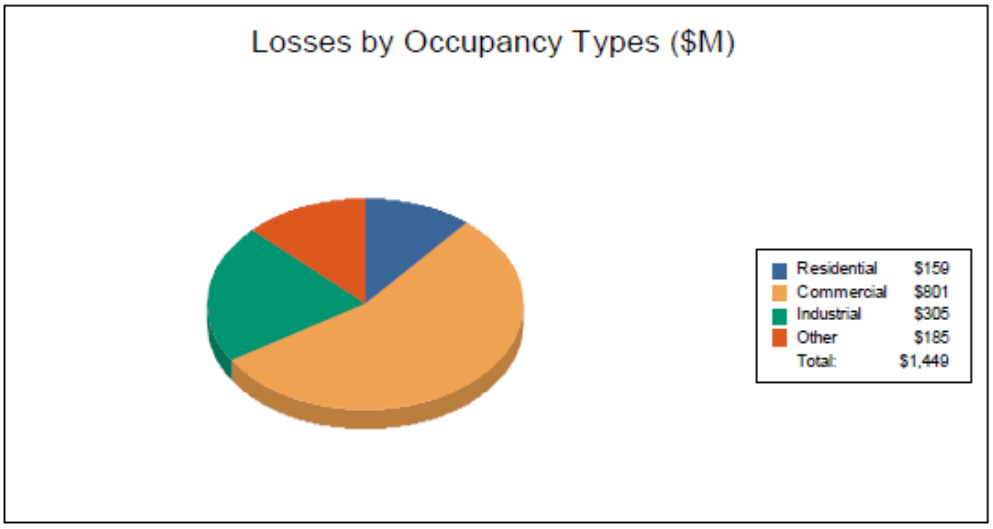
Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	74.63	80.04	69.61	10.37	234.63
	Content	38.13	229.34	174.61	51.09	493.17
	Inventory	0.00	59.32	33.06	9.31	101.69
	Subtotal	**112.75**	**368.70**	**277.28**	**70.76**	**829.49**
Business Interruption						
	Income	4.24	153.08	6.94	15.11	179.37
	Relocation	21.42	56.21	7.99	9.59	95.21
	Rental Income	10.67	40.44	1.96	1.63	54.70
	Wage	9.96	182.46	10.85	87.47	290.74
	Subtotal	**46.28**	**432.18**	**27.74**	**113.81**	**620.01**
ALL	**Total**	**159.04**	**800.88**	**305.01**	**184.57**	**1,449.50**





Appendix A: County Listing for the Region

Ohio
- Hamilton



Appendix B: Regional Population and Building Value Data

		Building Value (thousands of dollars)		
	Population	Residential	Non-Residential	Total
Ohio				
Hamilton	830,623	89,445,233	64,427,743	153,872,976
Total	**830,623**	**89,445,233**	**64,427,743**	**153,872,976**
Total Study Region	**830,623**	**89,445,233**	**64,427,743**	**153,872,976**

500-Year Flood Analysis



Hazus: Flood Global Risk Report

Region Name:	Hamilton_OH
Flood Scenario:	Full
Print Date:	Wednesday, March 29, 2023

Disclaimer:
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Ohio

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 148 square miles and contains 8,664 census blocks. The region contains over 347 thousand households and has a total population of 830,623 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 286,201 buildings in the region with a total building replacement value (excluding contents) of 153,873 million dollars. Approximately 87.24% of the buildings (and 58.13% of the building value) are associated with residential housing.

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Building Inventory

General Building Stock

Hazus estimates that there are 286,201 buildings in the region which have an aggregate total replacement value of 153,873 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	89,445,233	58.1%
Commercial	38,217,305	24.8%
Industrial	11,092,018	7.2%
Agricultural	468,027	0.3%
Religion	2,985,794	1.9%
Government	2,384,580	1.5%
Education	9,280,019	6.0%
Total	**153,872,976**	**100%**

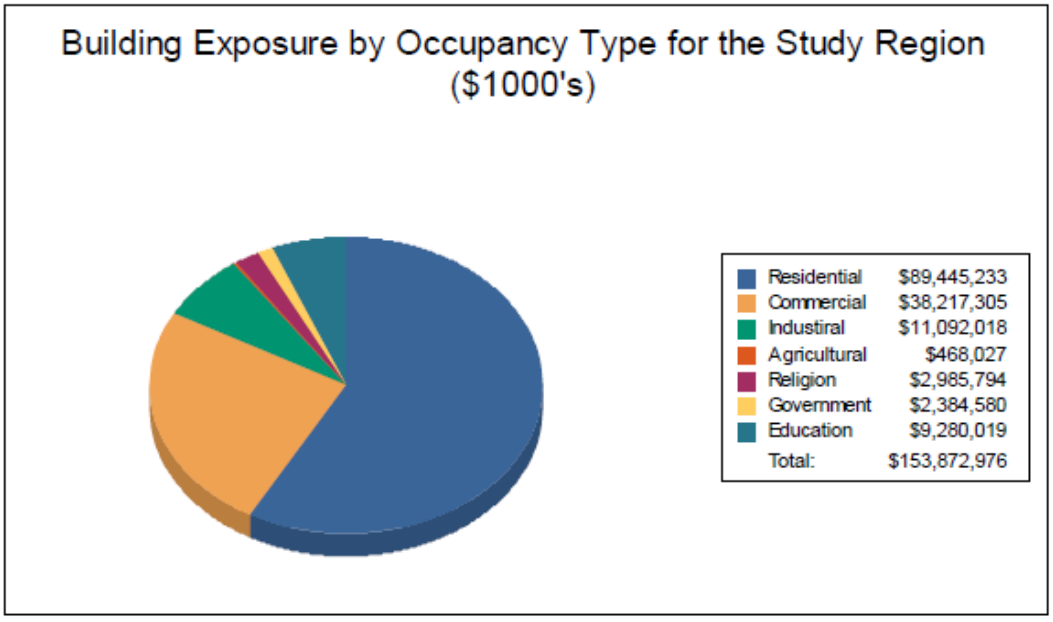
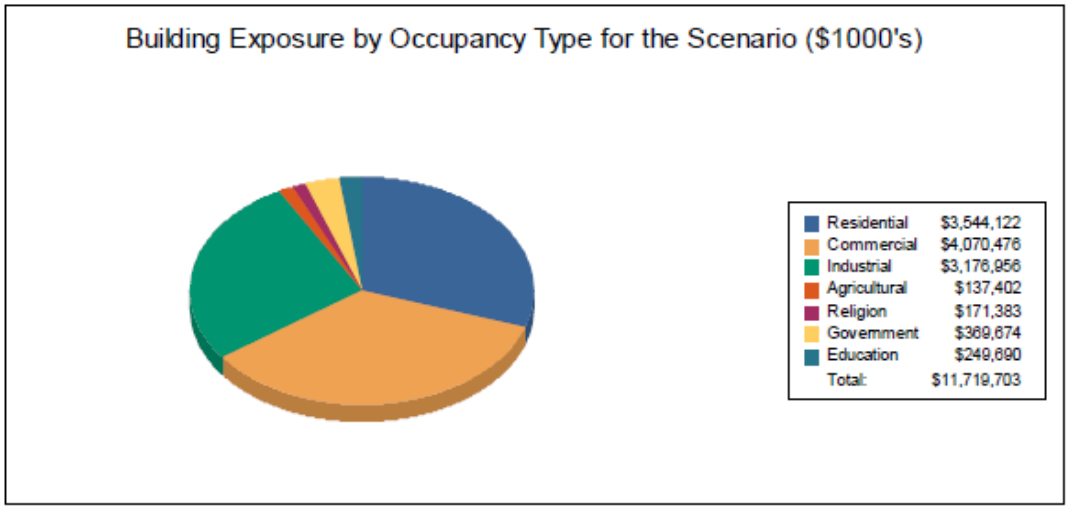


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	3,544,122	30.2%
Commercial	4,070,476	34.7%
Industrial	3,176,956	27.1%
Agricultural	137,402	1.2%
Religion	171,383	1.5%
Government	369,674	3.2%
Education	249,690	2.1%
Total	**11,719,703**	**100%**



Essential Facility Inventory

For essential facilities, there are 27 hospitals in the region with a total bed capacity of 5,326 beds. There are 323 schools, 97 fire stations, 60 police stations and 1 emergency operation center.

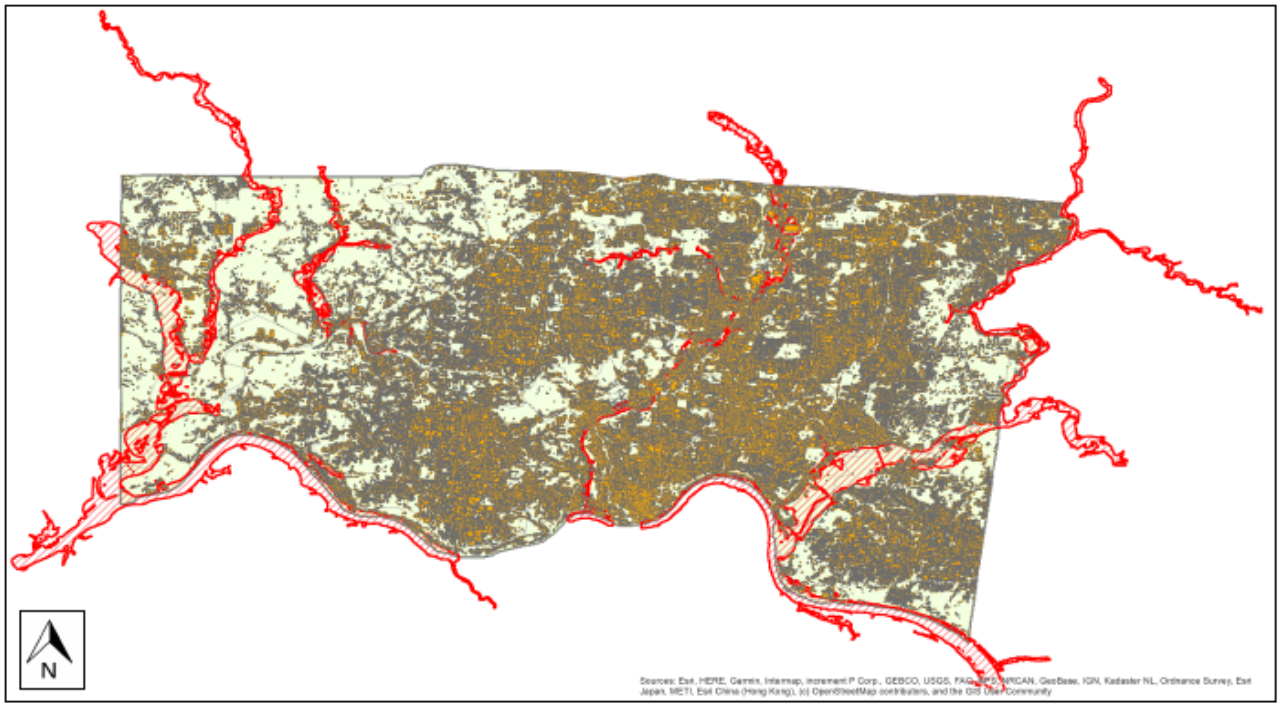
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Hamilton_OH
Scenario Name:	Full
Return Period Analyzed:	500
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



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Building Damage

General Building Stock Damage

Hazus estimates that about 1,052 buildings will be at least moderately damaged. This is over 75% of the total number of buildings in the scenario. There are an estimated 44 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = $300K) Overview Map

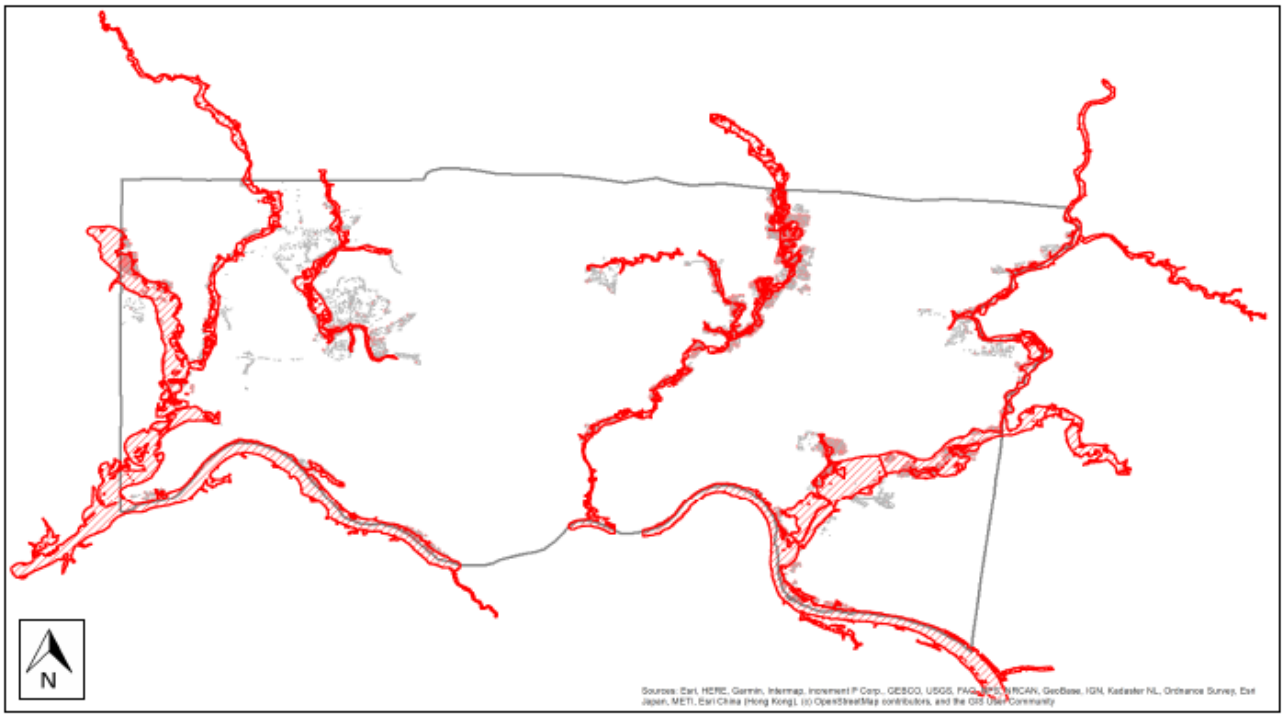


Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		>50	
Occupancy	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	2	50	1	25	0	0	0	0	1	25	0	0
Commercial	24	27	51	57	8	9	3	3	4	4	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	1	100	0	0	0	0	0	0	0	0
Industrial	9	25	19	53	3	8	4	11	1	3	0	0
Religion	0	0	6	100	0	0	0	0	0	0	0	0
Residential	178	16	425	38	282	25	136	12	63	6	44	4
Total	**213**		**503**		**293**		**143**		**69**		**44**	

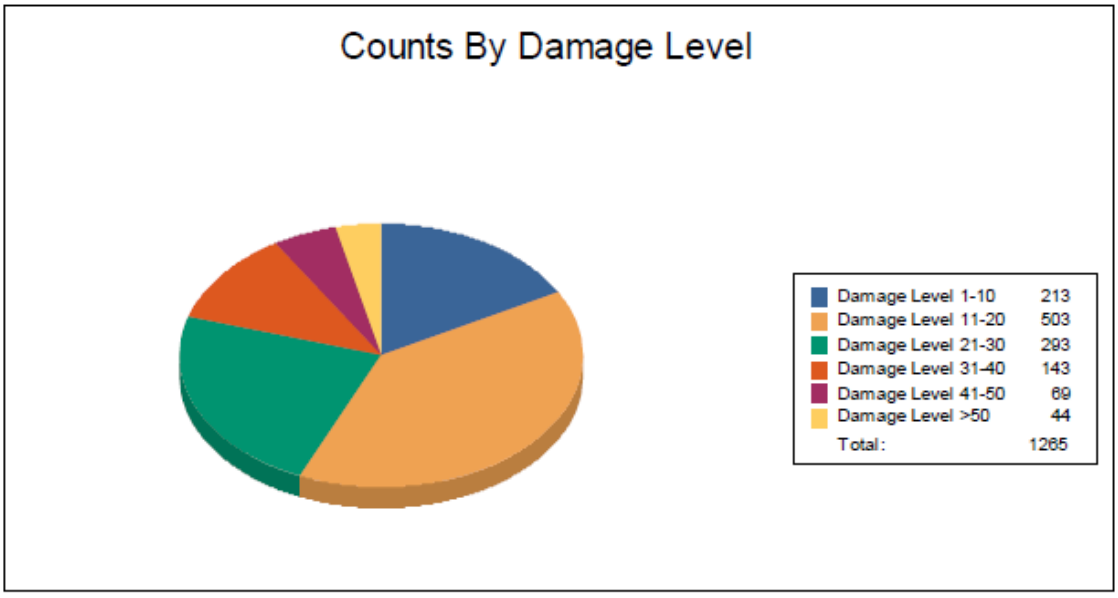




Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	7	44	8	50	1	6	0	0	0	0	0	0
ManufHousing	0	0	0	0	1	11	0	0	1	11	7	78
Masonry	40	17	108	45	59	25	23	10	8	3	1	0
Steel	11	31	21	60	2	6	0	0	1	3	0	0
Wood	154	16	356	38	228	24	115	12	55	6	36	4

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 5,326 hospital beds available for use. On the day of the scenario flood event, the model estimates that 5,326 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	1	0	0	0
Fire Stations	97	0	0	0
Hospitals	27	0	0	0
Police Stations	60	0	0	0
Schools	323	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

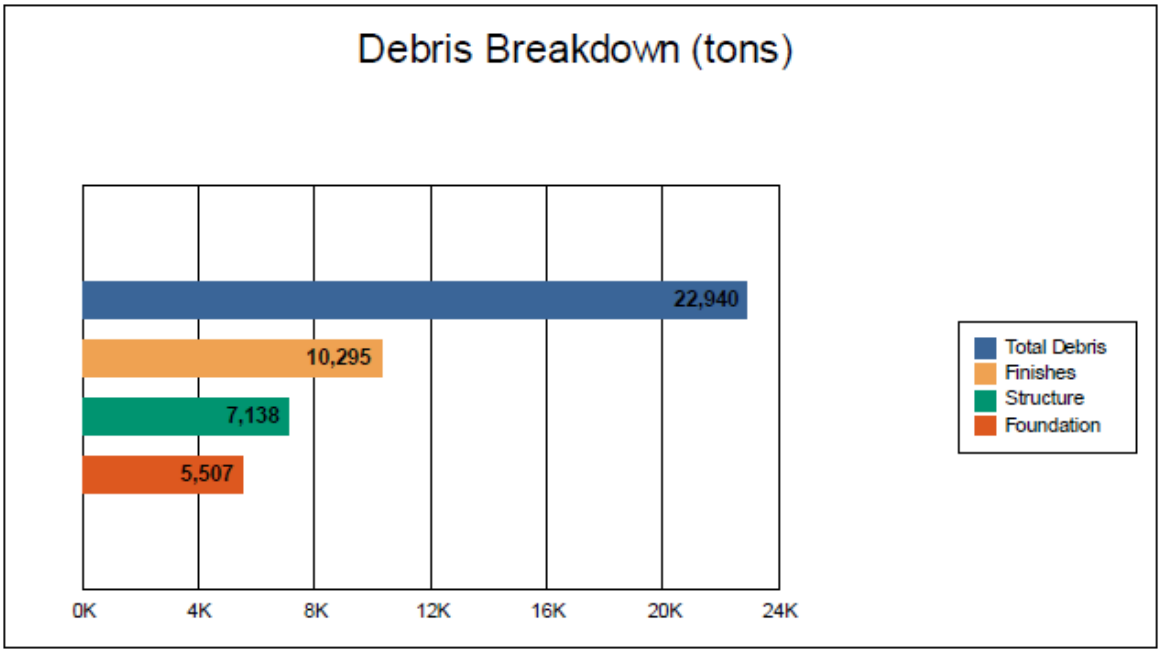
(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

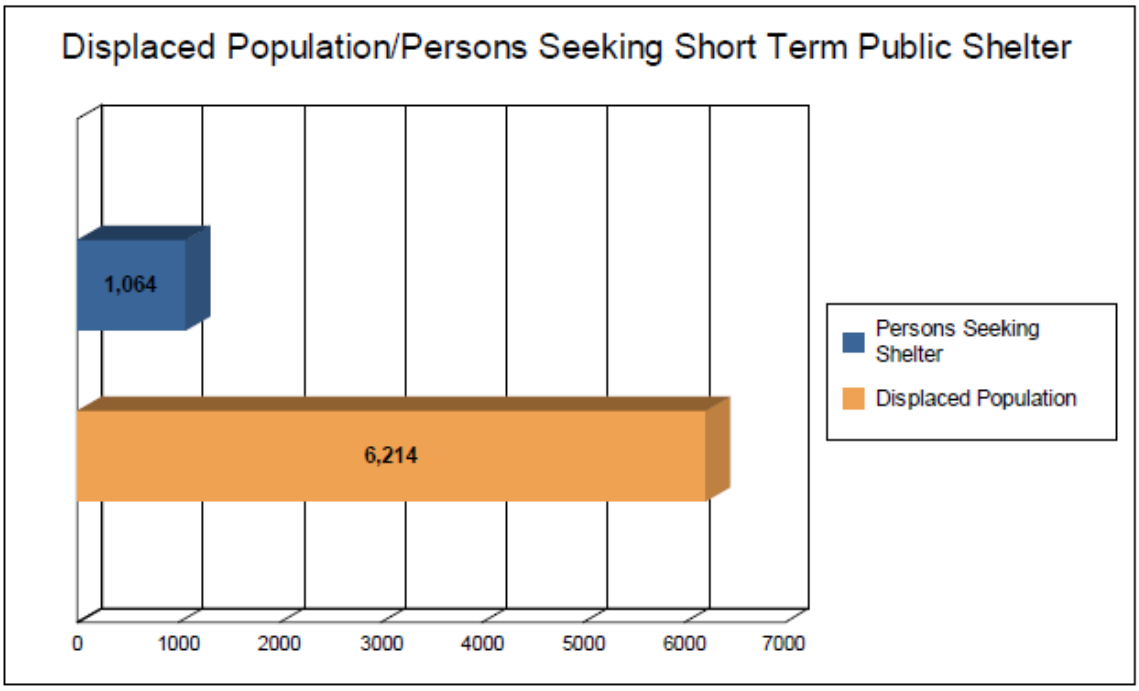


The model estimates that a total of 22,940 tons of debris will be generated. Of the total amount, Finishes comprises 45% of the total, Structure comprises 31% of the total, and Foundation comprises 24%. If the debris tonnage is converted into an estimated number of truckloads, it will require 918 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 2,071 households (or 6,214 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,064 people (out of a total population of 830,623) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 2,513.99 million dollars, which represents 21.45 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 1,322.12 million dollars. 47% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 9.03% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

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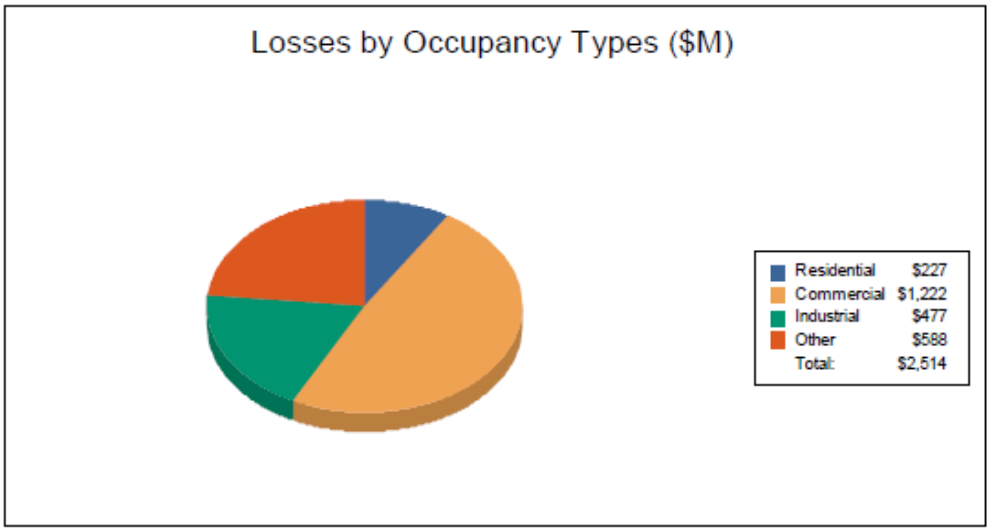
Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	111.51	132.53	108.72	20.02	372.79
	Content	55.97	360.32	276.06	96.87	789.22
	Inventory	0.00	94.30	51.31	14.50	160.12
	Subtotal	**167.49**	**587.15**	**436.10**	**131.39**	**1,322.12**
Business Interruption						
	Income	4.54	230.52	10.35	29.13	274.53
	Relocation	29.71	82.06	11.38	26.14	149.28
	Rental Income	14.53	59.58	3.01	7.30	84.42
	Wage	10.67	262.71	15.78	394.48	683.64
	Subtotal	**59.45**	**634.87**	**40.52**	**457.04**	**1,191.87**
ALL	**Total**	**226.93**	**1,222.01**	**476.62**	**588.43**	**2,513.99**





Appendix A: County Listing for the Region

Ohio

- Hamilton



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Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Ohio				
Hamilton	830,623	89,445,233	64,427,743	153,872,976
Total	**830,623**	**89,445,233**	**64,427,743**	**153,872,976**
Total Study Region	**830,623**	**89,445,233**	**64,427,743**	**153,872,976**

Earthquake Analysis

Hazus: Earthquake Global Risk Report

Region Name: Hamilton_OH_EQ

Earthquake Scenario: 100y_mag5

Print Date: March 30, 2023

Disclaimer:
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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Appendix A: County Listing for the Region

Appendix B: Regional Population and Building Value Data

General Description of the Region

Hazus-MH is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 1 county(ies) from the following state(s):

Ohio

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 413.15 square miles and contains 226 census tracts. There are over 347 thousand households in the region which has a total population of 830,639 peopleF. The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 286 thousand buildings in the region with a total building replacement value (excluding contents) of 153,886 (millions of dollars). Approximately 87.00 % of the buildings (and 58.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 14,790 and 8,695 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 286 thousand buildings in the region which have an aggregate total replacement value of 153,886 (millions of dollars) . Appendix B provides a general distribution of the building value by Total Region and County.

In terms of building construction types found in the region, wood frame construction makes up 69% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 27 hospitals in the region with a total bed capacity of 5,326 beds. There are 323 schools, 97 fire stations, 60 police stations and 1 emergency operation facilities. With respect to high potential loss facilities (HPL), there are no dams identified within the inventory. The inventory also includes no hazardous material sites, no military installations and no nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 23,485.00 (millions of dollars). This inventory includes over 397.06 miles of highways, 792 bridges, 5,802.36 miles of pipes.

Table 1: Transportation System Lifeline Inventory

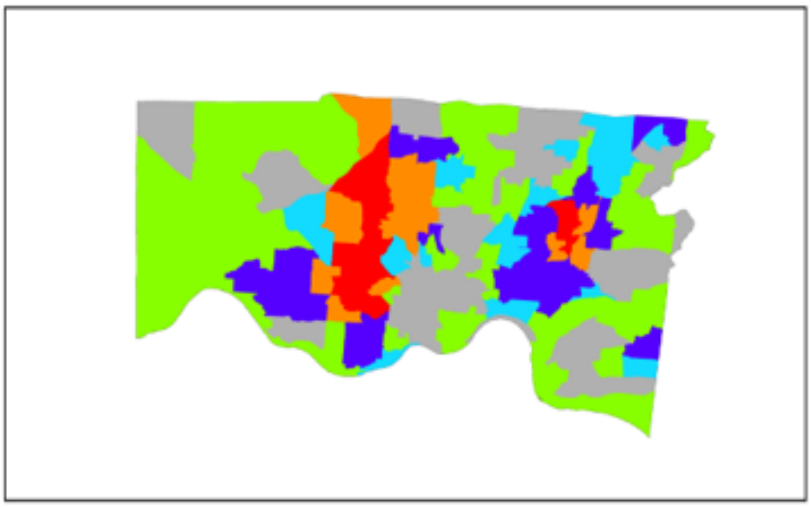
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	792	5291.4501
	Segments	551	4687.5869
	Tunnels	3	29.5914
		Subtotal	10008.6284
Railways	Bridges	146	662.8400
	Facilities	20	53.2600
	Segments	130	3711.2137
	Tunnels	0	0.0000
		Subtotal	4427.3137
Light Rail	Bridges	0	0.0000
	Facilities	0	0.0000
	Segments	1	94.9674
	Tunnels	0	0.0000
		Subtotal	94.9674
Bus	Facilities	1	1.7881
		Subtotal	1.7881
Ferry	Facilities	1	1.3310
		Subtotal	1.3310
Port	Facilities	70	212.9005
		Subtotal	212.9005
Airport	Facilities	2	18.6560
	Runways	4	24.7568
		Subtotal	43.4128
		Total	14,790.30

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	116.4693
	Facilities	3	104.8950
	Pipelines	0	0.0000
		Subtotal	221.3643
Waste Water	Distribution Lines	NA	69.8816
	Facilities	22	3018.3736
	Pipelines	0	0.0000
		Subtotal	3088.2552
Natural Gas	Distribution Lines	NA	46.5877
	Facilities	0	0.0000
	Pipelines	9	94.1699
		Subtotal	140.7576
Oil Systems	Facilities	3	0.3150
	Pipelines	0	0.0000
		Subtotal	0.3150
Electrical Power	Facilities	5	5241.4693
		Subtotal	5241.4693
Communication	Facilities	30	3.1500
		Subtotal	3.1500
		Total	8,695.30

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	100y_mag5
Type of Earthquake	Probabilistic
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	100.00
Longitude of Epicenter	NA
Latitude of Epicenter	NA
Earthquake Magnitude	5.00
Depth (km)	NA
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	NA

Direct Earthquake Damage

Building Damage

Hazus estimates that about 0 buildings will be at least moderately damaged. This is over 0.00 % of the buildings in the region. There are an estimated 0 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage Categories by General Occupancy Type

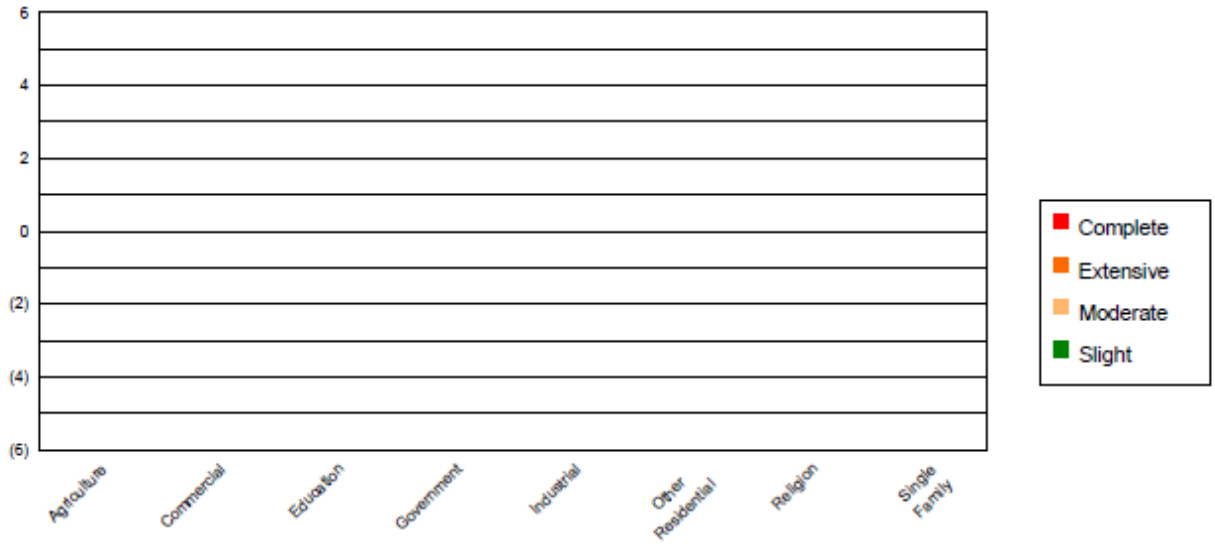


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	871.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial	25479.00	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	556.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Government	1418.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industrial	5928.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Residential	27972.00	9.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Religion	2255.00	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Single Family	221722.00	77.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	286,201		0		0		0		0	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	197298.30	68.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Steel	10834.81	3.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Concrete	2876.28	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Precast	2893.95	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RM	1328.74	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
URM	69617.92	24.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MH	1351.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	286,201		0		0		0		0	

*Note:
RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 5,326 hospital beds available for use. On the day of the earthquake, the model estimates that only 5,294 hospital beds (99.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 100.00% of the beds will be back in service. By 30 days, 100.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	27	0	0	27
Schools	323	0	0	323
EOCs	1	0	0	1
PoliceStations	60	0	0	60
FireStations	97	0	0	97

Transportation Lifeline Damage

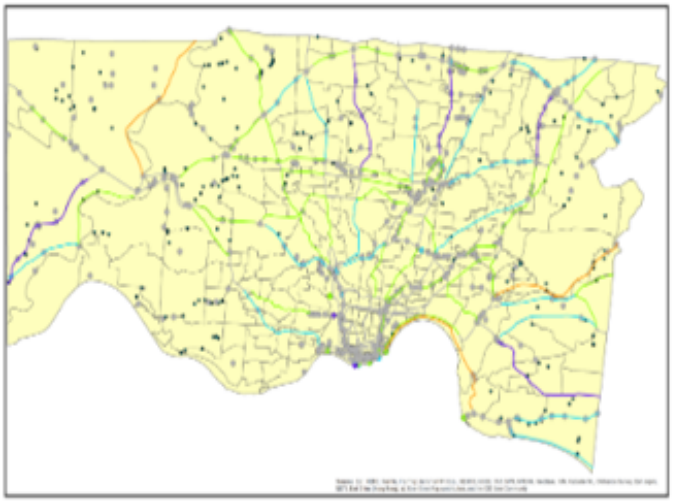


Table 6: Expected Damage to the Transportation Systems

System	Component		Number of Locations			
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	551	0	0	551	551
	Bridges	792	0	0	792	792
	Tunnels	3	0	0	3	3
Railways	Segments	130	0	0	130	130
	Bridges	146	0	0	146	146
	Tunnels	0	0	0	0	0
	Facilities	20	0	0	20	20
Light Rail	Segments	1	0	0	1	1
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	1	0	0	1	1
Ferry	Facilities	1	0	0	1	1
Port	Facilities	70	0	0	70	70
Airport	Facilities	2	0	0	2	2
	Runways	4	0	0	4	4

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	3	0	0	3	3
Waste Water	22	0	0	22	22
Natural Gas	0	0	0	0	0
Oil Systems	3	0	0	3	3
Electrical Power	5	0	0	5	5
Communication	30	0	0	30	30

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	3,619	0	0
Waste Water	2,171	0	0
Natural Gas	13	0	0
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	347,126	0	0	0	0	0
Electric Power		0	0	0	0	0

Induced Earthquake Damage

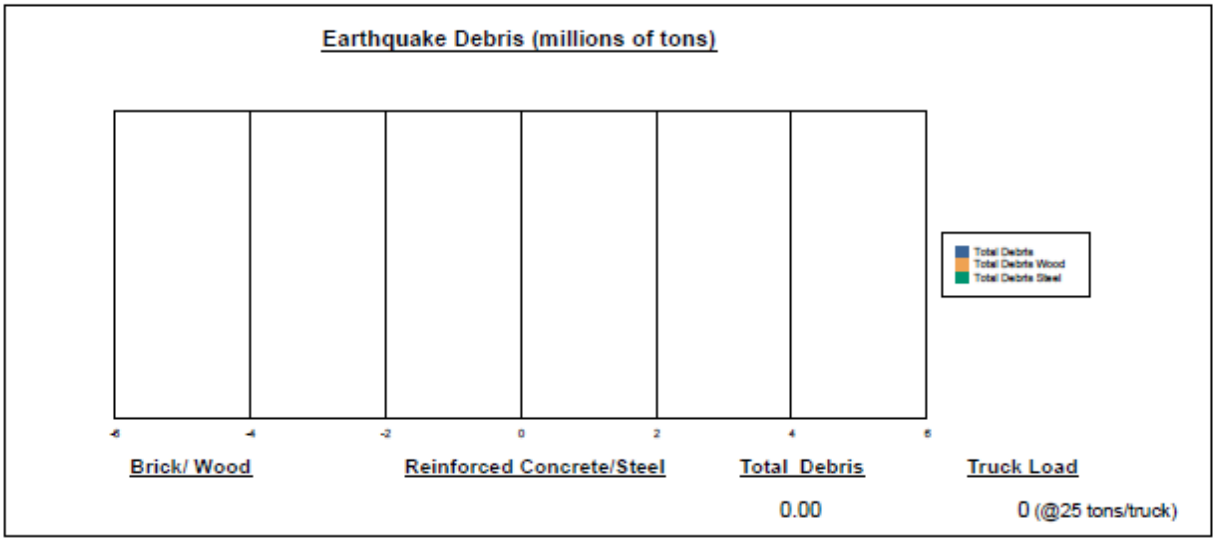
Fire Following Earthquake

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 0 ignitions that will burn about 0.00 sq. mi 0.00 % of the region's total area.) The model also estimates that the fires will displace about 0 people and burn about 0 (millions of dollars) of building value.

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 0 tons of debris will be generated. Of the total amount, Brick/Wood comprises % of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 0 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 0 households to be displaced due to the earthquake. Of these, 0 people (out of a total population of 830,639) will seek temporary shelter in public shelters.

Displaced Households/ Persons Seeking Short Term Public Shelter

Displaced households as a result of the earthquake	Persons seeking temporary public shelter
0	0

Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	0.00	0.00	0.00	0.00
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.00	0.00	0.00	0.00
	Other-Residential	0.00	0.00	0.00	0.00
	Single Family	0.00	0.00	0.00	0.00
	Total	0	0	0	0
2 PM	Commercial	0.00	0.00	0.00	0.00
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.00	0.00	0.00	0.00
	Other-Residential	0.00	0.00	0.00	0.00
	Single Family	0.00	0.00	0.00	0.00
	Total	0	0	0	0
5 PM	Commercial	0.00	0.00	0.00	0.00
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.00	0.00	0.00	0.00
	Other-Residential	0.00	0.00	0.00	0.00
	Single Family	0.00	0.00	0.00	0.00
	Total	0	0	0	0

Economic Loss

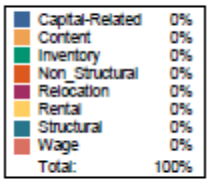
The total economic loss estimated for the earthquake is 0.03 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 0.00 (millions of dollars); 0 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 0 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type ($ millions)



Earthquake Losses by Occupancy Type ($ millions)

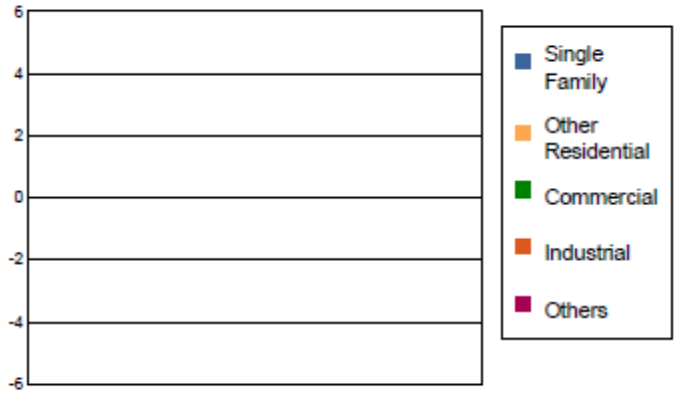


Table 11: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Capital-Related	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Rental	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Relocation	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Subtotal	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Capital Stock Losses							
	Structural	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Non_Structural	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Content	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Inventory	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Subtotal	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Total	0.00	0.00	0.00	0.00	0.00	0.00

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	4687.5869	0.0000	0.00
	Bridges	5291.4501	0.0000	0.00
	Tunnels	29.5914	0.0000	0.00
	Subtotal	10008.6284	0.0000	
Railways	Segments	3711.2137	0.0000	0.00
	Bridges	662.8400	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	53.2600	0.0049	0.01
	Subtotal	4427.3137	0.0049	
Light Rail	Segments	94.9674	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	94.9674	0.0000	
Bus	Facilities	1.7881	0.0002	0.01
	Subtotal	1.7881	0.0002	
Ferry	Facilities	1.3310	0.0000	0.00
	Subtotal	1.3310	0.0000	
Port	Facilities	212.9005	0.0190	0.01
	Subtotal	212.9005	0.0190	
Airport	Facilities	18.6560	0.0014	0.01
	Runways	24.7568	0.0000	0.00
	Subtotal	43.4128	0.0014	
	Total	14,790.34	0.03	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	104.8950	0.0000	0.00
	Distribution Lines	116.4693	0.0015	0.00
	Subtotal	221.3643	0.0015	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	3018.3736	0.0000	0.00
	Distribution Lines	69.8816	0.0008	0.00
	Subtotal	3088.2552	0.0008	
Natural Gas	Pipelines	94.1699	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	46.5877	0.0003	0.00
	Subtotal	140.7576	0.0003	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.3150	0.0000	0.00
	Subtotal	0.3150	0.0000	
Electrical Power	Facilities	5241.4693	0.0000	0.00
	Subtotal	5241.4693	0.0000	
Communication	Facilities	3.1500	0.0000	0.00
	Subtotal	3.1500	0.0000	
	Total	8,695.31	0.00	

Appendix A: County Listing for the Region

Hamilton,OH

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Ohio	Hamilton	830,639	89,450	64,435	153,886
Total Region		830,639	89,450	64,435	153,886

Appendix D – Stakeholder Engagement

Contents

Stakeholder Engagement 2
Steering Committee Meetings 3
Workshops 7
Mitigation [1 on 1] Meeting 21

Stakeholder Engagement

Hamilton County engaged with various stakeholders on multiple occasions, to include the steering committee during meetings, workshops, and one on one meetings. These partners assisted in identifying hazards, assessing risks and vulnerability, record critical facilities, and develop and prioritize mitigation actions. In addition to sharing technical data, reports, and studies. Hamilton County understands the importance of stakeholder engagement and that their contribution strengthens the content and outcomes of the mitigation plan.

Whole Community

The County also invited key agencies to assist in reviewing the plan update process and solicited input during the plan comment period. The whole community partners had two weeks (June 27 – July 11, 2023) to provide comments. A little over 300 whole community partners were given the opportunity to provide feedback on the plan. Table 1 lists each whole community partner, industry and/or discipline that was given the opportunity to engage in the plan update process. The list is not ordered in any particular order and does not include the steering committee.

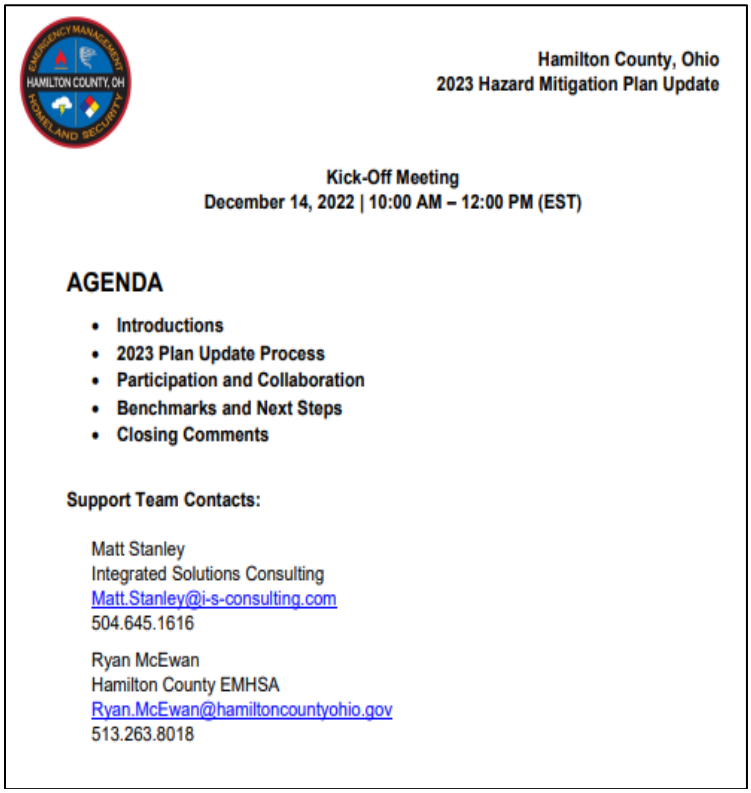
Table 1: Whole Community partners invited to participate		
Chief Elected officials	Community (Village, Town etc.) Administrators	Cardinal Land Conservancy
Hospitals	Major Employers	Green Umbrella
Institutions of Higher Education	American Financial Group	Greenacres Water Quality Project
Police Chiefs	Cincinnati Insurance Companies	Groundwork Cincinnati
Fire Chiefs	Comey & Shepherd Realtors	Little Miami Conservancy
Miami Conservancy District	Duke Energy	Optimum Solutions Force, LLC
Mill Creek Alliance	Fidelity Investments	Proctor & Gamble
Ohio Department of Natural Resource (ODNR)	Fifth-Third Bank	Ohio River Foundation
Ohio County Emergency Management Directors	Great American Insurance	Rivers Unlimited
Large Business Groups	Macy's, Inc.	Western Reserve Land Conservancy
City of Cincinnati Emergency Communications Center	Hamilton County Communications Center	Cincinnati Chamber of Commerce

Steering Committee Meetings

A total of approximately 40 steering committee members were part of the HMP update process. Table 4 in the base plan outlines the members by jurisdiction/organization, name and title of position.

Kickoff Steering Committee Meeting

The Kickoff Meeting for Hamilton County Hazard Mitigation Plan update was conducted on December 14, 2022, and used an agenda to guide the meeting's discussion. The Kickoff Meeting acted as the first Steering Committee Meeting. Please see the agenda and sign in sheets of the steering committee meeting below.



Hamilton County, Ohio
2023 Hazard Mitigation Plan Update

Kick-Off Meeting
December 14, 2022 | 10:00 AM – 12:00 PM (EST)

AGENDA

- **Introductions**
- **2023 Plan Update Process**
- **Participation and Collaboration**
- **Benchmarks and Next Steps**
- **Closing Comments**

Support Team Contacts:

Matt Stanley
Integrated Solutions Consulting
Matt.Stanley@i-s-consulting.com
504.645.1616

Ryan McEwan
Hamilton County EMHSA
Ryan.McEwan@hamiltoncountyohio.gov
513.263.8018

Kickoff Steering Committee #1 Sign in Sheets

Meeting Purpose: Plan Kick-off Meeting
Steering Committee Meeting #1
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: December 14, 2023
Time: 10:00 am – 12:00 am (EST)

Name	Organization	Phone Number	Email
Matt Stanley	ISC Managing Director - PM	312-574-3869	Matt.stanley@i-s-consulting.com
Jake Halley	ISC Lead Planner	318-381-3429	Jacob.Halley@i-s-consulting.com
Cassandra Wolff	ISC GIS Analyst	954.245.6628	Cassandra.wolff@i-s-consulting.com
James Stanforth	Cincinnati Area Geographic Information System (CAGIS)		james.stanforth@cincinnati-oh.gov
Kyran Weithofer	Hamilton County Sheriff's Office,	513-946-6559	kweithofer@hcso.org
Paul Wright	City of Montgomery Fire Chief	513-985-1633	pwright@montgomeryohio.gov
Rebecca Stobridge	Disaster program specialist at the American Red Cross		rebecca.strobridge@redcross.org
Amanda Testerman	City of Cincinnati, Office of Environment & Sustainability, Senior Environmental Safety Specialist		amanda.testerman@cincinnati-oh.gov
Nicole Volpenhein	Emergency Support Specialist- The Health Collaborative		nvolpenhein@healthcollab.org

Meeting Purpose: Plan Kick-off Meeting
Steering Committee Meeting #1
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: December 14, 2023
Time: 10:00 am – 12:00 am (EST)

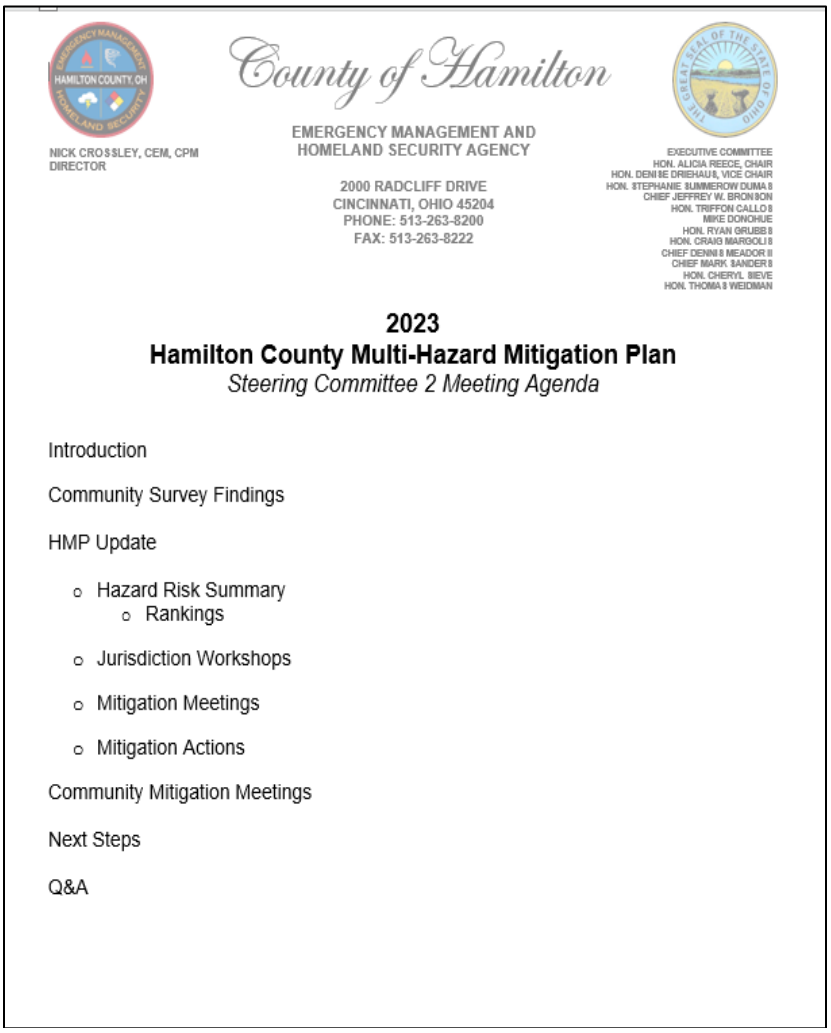
Name	Organization	Phone Number	Email
Olivia Maltry	Hamilton County Planning & Development -	513-946-4760	olivia.maltry@hamilotn-co.org
Howard Miller	City of Cincinnati, Office of Environment & Sustainability, Senior Environmental Specialist		howard.miller@cincinnati-oh.gov
Kerri Castlen	Hamilton County Environmental Services	513-946-7738	kerri.castlen@hamilton-co.org
Craig Dietsch	Univ Cincinnati, Dept of Geosciences, Chair	513-556-4203	dietss@ucmail.uc.edu
Vicky Earhart	Township Administrator, Anderson Township	513-688-8423	vearhart@andersontownshipoh.gov
Steve Armstrong	Government Operation Lead American Red Cross		
Scott Bessler	Metropolitan Sewer District	513-557-7016	scott.bessler@cincinnati-oh.gov
Phillip Clayton	Ohio EMA SW Regional Supervisor	614-296-1859	Psclayton@dps.Ohio.gov
Jill Ernst	Readiness & Response Facilitator - The Health Collaborative		jernst@healthcollab.org
Adam Lanzillotta	Ohio Department of Natural Resources, Dam Safety,		adam.lanzillotta@dnr.ohio.gov

Meeting Purpose: Plan Kick-off Meeting
Steering Committee Meeting #1
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: December 14, 2023
Time: 10:00 am – 12:00 am (EST)

Name	Organization	Phone Number	Email
Kim Snow	Greater Cincinnati Fusion Center (GCFC),		ksnow@gcfc.org
Karen Ball	Hamilton County Administration MSD	513-557-5972	karen.ball@hamilton-co.org
Aiesha Howard	Community Engagement Administrator, Hamilton County Administration/Economic Inclusion & Equity Department,	513-946-4318	aiesha.howard@hamilton-co.org
Jessica Skelton	Director Emergency Preparedness and Response @ The Health Collaborative,	859-823-9593	jskelton@healthcollab.org
Barry Puskas (GISP)	Chief of Technical and Engineering Services	937-223-1278 ext. 3243	bpuskas@mcdwater.org
Margaret Minzer	OKI Regional Council of Governments, Senior Environmental Planner		mminzner@oki.org
David Shuey	OKI Regional Council of Governments		dshuey@oki.org
Melissa Menerey	Ohio Department of Natural Resources (ODNR) Dam Safety,	614-265-6781	melissa.menerey@dnr.ohio.gov
Ryan McEwan	Director / Project Lead		ryan.mcewan@hamiltoncountyohio.gov
Destiny Jardin	Planning Specialist		destiny.jardin@hamiltoncountyohio.gov

Steering Committee Meeting #2

The second Steering Committee Meeting for Hamilton County Hazard Mitigation Plan update occurred virtually via Microsoft Teams on May 16, 2023 and used an agenda to guide the meeting's discussion. Please see the agenda and sign in sheets of the steering committee meeting below.



County of Hamilton

EMERGENCY MANAGEMENT AND HOMELAND SECURITY AGENCY

NICK CROSSLEY, CEM, CPM
DIRECTOR

2000 RADCLIFF DRIVE
CINCINNATI, OHIO 45204
PHONE: 513-263-8200
FAX: 513-263-8222

EXECUTIVE COMMITTEE
HON. ALICIA REECE, CHAIR
HON. DENISE DRIEHAUS, VICE CHAIR
HON. STEPHANIE SUMMEROW DUMAS
CHIEF JEFFREY W. BRONSON
HON. TRIFFON CALLOS
MIKE DONOHUE
HON. RYAN GRUBBS
HON. CRAIG MARGOLIS
CHIEF DENNIS MEADOR
CHIEF MARK SANDER
HON. CHERYL SIEVE
HON. THOMAS WEIDMAN

2023
Hamilton County Multi-Hazard Mitigation Plan
Steering Committee 2 Meeting Agenda

Introduction

Community Survey Findings

HMP Update

- Hazard Risk Summary
  - Rankings
- Jurisdiction Workshops
- Mitigation Meetings
- Mitigation Actions

Community Mitigation Meetings

Next Steps

Q&A

Steering Committee #2 Sign in Sheets



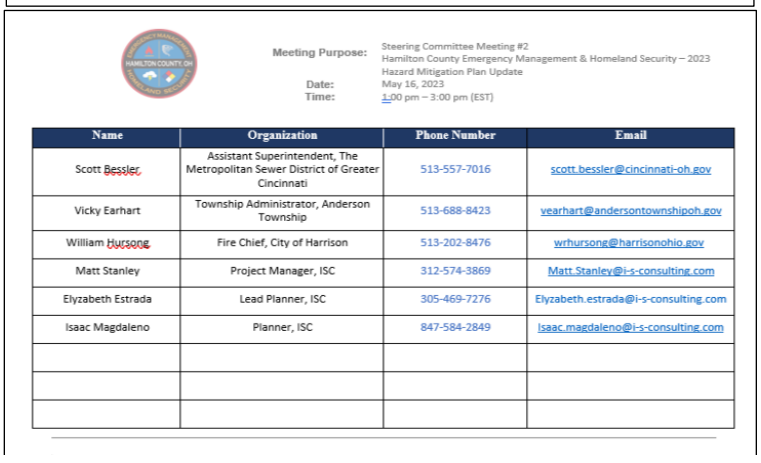
Meeting Purpose: Steering Committee Meeting #2 Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: May 16, 2023
Time: 1:00 pm – 3:00 pm (EST)

Name	Organization	Phone Number	Email
Andrew Knapp	Director, Communication Center	513-595-8440	andrew.knapp@hamiltoncountyohio.gov
Christa Hyson	Director, Emergency Preparedness, Hamilton County Public Health	513-325-3864	Christa.Hyson@hamilton-co.org
Craig Dietsch	Department Chair, UC Department of Geosciences, University of Cincinnati	513-556-4203	dietscc@ucmail.uc.edu
David Bruce	Risk Manager, Great Parks of Hamilton County	513-728-3569	dbruce@greatparks.org
David Schmitt	Executive Director, Mill Creek Alliance	859-391-3214	dschmitt@themillcreekalliance.org
Destiny Jardin	Planning Specialist, Hamilton County		Destiny.Jardin@hamiltoncountyohio.gov
Eric Saylor	Engineer, City of Cincinnati, Stormwater Management Utility	513-591-7843	eric.saylor@cincinnati-oh.gov
Jason Rahe	Chief of Conservation and Parks, Great Parks of Hamilton County	513-404-9111	jrahe@greatparks.org
Jessica Skelton	Director, Emergency Preparedness and Response, The Health Collaborative	859-823-9593	jskelton@healthcollab.org
Jill Ernst	Readiness & Response Facilitator, The Health Collaborative		jernst@healthcollab.org



Meeting Purpose: Steering Committee Meeting #2 Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: May 16, 2023
Time: 1:00 pm – 3:00 pm (EST)

Name	Organization	Phone Number	Email
John Sherrard	Emergency Response Coordinator, Hamilton County Public Health	513-703-3092	john.sherrard@hamilton
Kyran Weithofer	Sr. Support Services Captain, Hamilton County Sheriff's Office	513-946-6559	kweithofer@hcso.org
Kerri Castlen	Compliance Manager, Hamilton County Department of Environmental Services	513-946-7738	kerri.castlen@hamilton-co.org
Matthew Flagler	Assistant Fire Chief, Division of Emergency Management/ Fire Department, City of Cincinnati		matthew.flagler@cincinnati-oh.gov
Melissa Menerey	EAP Coordinator, Ohio Department Natural Resources	614-265-6781	melissa.menerey@dnr.ohio.gov
Olivia Maltry	Project Manager/Flood Plain Technician, Hamilton County Planning & Development	513-946-4760	olivia.maltry@hamilton-co.org
Paul Wright	Fire Chief, City of Montgomery	513-985-1633	pwright@montgomeryohio.gov
Phillip Clayton	Disaster Services Supervisor, Ohio Emergency Management Agency	614-296-1859	Psclayton@dps.Ohio.gov
Sara Fehring	Interim Director, Hamilton County Conservation District	513-772-7645	sara.fehring@hamilton-co.org

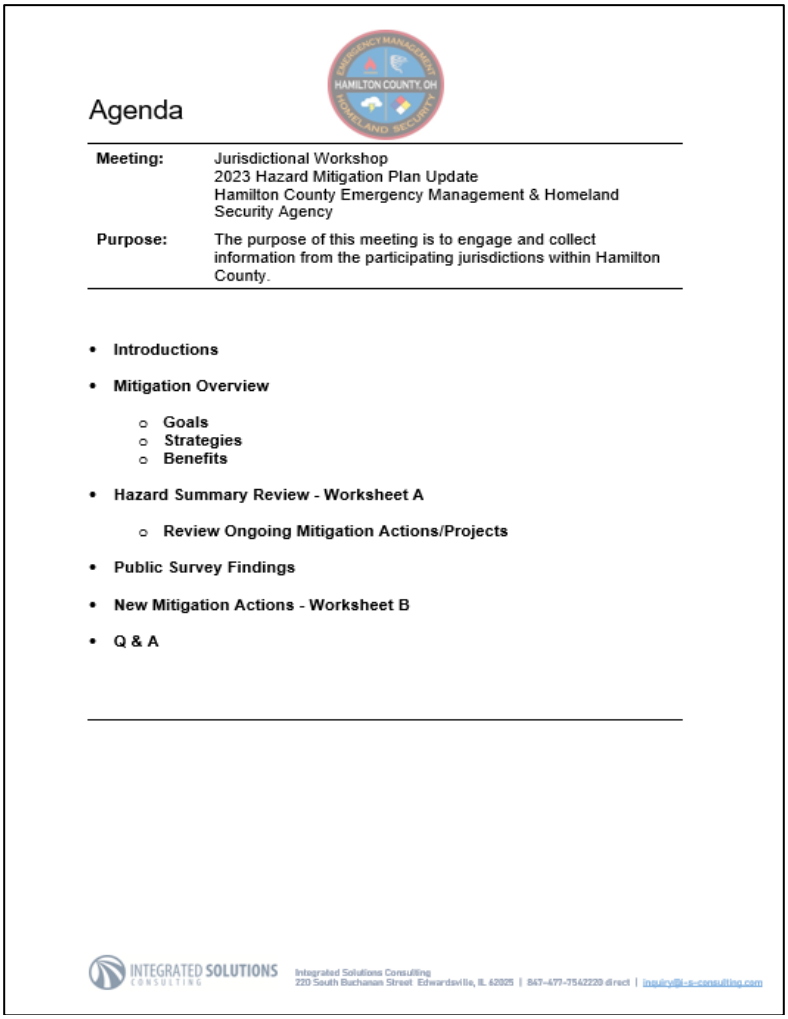


Meeting Purpose: Steering Committee Meeting #2 Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: May 16, 2023
Time: 1:00 pm – 3:00 pm (EST)

Name	Organization	Phone Number	Email
Scott Bessler	Assistant Superintendent, The Metropolitan Sewer District of Greater Cincinnati	513-557-7016	scott.bessler@cincinnati-oh.gov
Vicky Earhart	Township Administrator, Anderson Township	513-688-8423	vearhart@andersontownshipoh.gov
William Hursong	Fire Chief, City of Harrison	513-202-8476	wrhursong@harrisonohio.gov
Matt Stanley	Project Manager, ISC	312-574-3869	Matt.Stanley@i-s-consulting.com
Elyzabeth Estrada	Lead Planner, ISC	305-469-7276	Elyzabeth.estrada@i-s-consulting.com
Isaac Magdaleno	Planner, ISC	847-584-2849	Isaac.magdaleno@i-s-consulting.com

Workshops

Six (6) workshops were held strategically throughout Hamilton County to identify and update hazards and consider new mitigation strategies. Every workshop used and reviewed the same agenda topics. See sign in sheets and photos of each workshop below. All 48 participating jurisdictions were able to attend one of the meetings or workshops.



Agenda

Meeting:	Jurisdictional Workshop 2023 Hazard Mitigation Plan Update Hamilton County Emergency Management & Homeland Security Agency
Purpose:	The purpose of this meeting is to engage and collect information from the participating jurisdictions within Hamilton County.

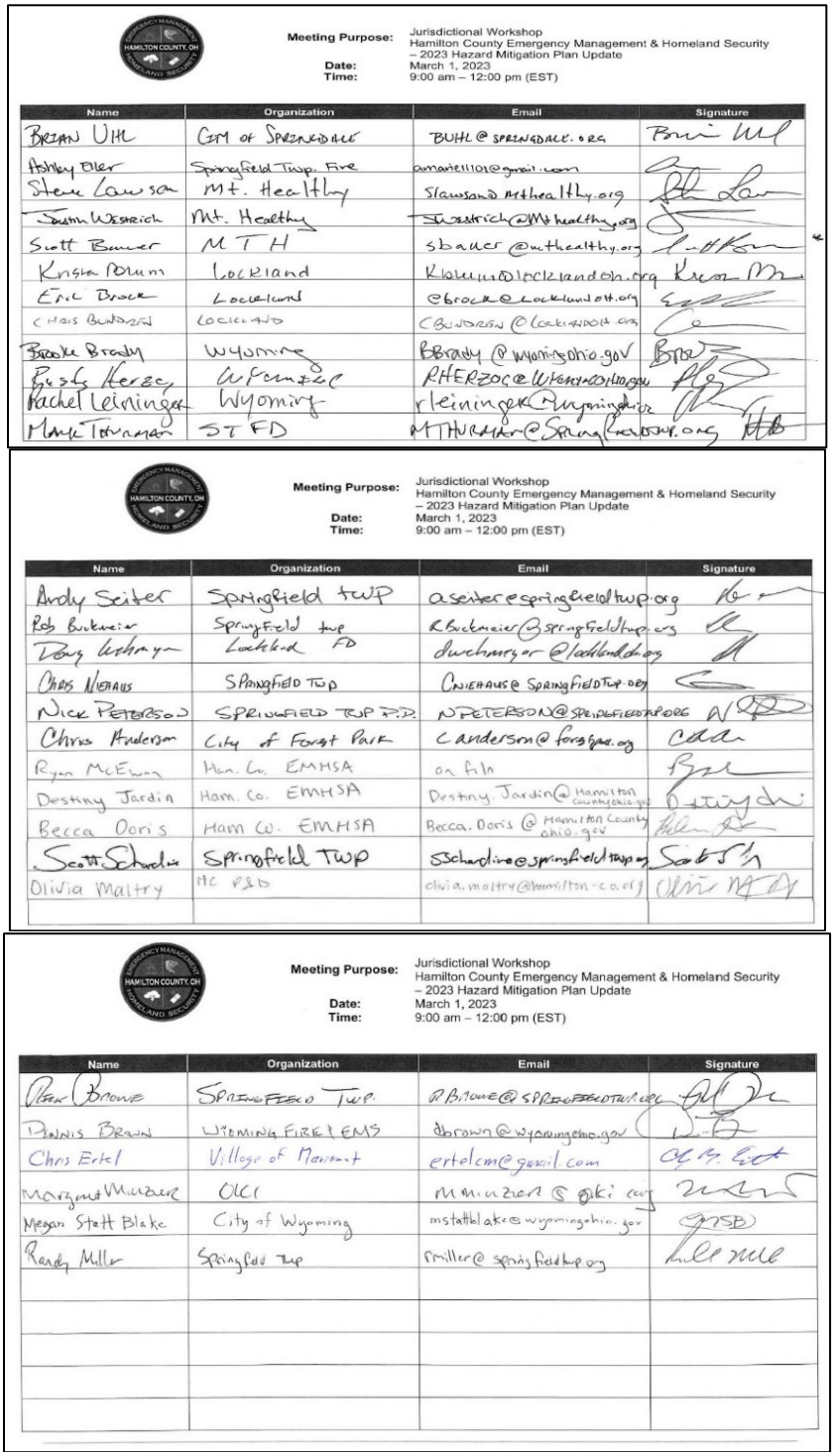
- **Introductions**
- **Mitigation Overview**
  - **Goals**
  - **Strategies**
  - **Benefits**
- **Hazard Summary Review - Worksheet A**
  - **Review Ongoing Mitigation Actions/Projects**
- **Public Survey Findings**
- **New Mitigation Actions - Worksheet B**
- **Q & A**

INTEGRATED SOLUTIONS CONSULTING

Integrated Solutions Consulting
220 South Buchanan Street Edwardsville, IL 62025 | 847-477-7542220 direct | inquiry@i-s-consulting.com

The Grove Event Center – Springfield Twp. – 9158 Winton Rd., Bldg. B, Cincinnati, OH 45231

Workshop 1: Wednesday, March 1, 2023 – 9:00 a.m. – 12:00a.m.



Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 1, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Brian Uhl	City of Springdale	buhl@springdale.org	[signature]
Ashley Eller	Springfield Twp. Fire	amariell101@gmail.com	[signature]
Steve Lawson	Mt. Healthy	slawson@mthealthy.org	[signature]
Justin Westrich	Mt. Healthy	jwestrich@mthealthy.org	[signature]
Scott Bauer	MTH	sbauer@mthealthy.org	[signature]
Krista Blum	Lockland	kblum@locklandoh.org	[signature]
Eric Brock	Lockland	ebrock@locklandoh.org	[signature]
Chris Bundren	Lockland	cbundren@locklandoh.org	[signature]
Brooke Brady	Wyoming	bbrady@wyomingohio.gov	[signature]
Rusty Herzog	Wyoming	rherzog@wyomingohio.gov	[signature]
Rachel Leininger	Wyoming	rleininger@wyomingohio	[signature]
Mark Thurman	STFD	mthurman@springfieldtwp.org	[signature]

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 1, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Andy Seiter	Springfield twp	aseiter@springfieldtwp.org	[signature]
Rob Buckmeier	Springfield twp	rbuckmeier@springfieldtwp.org	[signature]
Doug Wehmeyer	Lockland FD	dwehmeyer@locklandoh.org	[signature]
Chris Niehaus	Springfield Twp	cniehaus@springfieldtwp.org	[signature]
Nick Peterson	Springfield Twp P.D.	npeterson@springfieldtwp.org	[signature]
Chris Anderson	City of Forest Park	canderson@forestpark.org	[signature]
Ryan McEwen	Ham. Co. EMHSA	on file	[signature]
Destiny Jardin	Ham. Co. EMHSA	Destiny.Jardin@Hamiltoncountyohio.gov	[signature]
Becca Doris	Ham Co. EMHSA	Becca.Doris@Hamilton County ohio.gov	[signature]
Scott Schardine	Springfield Twp	sschardine@springfieldtwp.org	[signature]
Olivia Maltry	HC P&D	olivia.maltry@hamilton-co.org	[signature]

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 1, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Rick Browne	Springfield Twp.	rbrowne@springfieldtwp.org	[signature]
Dennis Brown	Wyoming Fire & EMS	dbrown@wyomingohio.gov	[signature]
Chris Ertel	Village of Mariemont	ertelcm@gmail.com	[signature]
Margaret Munzer	OKI	mmunzer@oki.org	[signature]
Megan Statt Blake	City of Wyoming	mstattblake@wyomingohio.gov	[signature]
Randy Miller	Springfield Twp	rmiller@springfieldtwp.org	[signature]

Photos of The Grove Event Center – Springfield Twp. Workshop







Anderson Center – Anderson Twp. – 7850 5 Mile Rd., Cincinnati, OH 45230

Wednesday, March 1, 2023 – 1:00 p.m. – 4:00 p.m.

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 1, 2023
Time: 1:00 pm – 4:00 pm (EST)

Name	Organization	Email	Signature
William Burns	Symmes Twp	Wburns@symmestownship.org	
Jon Frye	Loveland - Symmes Fire Dept of Loveland & Symmes Twp	Jfrye@lsfd.org	
Harold Gregory	Loveland-Symmes Fire	hgregory@lsfd.org	
Rick Martin	Anderson Twp Fire & Rescue	RMartin@AndersonTownshipOH.gov	
Mark Magna	Anderson Township	Mmagna@andersontownship.org	
Eric Lucibello	Anderson Township	ELucibello@AndersonTownshipOH.gov	
Joseph Behrend	Hamilton County Eng.	Joe.behrend@hamilton-co.org	
Brian Jordan	Anderson Park District	bjordan@andersonparks.com	
Jessica Fail	Anderson Park District	Jfail@andersonparks.com	
Jennifer Sanders	Anderson Township	JSanders@AndersonTownship.OH.gov	
David Liebman	HC EMHSA	david.liebman@hamiltoncountyohio.gov	
Destiny Jardin	HC EMHSA	Destiny.Jardin@Hamilton county.ohio.gov	

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 1, 2023
Time: 1:00 pm – 4:00 pm (EST)

Name	Organization	Email	Signature
Michael Smith	Anderson Park District	msmith@andersonparks.com	
Mark Homan	Sycamore Twp.	MHoman@sycamoretownship.org	
Sean Smith	Anderson Fire	SSmith@andersontownshipfd.gov	
Dee Stone	Ind Trustee	DStone@AndersonTownship.OH.gov	
Jason Atkins	Indian Hill	JAtkins@indianhill.org	
Todd Gadbury	Hami. Co. Engineer	Todd.Gadbury@HamiltonCountyOhio.gov	
Vicky L. Earhart	Anderson Twp	VEarhart@AndersonTownshipOH.gov	
Becca Doris	HC EMHSA	Becca.Doris@Hamiltoncounty ohio.gov	
Ryan McEwen	HC EMHSA	on file	
Steve Reutershofer	Sycamore Twp.	SReutershofer @sycamoretownship.org	

Photos of the Anderson Center – Anderson Twp. Workshops

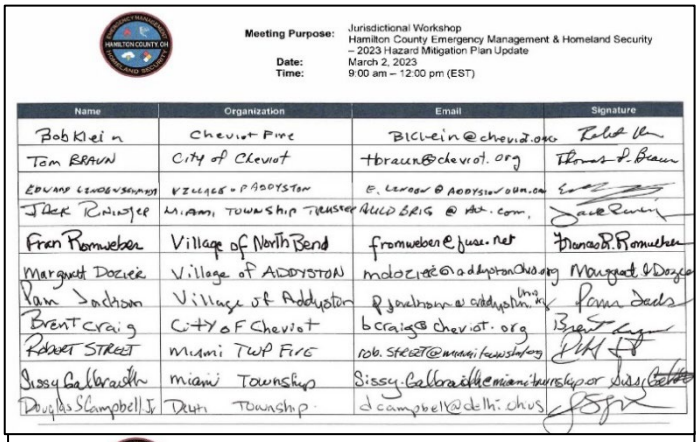






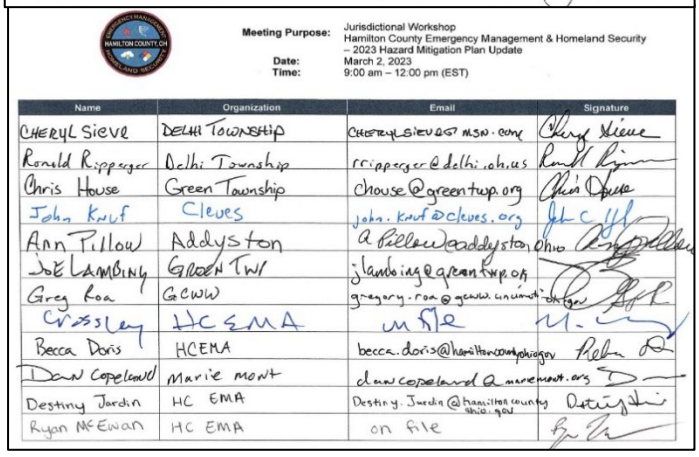
Miami Township Conference Center – Miami Twp. – 3780 Shady Ln., North Bend, OH 45052

Thursday, March 2, 2023 – 9:00 a.m. – 12:00 p.m.



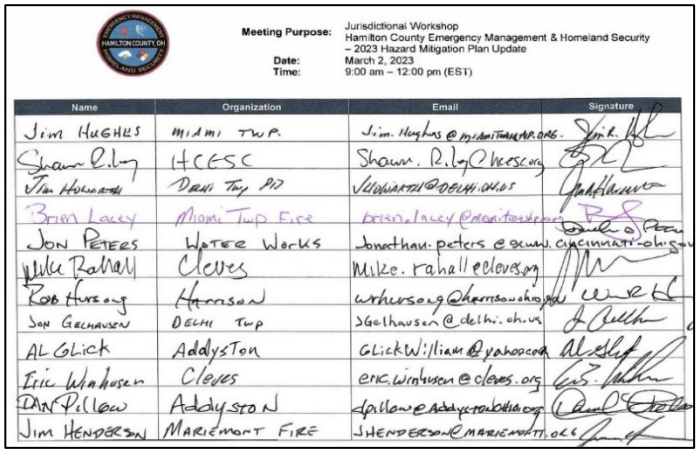
Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 2, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Bob Klein	Cheviot Fire	BKlein@cheviot.org	[signature]
Tom BRAUN	City of Cheviot	tbraun@cheviot.org	[signature]
EDWARD LINDENSCHMIDT	VILLAGE OF ADDYSTON	E.LINDEN@ADDYSTONOHM.COM	[signature]
JACK RININGER	MIAMI TOWNSHIP TRUSTEE	AULDBRIG@AOL.COM	[signature]
Fran Romweber	Village of North Bend	fromweber@juse.net	[signature]
Margaret Dozier	Village of ADDYSTON	mdozier@addystonohio.org	[signature]
Pam Jackson	Village of Addyston	pjackson@addystonohio.org	[signature]
Brent Craig	City of Cheviot	bcraig@cheviot.org	[signature]
Robert STREET	Miami TWP FIRE	rob.street@miamitownship.org	[signature]
Sissy Galbraith	Miami Township	Sissy.Galbraith@miamitownship.or	[signature]
Douglas Campbell Jr	Delhi Township	dcampbell@delhi.ohus	[signature]



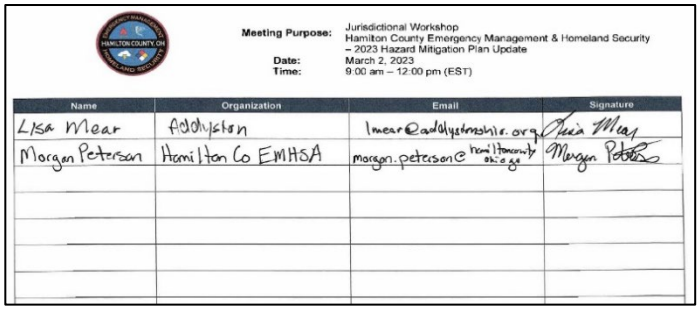
Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 2, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
CHERYL SIEVE	DELHI TOWNSHIP	CHERYLSIEVE@MSN.COM	[signature]
Ronald Ripperger	Delhi Township	rripperger@delhi.oh.us	[signature]
Chris House	Green Township	chouse@greentwp.org	[signature]
John Knuf	Cleves	john.knuf@cleves.org	[signature]
Ann Pillow	Addyston	apillow@addyston.ohio	[signature]
JOE LAMBING	GREEN TWP	jlambing@greentwp.org	[signature]
Greg Roa	GCWW	gregory.roa@gcww.cincinnati-oh.gov	[signature]
Crossley	HC EMA	on file	[signature]
Becca Doris	HCEMA	becca.doris@hamiltoncountyohio.gov	[signature]
Dan Copeland	Marie Mont	dancopeland@mariemont.org	[signature]
Destiny Jordin	HC EMA	Destiny.Jordin@hamiltoncountyohio.gov	[signature]
Ryan McEwan	HC EMA	on file	[signature]



Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 2, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Jim HUGHES	MIAMI TWP.	Jim.Hughes@miamitownship.org	[signature]
Shawn Riley	HCESC	Shawn.Riley@hcesc.org	[signature]
Jim Howarth	Delhi Twp PD	JHowarth@delhi.oh.us	[signature]
Brien Lacey	Miami Twp Fire	brien.lacey@miamitownship.org	[signature]
Jon Peters	Water Works	Jonathan.peters@gcww.cincinnati-oh.gov	[signature]
Mike Rahall	Cleves	Mike.rahall@cleves.org	[signature]
Rob Hursong	Harrison	wrhursong@harrisonohio.gov	[signature]
Jon Gelhausen	Delhi Twp	JGelhausen@delhi.oh.us	[signature]
AL GLICK	AddysTon	GlickWilliam@yahoo.com	[signature]
Eric Winhusen	Cleves	eric.winhusen@cleves.org	[signature]
DAN Pillow	Addyston	dpillow@addystonohio.org	[signature]
Jim HENDERSON	MARIEMONT FIRE	JHENDERSON@MARIEMONT.ORG	[signature]



Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 2, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Lisa Mear	Addyston	lmear@addystonohio.org	[signature]
Morgan Peterson	Hamilton Co EMHSA	morgan.peterson@hamiltoncountyohio.gov	[signature]

Photos of the Miami Township Conference Center – Miami Twp. Workshop







Hamilton County Educational Services Center – Colerain Twp. – 11083 Hamilton Ave., Cincinnati, OH 45231

Thursday, March 2, 2023 – 1:00 p.m. – 4:00 p.m.

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 2, 2023
Time: 1:00 pm – 4:00 pm (EST)

Name	Organization	Email	Signature
Eric Saylor	City of Cincinnati	eric.saylor@cincinnati-oh.gov	Eric Saylor
Mark Reeves	City of Norwood	mreeves@norwoodohio.gov	Mark Reeves
Clint Zimmerman	City of Norwood	czimmerman@norwoodohio.gov	[illegible]
Noah Powers	Norwood	ssd@norwoodohio.gov	[illegible]
Mike Skelly	" "	mskelly@norwoodohio.gov	[illegible]
MICHAEL GABBARD	Norwood	mgabbard@norwoodohio.gov	[illegible]
T. McCABE	Norwood	tmccabe@norwoodohio.gov	[illegible]
Brodie Cianciolo	Norwood	bcianciolo@norwoodohio.gov	[illegible]
BRAD JOHNSON	HAMILTON COUNTY	brad.johnson@hamilton-co.org	[illegible]
Anthony Stanley	City of Springdale	astanley@springdale.org	[illegible]
DWAYNE SUMNER	City of NORWOOD	DSUMNER@norwoodpolice.org	[illegible]
William Blake	FOREST PARK	wblake@FORESTPARK.ORG	[illegible]

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
– 2023 Hazard Mitigation Plan Update
Date: March 2, 2023
Time: 1:00 pm – 4:00 pm (EST)

Name	Organization	Email	Signature
Melissa Meneney	ODNR - Dam Safety	melissa.meneney@dnr.ohio.gov	Melissa M
WILLIAM ARNS	FOREST PARK POLICE	WILLIAM A@FORESTPARK.ORG	[illegible] D-C
JAMES WARD	FOREST PARK POLICE	JAMES W@FORESTPARK.ORG	James W
John Peter	Norwood	Peter.J@Norwoodschools.org	John Peter
James Benjamin	Cincinnati Fire	James.Benjamin@cincinnati-oh.gov	[illegible]
ALFIE JONES	FOREST PARK	ALFIEJ@FORESTPARK.ORG	[illegible]
LEO NEIHEISEL	CINCINNATI FIRE	LEO.NEIHEISEL@CINCINNATI-OH.GOV	[illegible]
MATT FLAGLOR	CINCINNATI FIRE	MATTHEW.FLAGLOR@CINCINNATI-OH.GOV	[illegible]
Becca Doris	HCEMA	becca.doris@hamiltoncountyohio.gov	[illegible]
Destiny Jardin	HCEMA	destiny.jardin@hamiltoncountyohio.gov	[illegible]
Ryan McEwan	HC EMHSA	on file	[illegible]

Photos of the Hamilton County Educational Services Center – Colerain Twp. Workshop







Evendale Recreation Center – Evendale – 10500 Reading Rd., Cincinnati, OH 45241

Friday, March 3, 2023 | 9:00 a.m. – 12:00 p.m.

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 3, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
DAVID YEAGER	INDIAN HILL	dyeager@indianhill.gov	
GERALD HAYHOW	TERRACE PARK	HayhowG@TERRACEPARK.ORG	
STEFAN DENSMORE	GOLF MANOR	SDENSMORE@GOLFMANOR.COM	
Jason Dickensheets	GPHC	JDickensheets@greatparks.org	
Shawn MCBRIEN	NEWTOWN	BSMCBRIEN@VILLAGEOFNEWTOWN.COM	
Chuck Setzer	INDIAN HILL	CSETZER@INDIANHILL.GOV	
ADAM KNIGHT	EVENDALE	ADAM.KNIGHT@EVENDALE.ORG	
Dina Minneci	Indian Hill	dminneci@indianhill.gov	
Bryan Young	St. Bernard	firechief@cityofstbernard.org	
Jennifer Kamuker	Fairfax	jkamuker@fairfaxoh.org	
Rodney Natricchiani	Fairfax	RNatch@fairfaxoh.org	
Roger Pohlman	Blue Ash	RPOHLMAN@BLUEASH.COM	
Jason Swartwout	Blue Ash	JSWARTWOUT@BLUEASH.COM	

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 3, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Destiny Jardin	HC EMA	destiny.jardin@hamiltoncountyohio.gov	
JEFF MCLEMORE	VILLAGE OF FAIRFIELD	JEFI5SERVICE@AOL.COM	
Steve Busam	City of Sharonville	sbusam@cityofsharonville.com	
Kathy Wade-Bowman	Village of Indian Hill	kbowman@indianhill.gov	
Jim Puthoff	Golf Manor	J.PUTHOFF@GOLFMANOR.GOV	
Jon West	Indian Hill	jwest@indianhill.gov	
Tom Pack	St Bernard	SERVICE@CITYOFSTBERNARD	
John Creech	Sharonville	JCREECH@CITYOFSHARONVILLE	
Jim Nesbit	Sharonville	JNesbit@CityofSharonville.com	
MIKE HUKSOLL	CITY OF SPRINGDALE	MHUKSOLL@SPRINGDALE.ORG	
Pam Bowers	U. of Cincinnati	pam.bowers@uc.edu	
Dan Bressert	READING	dbressert@reading.oh.gov	
Tim Schmidt Gessling	Amberley Village	tschmidtgessling@amberleyvillage.org	

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 3, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Andy Collins	Great Parks	acollins@greatparks.org	
Dan Sunderman	Sharonville Fire	dsunderman@ci.sharonville.oh.us	
Chris Ellis	Sharonville Fire	cellis@cityofsharonville.com	
Michael Hawke	Evendale Fire	mike.hawke@evendaleohio.org	
Ben Castrel	HCEMHSA	Ben.Castrel@hamiltoncountyohio.gov	
Ryan McEvan	HC EMHSA	on file	
Jeff Williams	Green Twp.	JeffW@GreenTwp.org	
Francisco Caceres	Madeira Indian Hill Fire	CACERESF@MIHFD.org	
Rob Penny	Sycamore Twp	rpenny@sycamoretownship.org	RP

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 3, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Michael Simos	St. Bernard Police	msimos@stbernardpolice.org	
Pete Ballauer	Blue Ash	pballauer@blueash.com	
Tina McCormick	Evendale	tmccormick@evendaleohio.com	
Michael Blomer	Sharonville	mblomer@cityofsharonville.com	
Scott Snow	Great Parks	SSnow@greatparks.org	
Luke Sholl	Sharonville	lsholl@cityofsharonville.com	
Brian Edens	Reading PD	bedens@readingpolice.org	
Paula Burgin	Village of Golf Manor	pburgin@golfmanoroh.gov	Paula Burgin
James Jeffers	Evendale	James.Jeffers@evendaleohio.com	
Tom Wells	Springdale	Twells@springdale.org	
Becca Doris	HCEMA	becca.doris@hamiltoncountyohio.gov	

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 3, 2023
Time: 9:00 am – 12:00 pm (EST)

Name	Organization	Email	Signature
Tom Sextro	Evendale Councilman	TPSEXTRO@ICLOUD.COM	
James Lukas	Sharonville	JLukas@cityofsharonville.com	
Randy Campion	Sharonville	RCampion@cityofsharonville.com	
Brandon Gehring	Amberley FD/PD	Bgehring@Amberleyvillage.org	
Ashley Snyder	Golf Manor Village Council	a.snyder@golfmanor.ohgov	
Todd Owens	Reading Fire	TOwens@readingohio.org	
Eric Pridonoff	Golf Manor	E.Pridonoff@golfmanoh.gov	

Photos of the Evendale Recreation Center – Evendale Workshop

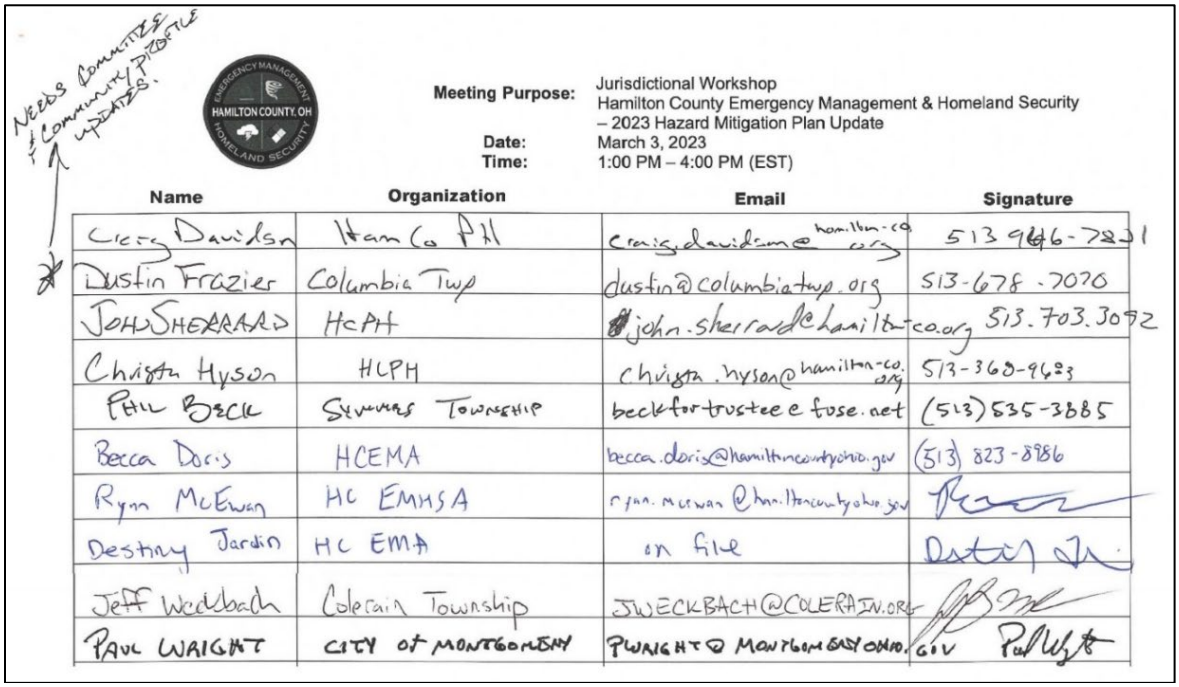






American Red Cross – Cincinnati – 2111 Dana Ave., Cincinnati, OH 45207

Friday, March 3, 2023 – 1:00 p.m. – 4:00 p.m.



NEEDS COMMITTEE & COMMUNITY PROFILE UPDATES.

HAMILTON COUNTY, OH EMERGENCY MANAGEMENT HOMELAND SECURITY

Meeting Purpose: Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update

Date: March 3, 2023
Time: 1:00 PM – 4:00 PM (EST)

Name	Organization	Email	Signature
Craig Davidson	Ham Co PH	craig.davidson@hamilton-co.org	513 946-7281
Dustin Frazier	Columbia Twp	dustin@columbiatwp.org	513-678-7070
JOHN SHERRARD	HCPH	john.sherrard@hamilton-co.org	513.703.3092
Christa Hyson	HCPH	christa.hyson@hamilton-co.org	513-360-9623
PHIL BECK	SYCAMORE TOWNSHIP	beckfortrustee@fuse.net	(513) 535-3885
Becca Doris	HCEMA	becca.doris@hamiltoncountyohio.gov	(513) 823-8986
Ryan McEwan	HC EMHSA	ryan.mcewan@hamiltoncountyohio.gov	
Destiny Jardin	HC EMA	on file	
Jeff Weckbach	Colerain Township	JWECKBACH@COLERAIN.ORG	
PAUL WAIGHT	CITY OF MONTGOMERY	PWAIGHT@MONTGOMERYOHIO.GOV	

Photos of the American Red Cross – Cincinnati Workshop







Mitigation [1 on 1] Meeting

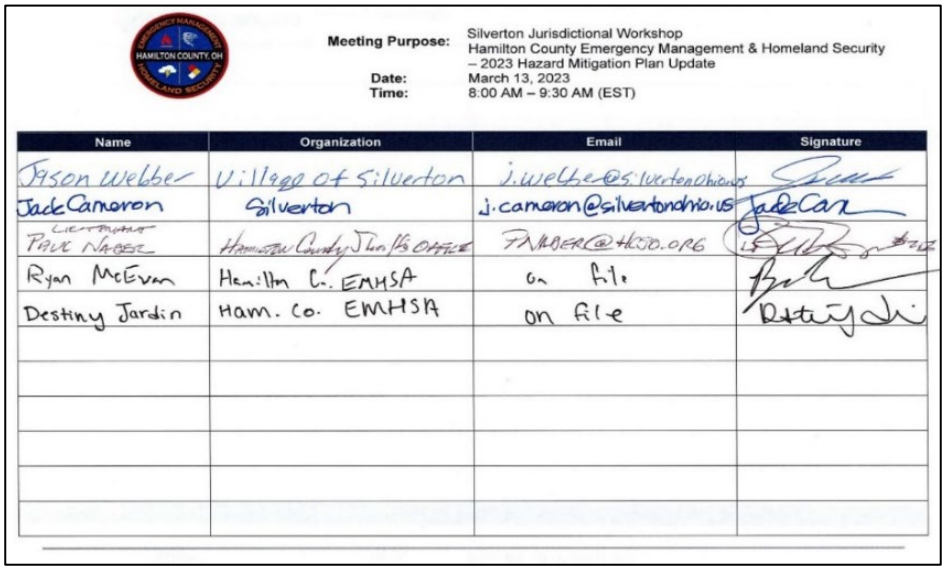
Hamilton County scheduled 1 on 1 meetings with ten jurisdictions that could not attend the in-person workshops.

- For those stakeholders who were not able to attend the workshops, Hamilton County followed up with each jurisdiction for HMP updates.

Every workshop used and reviewed the same agenda topics. The sign-in sheets are included for each of these meetings.

Mitigation Silverton Jurisdictional Workshop

Meeting 1: Monday, March 13, 2023 – 8:00 a.m. – 9:30 a.m.

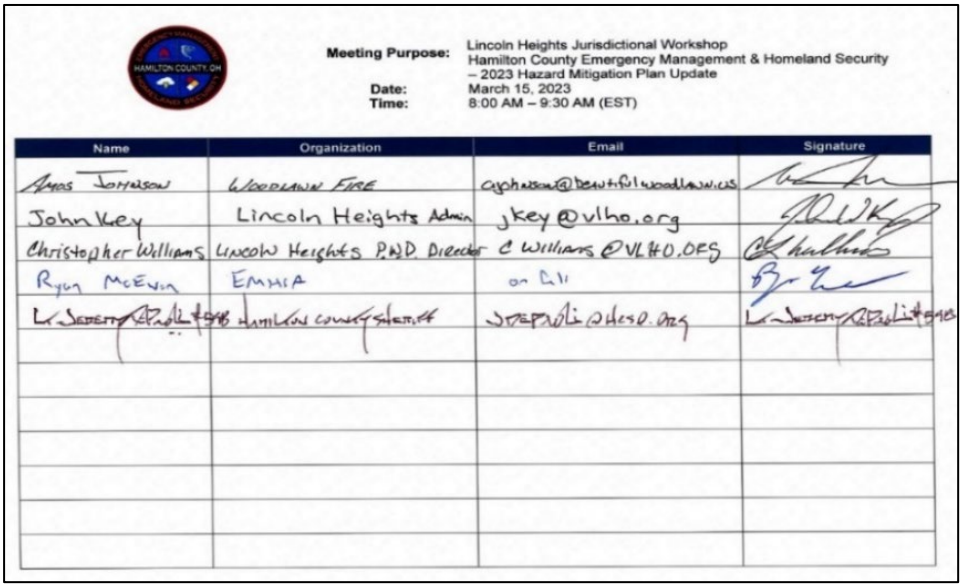


Meeting Purpose: Silverton Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 13, 2023
Time: 8:00 AM – 9:30 AM (EST)

Name	Organization	Email	Signature
Jason Webber	Village of Silverton	j.webber@silvertonohio.us	
Jack Cameron	Silverton	j.cameron@silvertonohio.us	
Paul Naber	Hamilton County Sheriff's Office	PNABER@HCSO.ORG	
Ryan McEvan	Hamilton Co. EMHSA	on file	
Destiny Jardin	Ham. Co. EMHSA	on file	

Lincoln Heights Jurisdictional Workshop

Meeting 2: Wednesday, March 15, 2023 – 8:00 a.m. – 9:30 a.m.

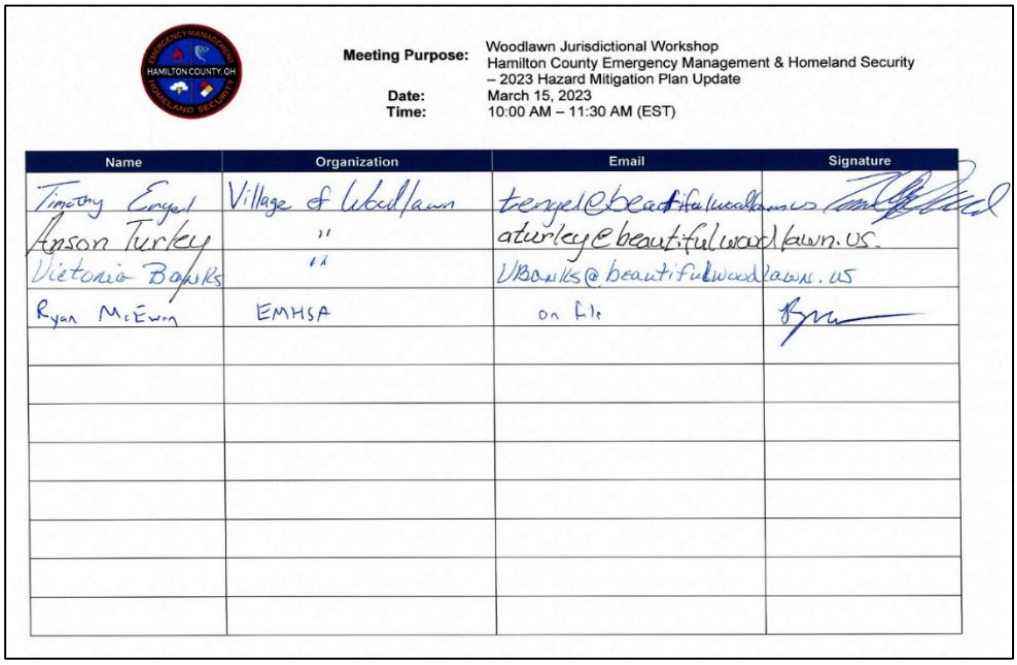


Meeting Purpose: Lincoln Heights Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 15, 2023
Time: 8:00 AM – 9:30 AM (EST)

Name	Organization	Email	Signature
Amos Johnson	Woodlawn Fire	ajohnson@beautifulwoodlawn.us	
John Key	Lincoln Heights Admin	jkey@vlho.org	
Christopher Williams	Lincoln Heights P&D Director	C Williams @VLHO.OEG	
Ryan McEvan	EMHSA	on file	
Lt. Joseph [illegible]	Hamilton County Sheriff	JOSEPH[illegible]@HCSO.ORG	

Woodlawn Jurisdictional Workshop

Meeting 3: Wednesday, March 15, 2023 – 10:00 a.m. – 11:30 a.m.

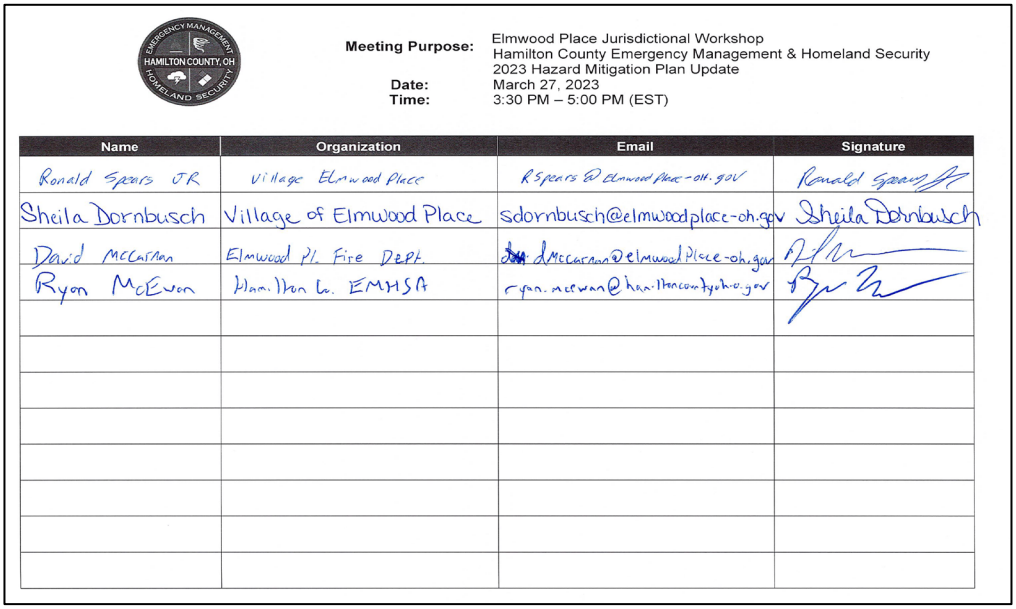


Meeting Purpose: Woodlawn Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security – 2023 Hazard Mitigation Plan Update
Date: March 15, 2023
Time: 10:00 AM – 11:30 AM (EST)

Name	Organization	Email	Signature
Timothy Engel	Village of Woodlawn	tengel@beautifulwoodlawn.us	
Anson Turkey	"	aturkey@beautifulwoodlawn.us	
Victoria Banks	"	VBanks@beautifulwoodlawn.us	
Ryan McEwen	EMHSA	on file	

Elmwood Place Jurisdictional Workshop

Meeting 4: Monday, March 27, 2023 3:30 p.m. – 5:00 p.m.



Meeting Purpose: Elmwood Place Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
2023 Hazard Mitigation Plan Update
Date: March 27, 2023
Time: 3:30 PM – 5:00 PM (EST)

Name	Organization	Email	Signature
Ronald Spears JR	Village Elmwood Place	RSpears@Elmwood Place-oh.gov	Ronald Spears
Sheila Dornbusch	Village of Elmwood Place	sdornbusch@elmwoodplace-oh.gov	Sheila Dornbusch
David McCarman	Elmwood Pl. Fire Dept.	dmccarman@elmwoodplace-oh.gov	
Ryan McEwen	Hamilton Co. EMHSA	ryan.mcewan@hamiltoncountyoh.gov	

Deer Park Jurisdictional Workshop

Meeting 5: Tuesday, March 28, 2023

Meeting Purpose: Deer Park Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
2023 Hazard Mitigation Plan Update
Date: March 28, 2023
Time: 1:00 PM – 2:30 PM (EST)

Name	Organization	Email	Signature
William Wetter	City of Deer Park	lwetter@DEERPARK-OH.GOV	
Denny Meador	Deer Park - Silverton	dmeadorjr@dpsjfd.org	
Ryan McEwen	Hamilton Co. EMHSA	ryan.mcewan@hamiltoncountyohio.gov	
Michael F. Schulz	Deer Park P.D.	michaelschulz@deerpark-oh.gov	
Dave Battin	Deer Park PD	davidbattin@deerpark-oh.gov	
Sheena Johnson	City of Deer Park	sjohnson@deerpark-oh.gov	

Crosby Township Jurisdictional Workshop

Meeting 6: Monday, April 3, 2023

Meeting Purpose: Crosby Township Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
2023 Hazard Mitigation Plan Update
Date: April 3, 2023
Time: 9:00 AM – 10:30 AM (EST)

Name	Organization	Email	Signature
Jason Davis	Crosby Twp. Fire Dept.	chiefdavis@crosbytwp.org	
Dennis Heyde	Crosby Twp trustee	dheyde@crosbytwp.org	
Ryan McEwen	Hamilton Co. EMHSA	ryan.mcewan@hamiltoncountyohio.gov	

Glendale Jurisdictional Workshop

Meeting 7: Tuesday, April 4, 2023 – 2:00 a.m. – 3:30 a.m.

Meeting Purpose: Glendale Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
2023 Hazard Mitigation Plan Update
Date: April 4, 2023
Time: 2:00 PM – 3:30 PM (EST)

Name	Organization	Email	Signature
David Lumsden	Village of Glendale	dlumsden@glendaleohio.org	
Donald Lofty	Village of Glendale	dlofty@glendaleohio.org	
William Jetter	Village of Glendale	wjetter@Glendaleohio.org	
Ryan McEwen	Hamilton Co. EMHSA	ryan.mcewen@hamiltoncountyohio.gov	

Whitewater Township Jurisdictional Workshop

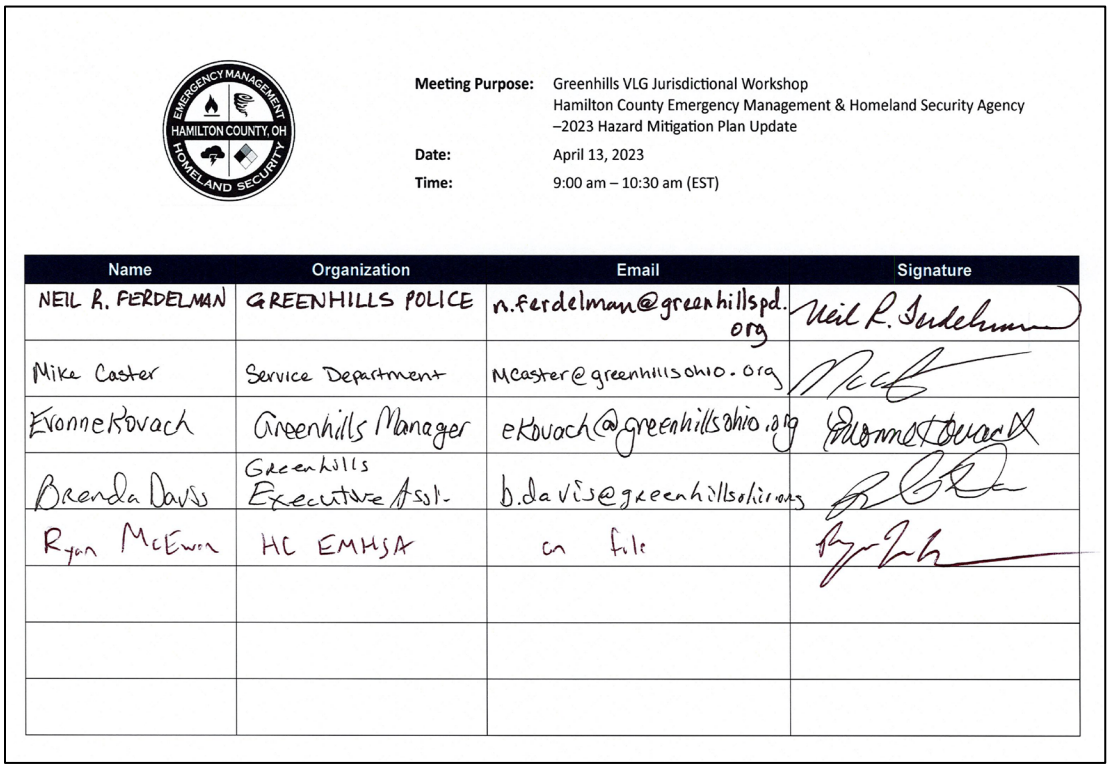
Meeting 8: Thursday, April 10, 2023 – 8:00 a.m. – 9:30 a.m.

Meeting Purpose: Whitewater Twp. Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
2023 Hazard Mitigation Plan Update
Date: April 10, 2023
Time: 8:00 AM – 9:30 AM (EST)

Name	Organization	Email	Signature
Peggy Westerfeld	Whitewater Twp	p.westerfeld@whitewatertwp.org	
Jim Brett	Whitewater Twp	j.brett@whitewatertwp.org	
Josh McCreary	Whitewater Twp	j.mccreary@whitewatertwp.org	
Ryan McEwen	Hamilton Co. EMHSA	on file	

Greenhills Village Jurisdictional Workshop

Meeting 9: Thursday, April 13, 2023 – 9:00 a.m. – 10:30 a.m.



Meeting Purpose: Greenhills VLG Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security Agency
–2023 Hazard Mitigation Plan Update

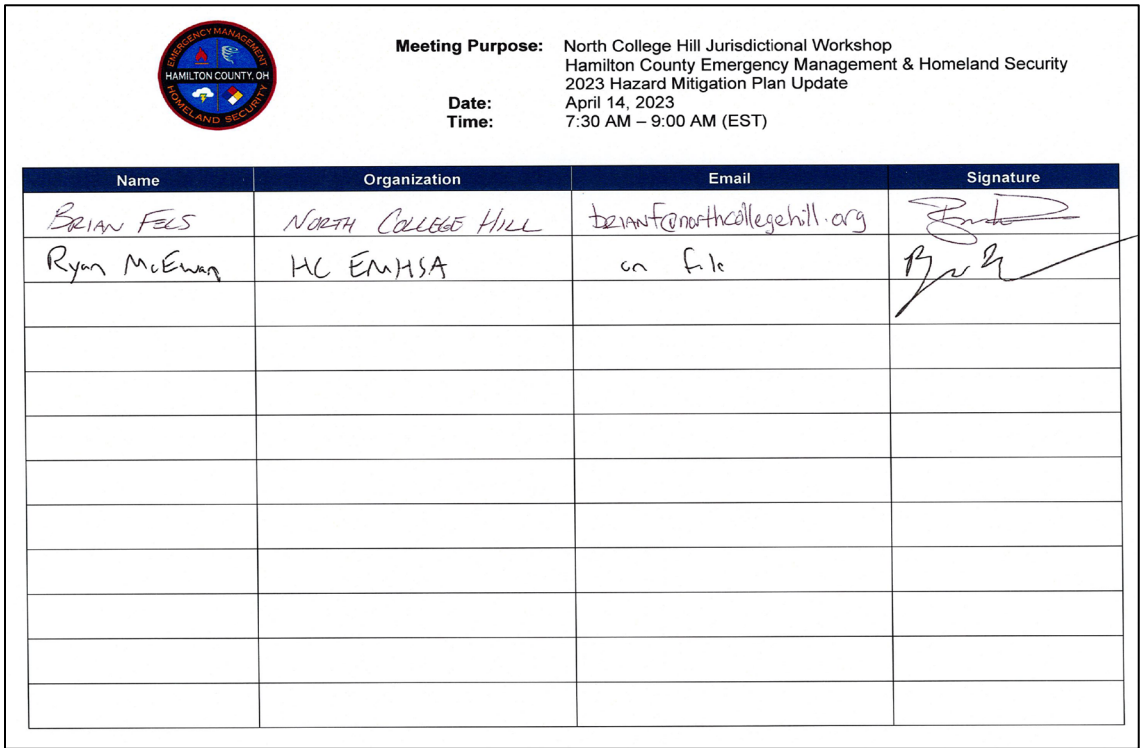
Date: April 13, 2023

Time: 9:00 am – 10:30 am (EST)

Name	Organization	Email	Signature
NEIL R. FERDELMAN	GREENHILLS POLICE	n.ferdelman@greenhillspd.org	Neil R. Ferdelman
Mike Caster	Service Department	MCaster@greenhillsohio.org	
Evonne Kovach	Greenhills Manager	eKovach@greenhillsohio.org	
Brenda Davis	Greenhills Executive Asst.	b.davis@greenhillsohio.org	
Ryan McEwen	HC EMHSA	on file	

North College Hill Jurisdictional Workshop

Meeting 10: Friday, April 14, 2023 – 7:30 a.m. – 9:00 a.m.



Meeting Purpose: North College Hill Jurisdictional Workshop
Hamilton County Emergency Management & Homeland Security
2023 Hazard Mitigation Plan Update

Date: April 14, 2023

Time: 7:30 AM – 9:00 AM (EST)

Name	Organization	Email	Signature
BRIAN FELS	NORTH COLLEGE HILL	brianf@northcollegehill.org	
Ryan McEwen	HC EMHSA	on file	

Appendix E – Public Engagement

Contents

Public Meeting 2
Public Comment Period 5
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Hazard Risk Perceptions 13
Disaster Experience 15
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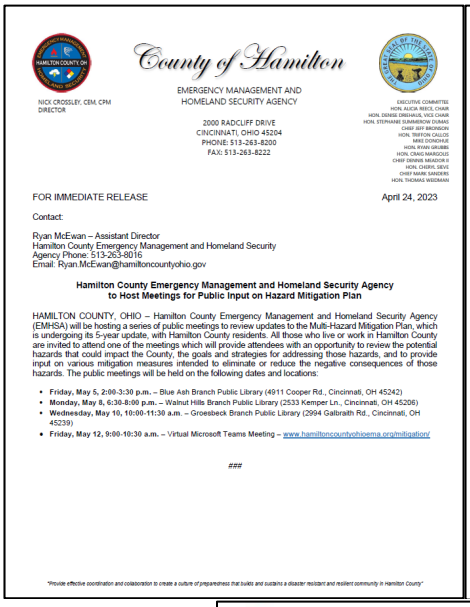
Public Meeting

Hamilton County's Emergency Management and Homeland Security Agency (EMHSA) hosted a series of public meetings to review updates to the Multi-Hazard Mitigation Plan. The public meeting agenda was developed to guide the discussion for the four public meetings. One meeting was conducted virtually to allow for various accessibility options.

Social Media

These public meetings were advertised via various platforms, including social media. Screengrabs of the social media advertisement can be seen below, along with the meetings' agenda and sign in sheet.



County of Hamilton

EMERGENCY MANAGEMENT AND HOMELAND SECURITY AGENCY

NICK CROSSLEY, CEM, CPM
DIRECTOR

2000 RADCLIFF DRIVE
CINCINNATI, OHIO 45204
PHONE: 513-263-8200
FAX: 513-263-8222

FOR IMMEDIATE RELEASE

April 24, 2023

Contact:

Ryan McEwan – Assistant Director
Hamilton County Emergency Management and Homeland Security Agency Phone: 513-263-8016
Email: Ryan.McEwan@hamiltoncountyohio.gov

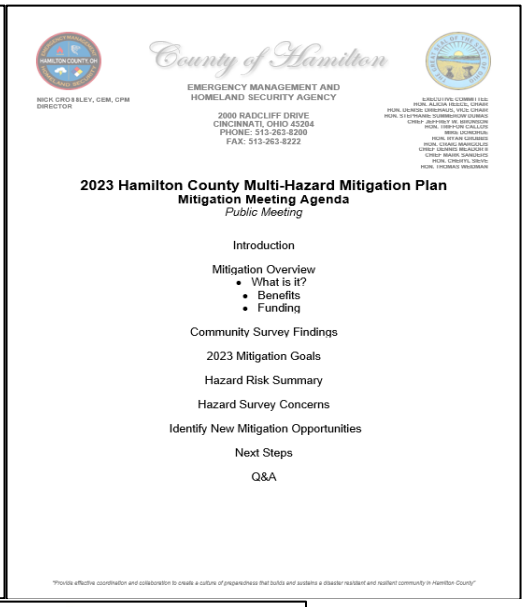
Hamilton County Emergency Management and Homeland Security Agency to Host Meetings for Public Input on Hazard Mitigation Plan

HAMILTON COUNTY, OHIO – Hamilton County Emergency Management and Homeland Security Agency (EMHSA) will be hosting a series of public meetings to review updates to the Multi-Hazard Mitigation Plan, which is undergoing its 5-year update, with Hamilton County residents. All those who live or work in Hamilton County are invited to attend one of the meetings which will provide attendees with an opportunity to review the potential hazards that could impact the County, the goals and strategies for addressing those hazards, and to provide input on various mitigation measures intended to eliminate or reduce the negative consequences of those hazards. The public meetings will be held on the following dates and locations:

- **Friday, May 5, 2:00-3:30 p.m.** – Blue Ash Branch Public Library (4911 Cooper Rd., Cincinnati, OH 45242)
- **Monday, May 8, 6:30-8:00 p.m.** – Walnut Hills Branch Public Library (2533 Kemper Ln., Cincinnati, OH 45206)
- **Wednesday, May 10, 10:00-11:30 a.m.** – Groesbeck Branch Public Library (2994 Galbraith Rd., Cincinnati, OH 45239)
- **Friday, May 12, 9:00-10:30 a.m.** – Virtual Microsoft Teams Meeting – www.hamiltoncountyohioema.org/mitigation/

###

"Provide effective coordination and collaboration to create a culture of preparedness that builds and sustains a disaster resistant and resilient community in Hamilton County"



County of Hamilton

EMERGENCY MANAGEMENT AND HOMELAND SECURITY AGENCY

NICK CROSSLEY, CEM, CPM
DIRECTOR

2000 RADCLIFF DRIVE
CINCINNATI, OHIO 45204
PHONE: 513-263-8200
FAX: 513-263-8222

2023 Hamilton County Multi-Hazard Mitigation Plan
Mitigation Meeting Agenda
Public Meeting

Introduction

Mitigation Overview
- What is it?
- Benefits
- Funding

Community Survey Findings

2023 Mitigation Goals

Hazard Risk Summary

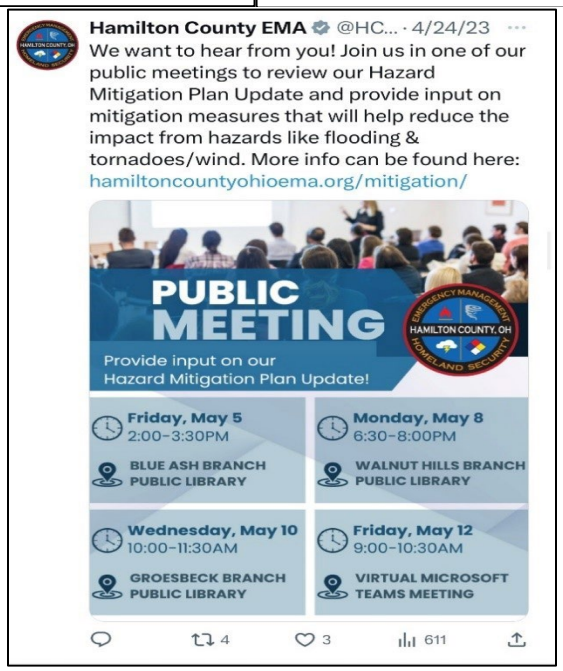
Hazard Survey Concerns

Identify New Mitigation Opportunities

Next Steps

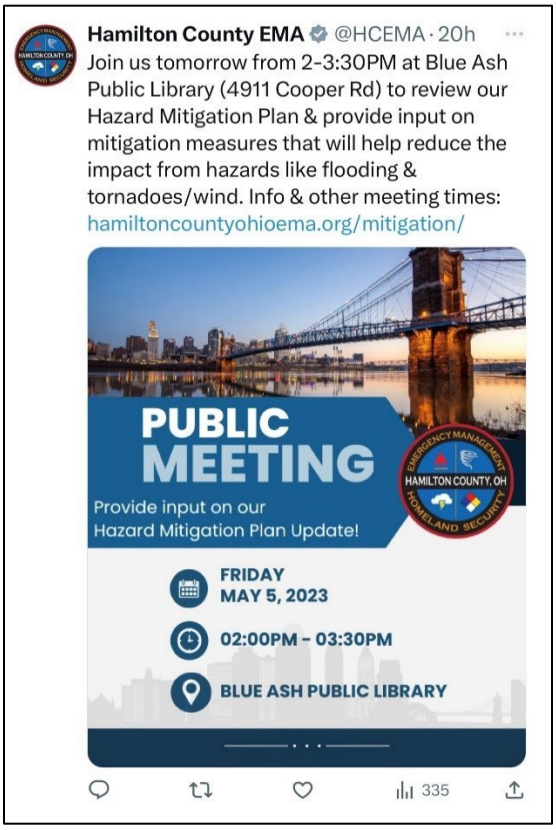
Q&A

"Provide effective coordination and collaboration to create a culture of preparedness that builds and sustains a disaster resistant and resilient community in Hamilton County"



Blue Ash Public Library

Meeting 1: Friday, May 5, 2:00 – 3:30 p.m.



Walnut Hills Library

Meeting 2: Monday, May 8, 6:30 – 8:00 p.m.



Groesbeck Library

Meeting 3: Wednesday, May 10, 10:00 – 11:30 a.m.



Virtual Microsoft Teams Meeting – www.hamiltoncountyohioema.org/mitigation/

Meeting 4: Virtual public Meeting Via Microsoft Teams

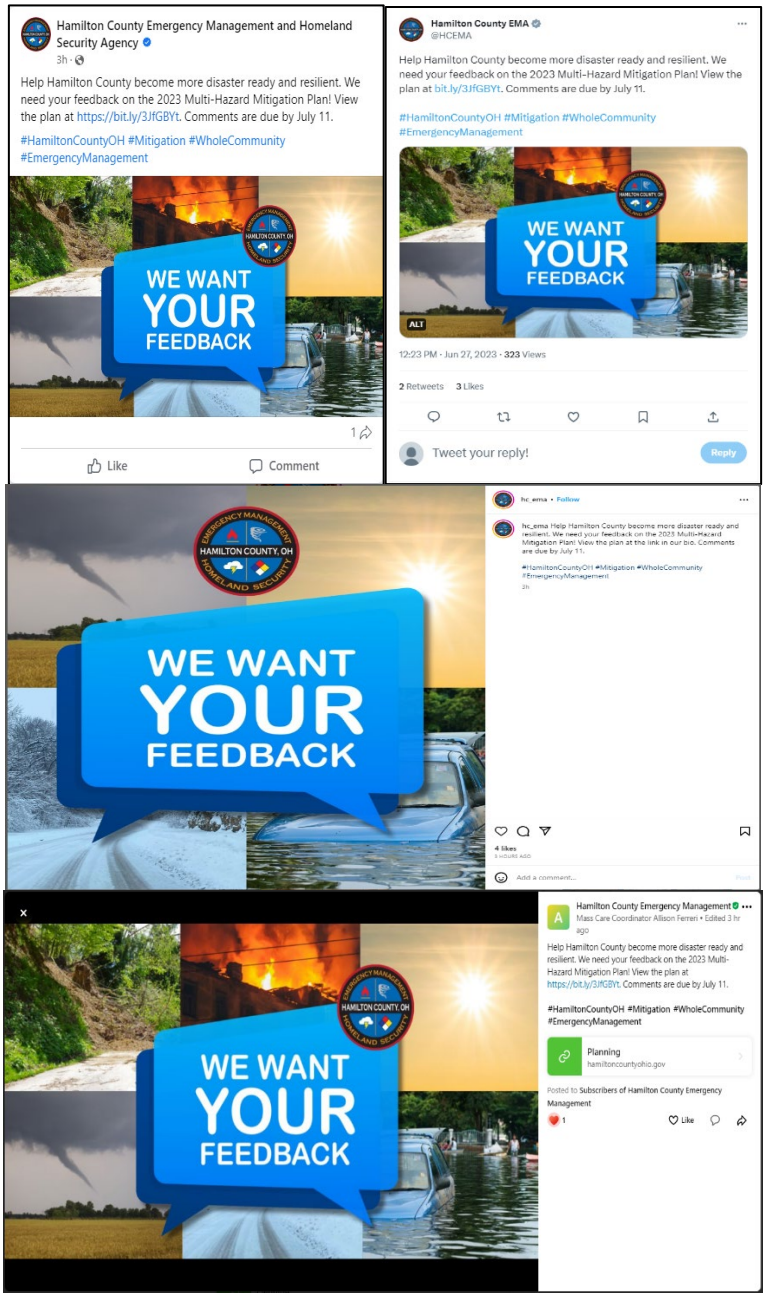


Public Comment Period

Hamilton County's Emergency Management and Homeland Security Agency (EMHSA) sought public input on the Hamilton County Multi-Hazard Mitigation Plan. EMHSA invited their partners and public stakeholders to provide input during the comment review period before the Plan was submitted to Ohio EMA and FEMA for review. The comment period was consisted of 2 weeks (June 27 – July 11, 2023) for feedback.

Social Media

The public comment period was advertised via multiple social media platforms. Screengrabs of the social media advertisement can be seen below via Facebook, Instagram, Twitter, and Nextdoor.



Survey Questionnaire

The questionnaire was distributed through a variety of methods beginning on February 13, 2023 and was closed on March 17, 2023. The questionnaire was promoted by local media stations and dispersed via e-mail blasts, social media platforms (Facebook, Twitter, Instagram), and the Nextdoor app. Community organizations were critical in connecting county and city residents with the questionnaire, and the Hamilton County Emergency Management and Homeland Security Agency used their broad-based distribution lists of community stakeholders to disseminate the questionnaire to residents and employees. Ultimately, respondents for this questionnaire were selected from among those who volunteered to participate. No special weighting was done to reflect the demographic composition of the County.

The questionnaire used a combination of descriptive and exploratory questions to gain an understanding of general preparedness intentions and behavior, as well as, personal and demographic factors influencing decision making. These questions further consisted of select categories, these categories include:

- general preparedness
- emergency information sources
- hazard risk perception
- hazard mitigation priorities
- disaster experience
- evacuation
- functional and access needs
- demographics

The questionnaire amounted to 32 questions of multiple choice and open-ended questions. In total, 1,616 respondents participated in the survey. To ensure all data could be accurately correlated, only the 1,102 completed questionnaires were used in this report (please reference the first row in the table below). 56 respondents were disqualified for living and working outside the county, while 458 submitted incomplete questionnaires.

- Completed surveys included those responses where the respondent started and reached the end of the survey. In some situations, the respondent chose not to answer one or more questions which is why some discrepancies exist in the total number of responses per question.

Table 1: Survey Totals

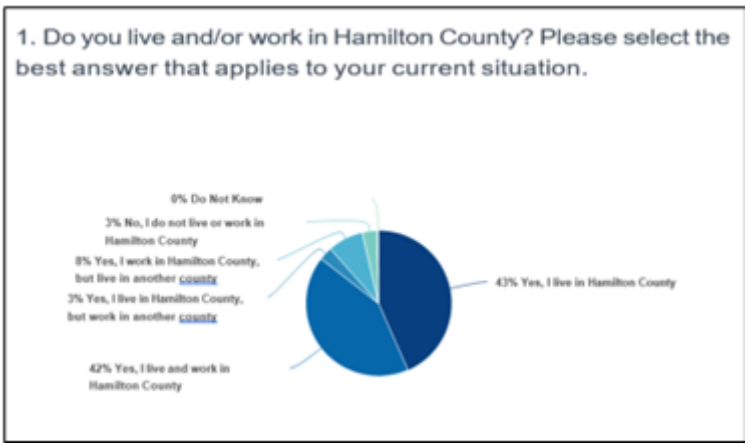
Survey Status	Total
Completed	1,102
Partial	458
Disqualified	56
Total	1,616

Survey Results

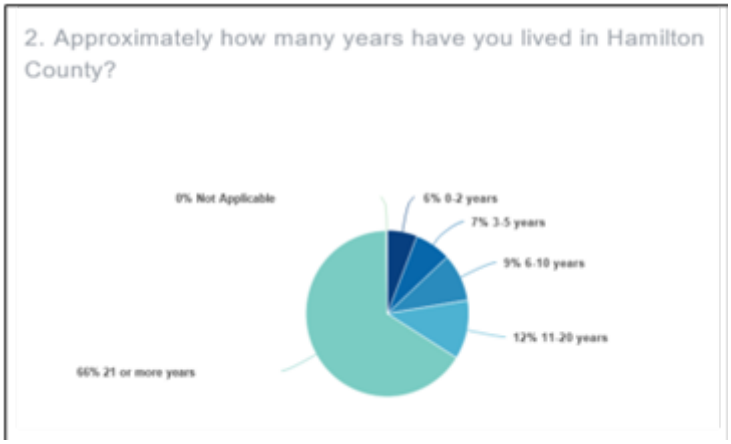
Screengrabs of the questions and their corresponding results are outlined below.

General Preparedness

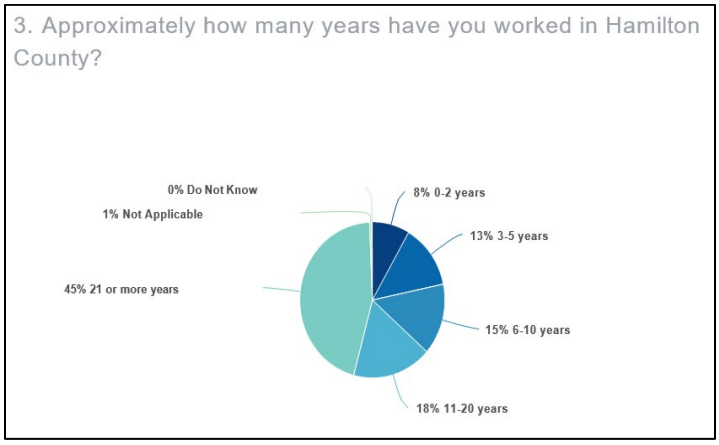
Question 1: Do you live and/or work in Hamilton County?



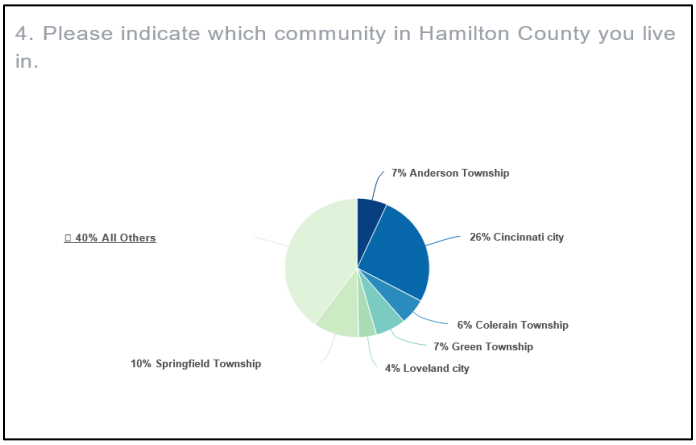
Question 2: Approximately how many years have you lived in Hamilton County?



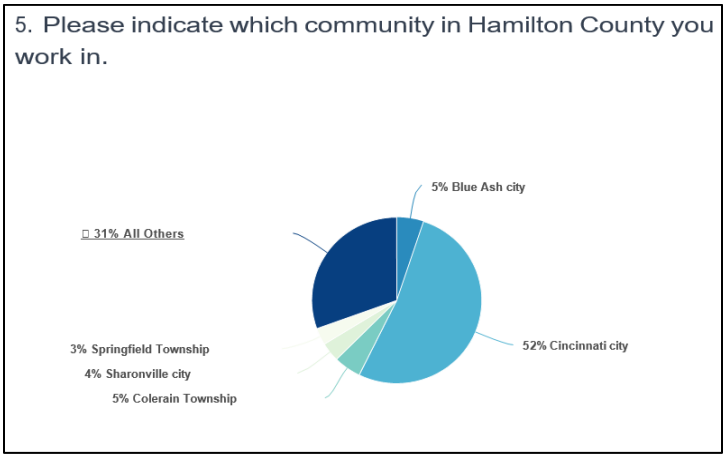
Question 3: Approximately how many years have you worked in Hamilton County?



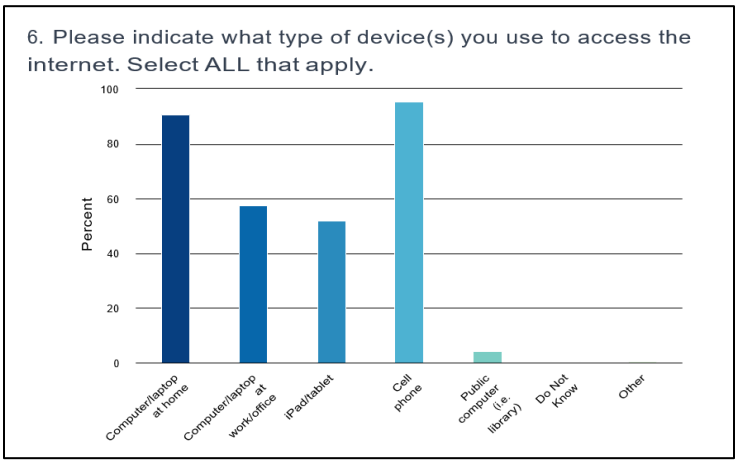
Question 4: Please indicate which community in Hamilton County you live in.



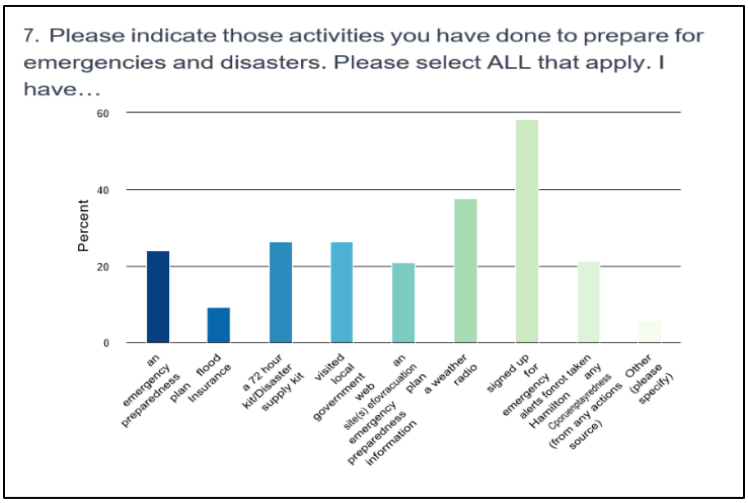
Question 5: Please indicate which community in Hamilton County you work in.



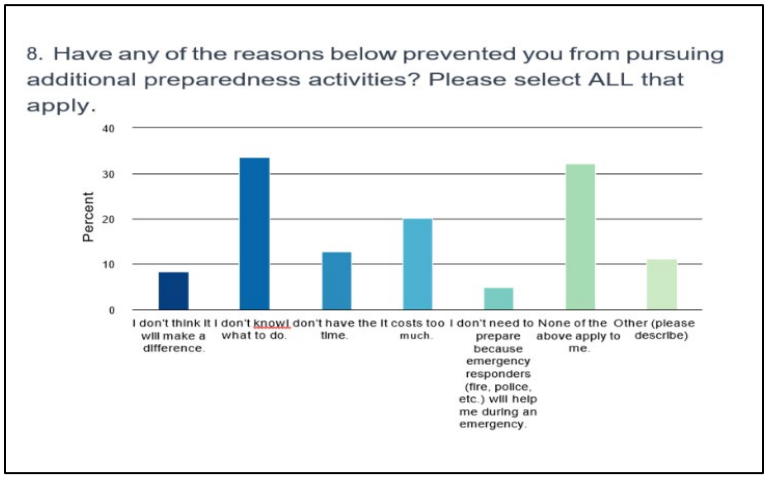
Question 6: Please indicate what type of device(s) you use to access the internet.



Question 7: Please indicate those activities you have done to prepare for emergencies and disasters.



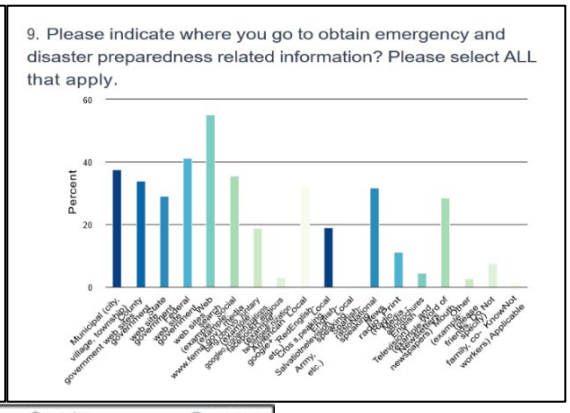
Question 8: Have any of the reasons below prevented you from pursuing additional preparedness activities?



Emergency Information Sources

Question 9: Please indicate where you go to obtain emergency and disaster preparedness related information?

Value	Percent	Responses
Municipal (city, village, township) government web sites	37.8%	479
County government web site	34.1%	432
State government web site	29.3%	371
Federal government web sites (example: www.fema.gov)	41.2%	522
Web search (example: bing.com, google.com)	55.4%	702
Social media (example: facebook, twitter, google+, etc.)	35.7%	453
Voluntary organizations (example: American Red Cross, Salvation Army, etc.)	19.0%	241
Religious Organization	3.1%	39

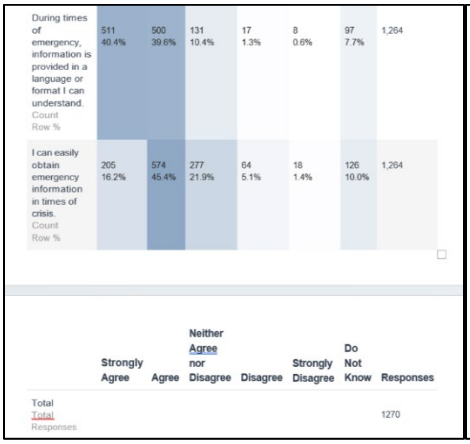


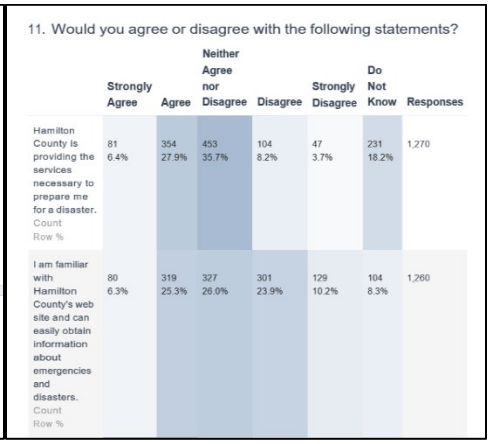
Value	Percent	Responses
Local English-speaking television	31.7%	402
Local English-speaking radio	19.3%	245
Local Spanish-speaking radio	0.1%	1
National News (Radio and Television)	36.8%	463
Print Media - English (example: newspapers)	11.2%	142
Brochures and Newsletters	4.6%	58
Word of Mouth (example: friends, family, co-workers)	28.8%	363
Other (please specify)	2.8%	36
Do Not Know	7.6%	96
Not Applicable	1.8%	23

Question 10: Please indicate how you expected to receive alerts and information during an emergency?

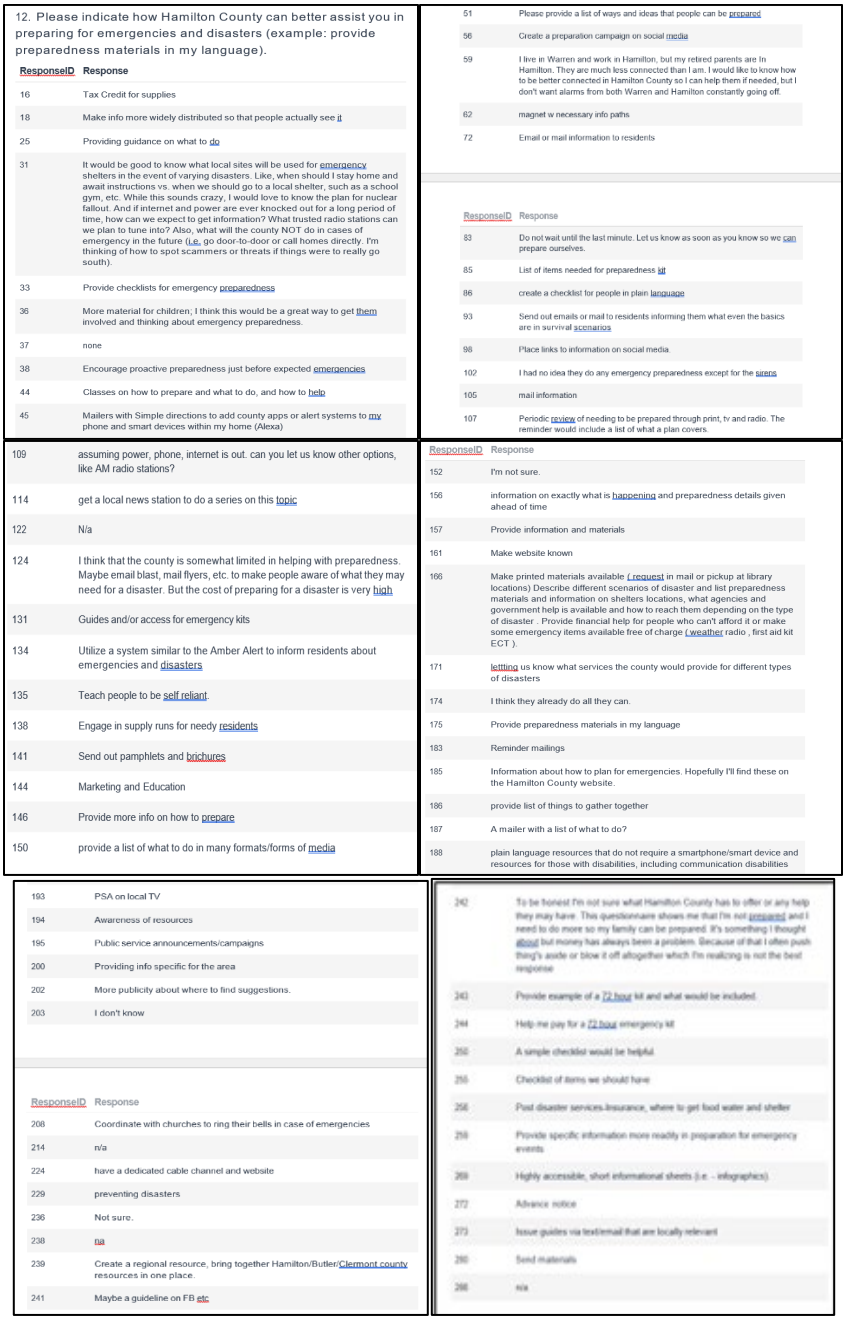


Question 11: Would you agree or disagree with the following statements?



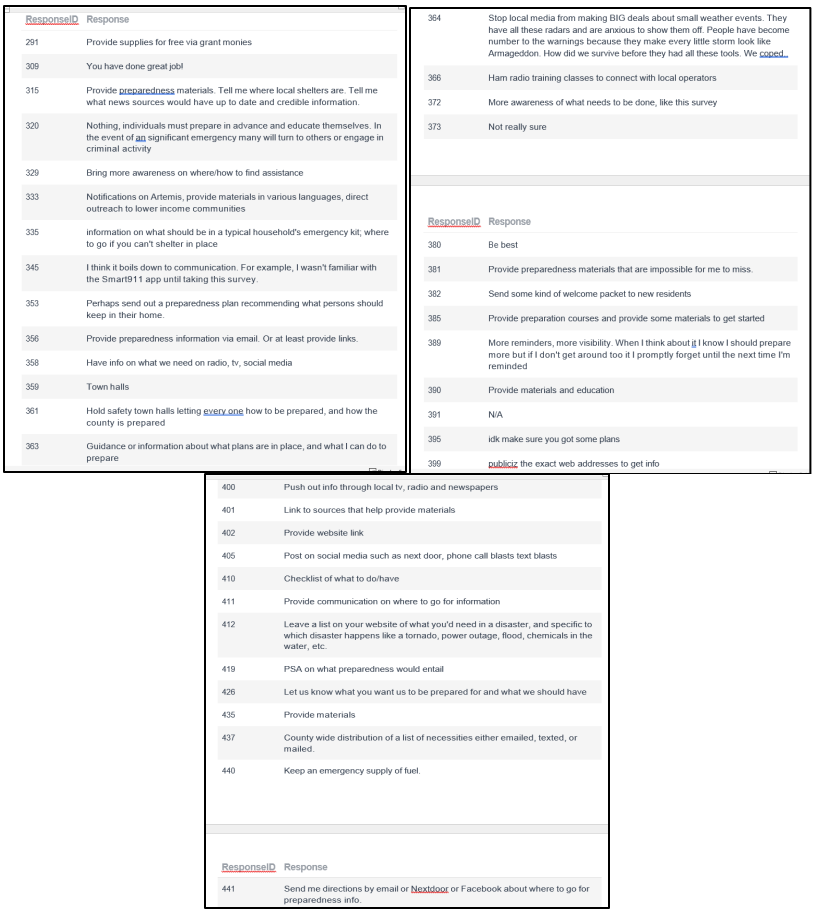


Question 12: Please indicate how Hamilton County can better assist you in preparing for emergencies and disasters.



12. Please indicate how Hamilton County can better assist you in preparing for emergencies and disasters (example: provide preparedness materials in my language).

ResponseID	Response
16	Tax Credit for supplies
18	Make info more widely distributed so that people actually see it
25	Providing guidance on what to do
31	It would be good to know what local sites will be used for emergency shelters in the event of varying disasters. Like, when should I stay home and await instructions vs. when we should go to a local shelter, such as a school gym, etc. While this sounds crazy, I would love to know the plan for nuclear fallout. And if internet and power are ever knocked out for a long period of time, how can we expect to get information? What trusted radio stations can we plan to tune into? Also, what will the county NOT do in cases of emergency in the future (i.e. go door-to-door or call homes directly. I'm thinking of how to spot scammers or threats if things were to really go south).
33	Provide checklists for emergency preparedness
36	More material for children; I think this would be a great way to get them involved and thinking about emergency preparedness.
37	none
38	Encourage proactive preparedness just before expected emergencies
44	Classes on how to prepare and what to do, and how to help
45	Mailers with Simple directions to add county apps or alert systems to my phone and smart devices within my home (Alexa)
51	Please provide a list of ways and ideas that people can be prepared
56	Create a preparation campaign on social media
59	I live in Warren and work in Hamilton, but my retired parents are in Hamilton. They are much less connected than I am. I would like to know how to be better connected in Hamilton County so I can help them if needed, but I don't want alarms from both Warren and Hamilton constantly going off.
62	magnet w necessary info paths
72	Email or mail information to residents
83	Do not wait until the last minute. Let us know as soon as you know so we can prepare ourselves.
85	List of items needed for preparedness kit
86	create a checklist for people in plain language
93	Send out emails or mail to residents informing them what even the basics are in survival scenarios
98	Place links to information on social media.
102	I had no idea they do any emergency preparedness except for the sirens
105	mail information
107	Periodic review of needing to be prepared through print, tv and radio. The reminder would include a list of what a plan covers.
109	assuming power, phone, internet is out. can you let us know other options, like AM radio stations?
114	get a local news station to do a series on this topic
122	N/a
124	I think that the county is somewhat limited in helping with preparedness. Maybe email blast, mail flyers, etc. to make people aware of what they may need for a disaster. But the cost of preparing for a disaster is very high
131	Guides and/or access for emergency kits
134	Utilize a system similar to the Amber Alert to inform residents about emergencies and disasters
135	Teach people to be self reliant.
138	Engage in supply runs for needy residents
141	Send out pamphlets and brichures
144	Marketing and Education
146	Provide more info on how to prepare
150	provide a list of what to do in many formats/forms of media
152	I'm not sure.
156	information on exactly what is happening and preparedness details given ahead of time
157	Provide information and materials
161	Make website known
166	Make printed materials available (request in mail or pickup at library locations) Describe different scenarios of disaster and list preparedness materials and information on shelters locations, what agencies and government help is available and how to reach them depending on the type of disaster . Provide financial help for people who can't afford it or make some emergency items available free of charge (weather radio , first aid kit ECT).
171	letting us know what services the county would provide for different types of disasters
174	I think they already do all they can.
175	Provide preparedness materials in my language
183	Reminder mailings
185	Information about how to plan for emergencies. Hopefully I'll find these on the Hamilton County website.
186	provide list of things to gather together
187	A mailer with a list of what to do?
188	plain language resources that do not require a smartphone/smart device and resources for those with disabilities, including communication disabilities
193	PSA on local TV
194	Awareness of resources
195	Public service announcements/campaigns
200	Providing info specific for the area
202	More publicity about where to find suggestions.
203	I don't know
208	Coordinate with churches to ring their bells in case of emergencies
214	n/a
224	have a dedicated cable channel and website
229	preventing disasters
236	Not sure.
238	na
239	Create a regional resource, bring together Hamilton/Butler/Clermont county resources in one place.
241	Maybe a guideline on FB etc
242	To be honest I'm not sure what Hamilton County has to offer or any help they may have. This questionnaire shows me that I'm not prepared and I need to do more so my family can be prepared. It's something I thought about but money has always been a problem. Because of that I often push thing's aside or blow it off altogether which I'm realizing is not the best response
243	Provide example of a 72 hour kit and what would be included.
244	Help me pay for a 72 hour emergency kit
250	A simple checklist would be helpful.
255	Checklist of items we should have
256	Post disaster services.Insurance, where to get food water and shelter
259	Provide specific information more readily in preparation for emergency events
269	Highly accessible, short informational sheets (i.e. - infographics)
272	Advance notice
273	Issue guides via text/email that are locally relevant
280	Send materials
286	n/a



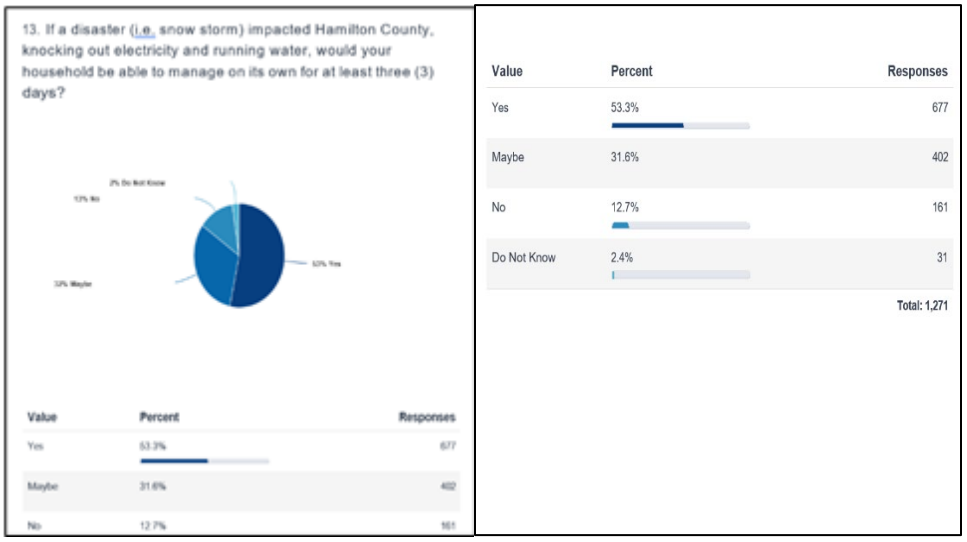
ResponseID	Response
291	Provide supplies for free via grant monies
309	You have done great job!
315	Provide preparedness materials. Tell me where local shelters are. Tell me what news sources would have up to date and credible information.
320	Nothing, individuals must prepare in advance and educate themselves. In the event of an significant emergency many will turn to others or engage in criminal activity
329	Bring more awareness on where/how to find assistance
333	Notifications on Artemis, provide materials in various languages, direct outreach to lower income communities
335	information on what should be in a typical household's emergency kit; where to go if you can't shelter in place
345	I think it boils down to communication. For example, I wasn't familiar with the Smart911 app until taking this survey.
353	Perhaps send out a preparedness plan recommending what persons should keep in their home.
356	Provide preparedness information via email. Or at least provide links.
358	Have info on what we need on radio, tv, social media
359	Town halls
361	Hold safety town halls letting every one how to be prepared, and how the county is prepared
363	Guidance or information about what plans are in place, and what I can do to prepare
364	Stop local media from making BIG deals about small weather events. They have all these radars and are anxious to show them off. People have become number to the warnings because they make every little storm look like Armageddon. How did we survive before they had all these tools. We coped..
366	Ham radio training classes to connect with local operators
372	More awareness of what needs to be done, like this survey
373	Not really sure

ResponseID	Response
380	Be best
381	Provide preparedness materials that are impossible for me to miss.
382	Send some kind of welcome packet to new residents
385	Provide preparation courses and provide some materials to get started
389	More reminders, more visibility. When I think about it I know I should prepare more but if I don't get around too it I promptly forget until the next time I'm reminded
390	Provide materials and education
391	N/A
395	idk make sure you got some plans
399	publiciz the exact web addresses to get info
400	Push out info through local tv, radio and newspapers
401	Link to sources that help provide materials
402	Provide website link
405	Post on social media such as next door, phone call blasts text blasts
410	Checklist of what to do/have
411	Provide communication on where to go for information
412	Leave a list on your website of what you'd need in a disaster, and specific to which disaster happens like a tornado, power outage, flood, chemicals in the water, etc.
419	PSA on what preparedness would entail
426	Let us know what you want us to be prepared for and what we should have
435	Provide materials
437	County wide distribution of a list of necessities either emailed, texted, or mailed.
440	Keep an emergency supply of fuel.

ResponseID	Response
441	Send me directions by email or Nextdoor or Facebook about where to go for preparedness info.

Hazard Risk Perceptions

Question 13: If a disaster (i.e., snow storm) impacted Hamilton County, knocking out electricity and running water, would your household be able to manage on its own for at least three (3) days?



Question 14: Do you believe that your household and/or place of business might ever be threatened by the following hazards?

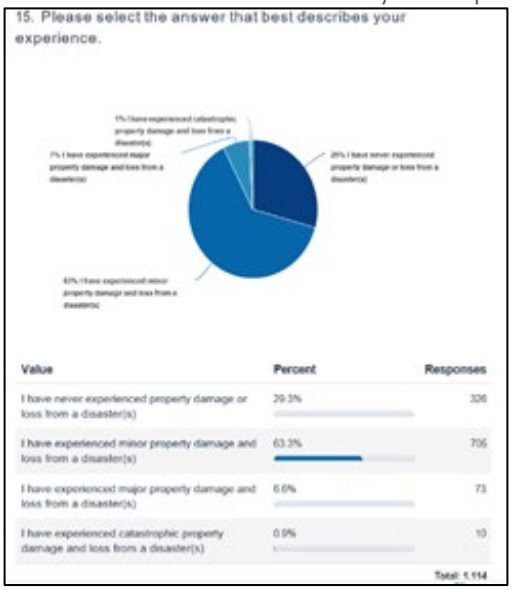


14. Do you believe that your household and/or place of business might ever be threatened by the following hazards? Please rate what hazards present the greatest risk.Low Risk = Low impact on threat to life and property damage Medium Risk = Medium impact on threat to life and property damage High Risk = High impact on threat to life and property damage

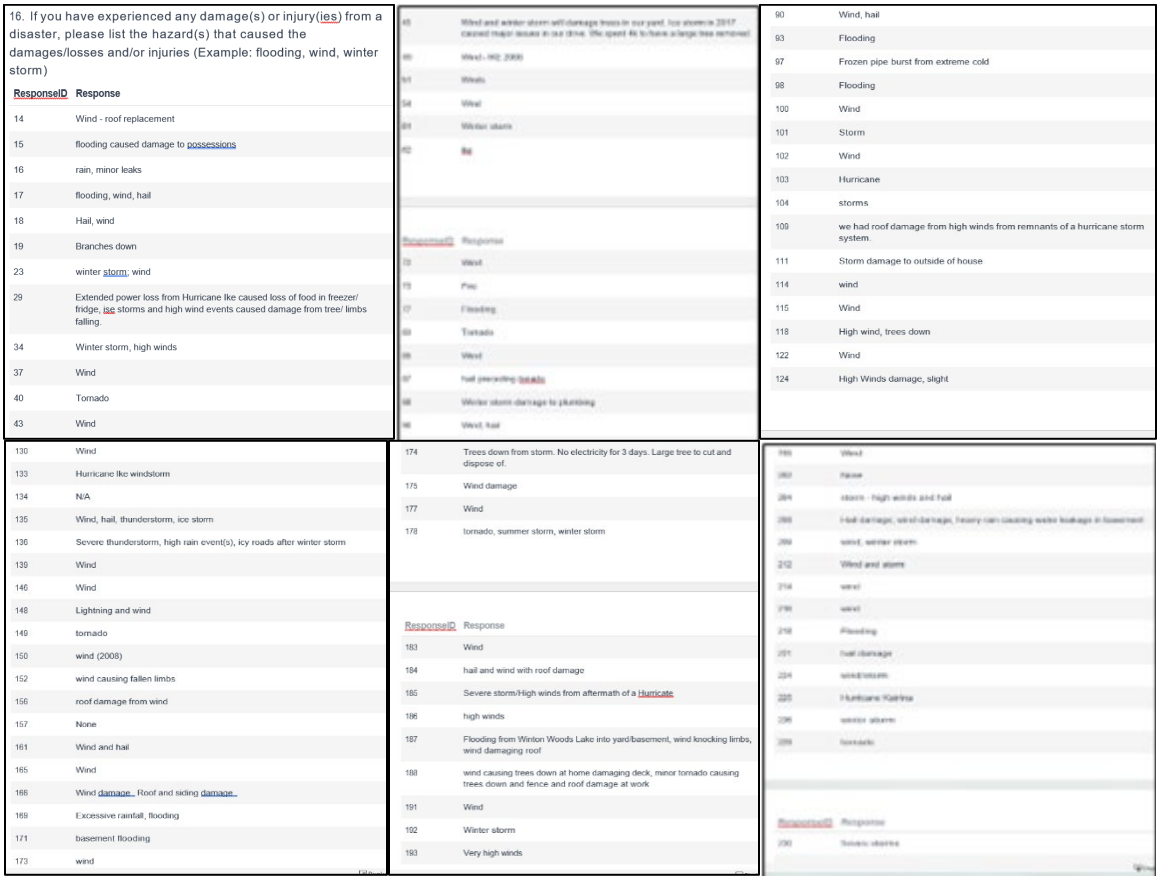
	Low Risk	Medium Risk	High Risk	Not Applicable	Responses
Extreme Heat Incident	216 19.5%	562 50.7%	330 29.8%	1 0.1%	1,109
Flash Flooding	530 47.8%	390 35.2%	153 13.8%	35 3.2%	1,108
Flooding: Riverine	686 62.1%	201 18.2%	76 6.9%	142 12.9%	1,105
Hazardous Materials Incident (example: Chemical Spill)	294 26.4%	514 46.2%	298 26.8%	6 0.5%	1,112
High Wind and Tornado	59 5.3%	521 46.8%	532 47.8%	1 0.1%	1,113
Infrastructure and Structural Failure (example: Bridge Collapse)	542 48.9%	397 35.8%	133 12.0%	36 3.2%	1,108
Land Loss (example: Sinkhole, Subsidence, Erosion)	663 59.7%	344 31.0%	86 7.7%	18 1.6%	1,111
Landslide	794 71.5%	207 18.6%	65 5.9%	45 4.1%	1,111
Mass Transportation Incident (example: Train Derailment)	493 44.4%	389 35.0%	196 17.6%	33 3.0%	1,111
Public Health Emergency (example: Pandemic Disease)	136 12.2%	509 45.8%	462 41.5%	5 0.4%	1,112
Severe Winter Storm (example: Heavy Snowfall, Ice Storm)	89 8.0%	529 47.5%	495 44.5%	0 0.0%	1,113
Severe Thunderstorm	89 8.0%	430 38.7%	591 53.2%	1 0.1%	1,111
Terrorism / Active Assailant Incident	525 47.4%	431 38.9%	145 13.1%	7 0.6%	1,108

Disaster Experience

Question 15: Please select the answer that best describes your experience?



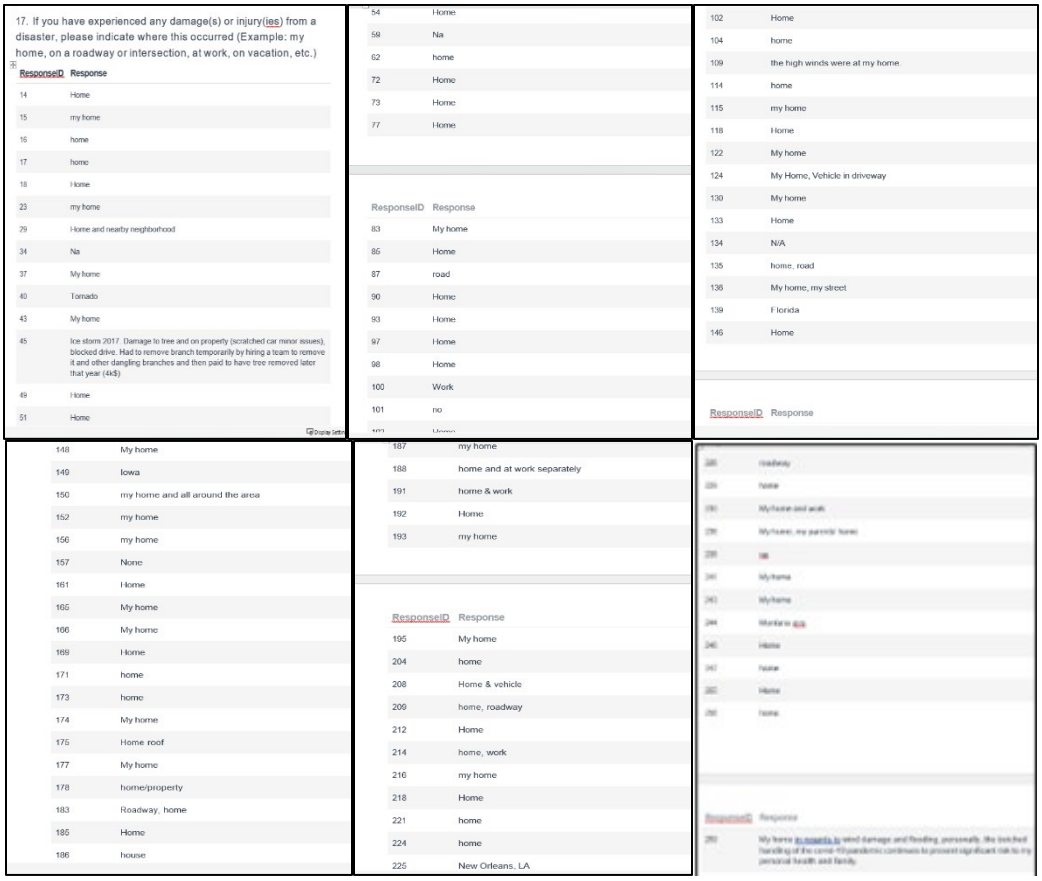
Question 16: If you have experienced any damage(s) or injury(ies) from a disaster, please list the hazard(s) that caused the damages/losses and/or injuries?



16. If you have experienced any damage(s) or injury(ies) from a disaster, please list the hazard(s) that caused the damages/losses and/or injuries (Example: flooding, wind, winter storm)

ResponseID	Response
14	Wind - roof replacement
15	flooding caused damage to possessions
16	rain, minor leaks
17	flooding, wind, hail
18	Hail, wind
19	Branches down
23	winter storm; wind
29	Extended power loss from Hurricane Ike caused loss of food in freezer/ fridge, ise storms and high wind events caused damage from tree/ limbs falling.
34	Winter storm, high winds
37	Wind
40	Tornado
43	Wind
90	Wind, hail
93	Flooding
97	Frozen pipe burst from extreme cold
98	Flooding
100	Wind
101	Storm
102	Wind
103	Hurricane
104	storms
109	we had roof damage from high winds from remnants of a hurricane storm system.
111	Storm damage to outside of house
114	wind
115	Wind
118	High wind, trees down
122	Wind
124	High Winds damage, slight
130	Wind
133	Hurricane Ike windstorm
134	N/A
135	Wind, hail, thunderstorm, ice storm
136	Severe thunderstorm, high rain event(s), icy roads after winter storm
139	Wind
146	Wind
148	Lightning and wind
149	tornado
150	wind (2008)
152	wind causing fallen limbs
156	roof damage from wind
157	None
161	Wind and hail
165	Wind
166	Wind damage , Roof and siding damage ,
169	Excessive rainfall, flooding
171	basement flooding
173	wind
174	Trees down from storm. No electricity for 3 days. Large tree to cut and dispose of.
175	Wind damage
177	Wind
178	tornado, summer storm, winter storm
183	Wind
184	hail and wind with roof damage
185	Severe storm/High winds from aftermath of a Hurricate
186	high winds
187	Flooding from Winton Woods Lake into yard/basement, wind knocking limbs, wind damaging roof
188	wind causing trees down at home damaging deck, minor tornado causing trees down and fence and roof damage at work
191	Wind
192	Winter storm
193	Very high winds

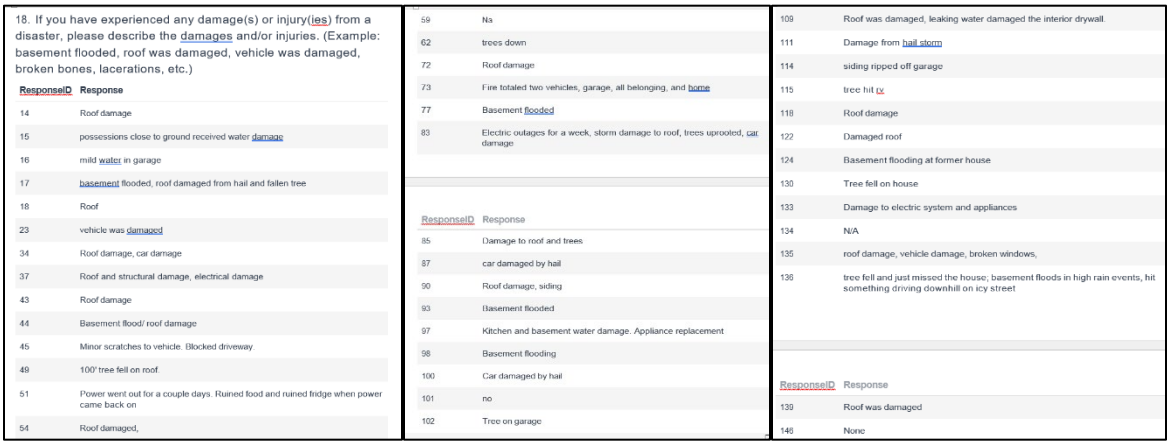
Question 17: If you have experienced any damage(s) or injury(ies) from a disaster, please indicate where this occurred.



17. If you have experienced any damage(s) or injury(ies) from a disaster, please indicate where this occurred (Example: my home, on a roadway or intersection, at work, on vacation, etc.)

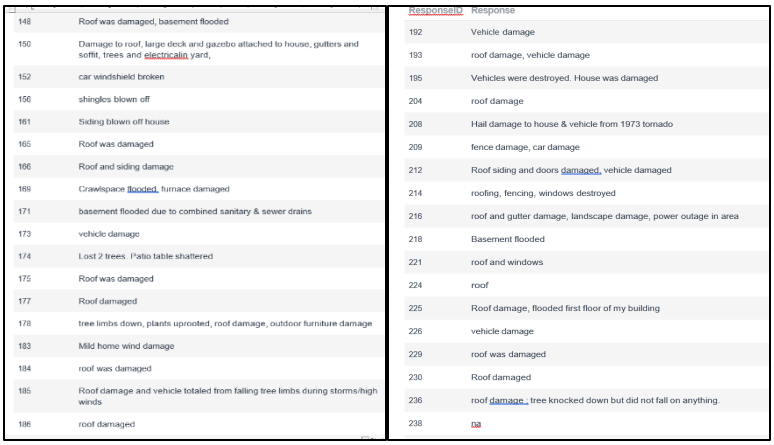
ResponseID	Response
14	Home
15	my home
16	home
17	home
18	Home
23	my home
29	Home and nearby neighborhood
34	Na
37	My home
40	Tornado
43	My home
45	Ice storm 2017. Damage to tree and on property (scratched car minor issues), blocked drive. Had to remove branch temporarily by hiring a team to remove it and other dangling branches and then paid to have tree removed later that year (4k$)
49	Home
51	Home
54	Home
59	Na
62	home
72	Home
73	Home
77	Home
83	My home
85	Home
87	road
90	Home
93	Home
97	Home
98	Home
100	Work
101	no
102	Home
104	home
109	the high winds were at my home.
114	home
115	my home
118	Home
122	My home
124	My Home, Vehicle in driveway
130	My home
133	Home
134	N/A
135	home, road
136	My home, my street
139	Florida
146	Home
148	My home
149	Iowa
150	my home and all around the area
152	my home
156	my home
157	None
161	Home
165	My home
166	My home
169	Home
171	home
173	home
174	My home
175	Home roof
177	My home
178	home/property
183	Roadway, home
185	Home
186	house
187	my home
188	home and at work separately
191	home & work
192	Home
193	my home
195	My home
204	home
208	Home & vehicle
209	home, roadway
212	Home
214	home, work
216	my home
218	Home
221	home
224	home
225	New Orleans, LA

Question 18: If you have experienced any damage(s) or injury(ies) from a disaster, please describe the damages and/or injuries.



18. If you have experienced any damage(s) or injury(ies) from a disaster, please describe the damages and/or injuries. (Example: basement flooded, roof was damaged, vehicle was damaged, broken bones, lacerations, etc.)

ResponseID	Response
14	Roof damage
15	possessions close to ground received water damage
16	mild water in garage
17	basement flooded, roof damaged from hail and fallen tree
18	Roof
23	vehicle was damaged
34	Roof damage, car damage
37	Roof and structural damage, electrical damage
43	Roof damage
44	Basement flood/ roof damage
45	Minor scratches to vehicle. Blocked driveway.
49	100' tree fell on roof.
51	Power went out for a couple days. Ruined food and ruined fridge when power came back on
54	Roof damaged,
59	Na
62	trees down
72	Roof damage
73	Fire totaled two vehicles, garage, all belonging, and home
77	Basement flooded
83	Electric outages for a week, storm damage to roof, trees uprooted, car damage
85	Damage to roof and trees
87	car damaged by hail
90	Roof damage, siding
93	Basement flooded
97	Kitchen and basement water damage. Appliance replacement
98	Basement flooding
100	Car damaged by hail
101	no
102	Tree on garage
109	Roof was damaged, leaking water damaged the interior drywall.
111	Damage from hail storm
114	siding ripped off garage
115	tree hit rv
118	Roof damage
122	Damaged roof
124	Basement flooding at former house
130	Tree fell on house
133	Damage to electric system and appliances
134	N/A
135	roof damage, vehicle damage, broken windows,
136	tree fell and just missed the house; basement floods in high rain events, hit something driving downhill on icy street
139	Roof was damaged
146	None



148	Roof was damaged, basement flooded
150	Damage to roof, large deck and gazebo attached to house, gutters and soffit, trees and electricalin yard,
152	car windshield broken
156	shingles blown off
161	Siding blown off house
165	Roof was damaged
166	Roof and siding damage
169	Crawlspace flooded, furnace damaged
171	basement flooded due to combined sanitary & sewer drains
173	vehicle damage
174	Lost 2 trees. Patio table shattered
175	Roof was damaged
177	Roof damaged
178	tree limbs down, plants uprooted, roof damage, outdoor furniture damage
183	Mild home wind damage
184	roof was damaged
185	Roof damage and vehicle totaled from falling tree limbs during storms/high winds
186	roof damaged

ResponseID	Response
192	Vehicle damage
193	roof damage, vehicle damage
195	Vehicles were destroyed. House was damaged
204	roof damage
208	Hail damage to house & vehicle from 1973 tornado
209	fence damage, car damage
212	Roof siding and doors damaged, vehicle damaged
214	roofing, fencing, windows destroyed
216	roof and gutter damage, landscape damage, power outage in area
218	Basement flooded
221	roof and windows
224	roof
225	Roof damage, flooded first floor of my building
226	vehicle damage
229	roof was damaged
230	Roof damaged
236	roof damage , tree knocked down but did not fall on anything.
238	na

Hazard Mitigation Priorities

Question 19: Based on YOUR PERCEPTION of your jurisdiction's hazards, to what degree of emphasis would you expect your jurisdiction to mitigate the following hazards?



19. Based on YOUR PERCEPTION of your jurisdiction's hazards, to what degree of emphasis would you expect your jurisdiction to mitigate the following hazards?Mitigation definition: Hazard mitigation is any sustainable action that reduces or eliminates long-term risk to people and property from future disasters. Hazard mitigation includes long-term solutions that reduce the impact of disasters in the future. No Mitigation Needed = No mitigation on this hazard is expected or needed Low Priority = This hazard should be mitigated, but is not a high priority compared to other hazards Medium Priority = It is important to mitigate this hazard High Priority = It is a high priority to emphasize mitigation for this hazard

	No Mitigation Needed	Low Priority	Medium Priority	High Priority	Responses
Civil Disorder/Riot	146 13.4%	342 31.4%	293 26.9%	309 28.3%	1,090
Cyber Incident	66 6.1%	240 22.1%	406 37.4%	374 34.4%	1,086
Dam/Levee Failure	301 27.8%	351 32.4%	205 18.9%	226 20.9%	1,083
Drought	259 23.8%	516 47.5%	239 22.0%	72 6.6%	1,086
Earthquake	253 23.4%	494 45.6%	183 16.9%	153 14.1%	1,083
Extreme Cold Incident	76 7.0%	276 25.5%	476 44.0%	255 23.5%	1,083
Extreme Heat Incident	81 7.5%	297 27.4%	450 41.6%	255 23.5%	1,083
Flash Flooding	101 9.3%	282 26.0%	421 38.9%	279 25.8%	1,083
Flooding: Riverine	226 21.0%	332 30.9%	331 30.8%	186 17.3%	1,075
Hazardous Materials Incident (example: Chemical Spill)	40 3.7%	193 17.8%	330 30.4%	521 48.1%	1,084
High Wind and Tornado	43 4.0%	133 12.2%	428 39.4%	483 44.4%	1,087
Infrastructure and Structural Failure (example: Bridge Collapse)	75 6.9%	225 20.7%	342 31.5%	445 40.9%	1,087
Landslide	195 18.0%	415 38.3%	289 26.7%	185 17.1%	1,084
Mass Transportation Incident (example: Train Derailment)	97 8.9%	277 25.5%	338 31.1%	374 34.4%	1,086
Public Health Emergency (example: Pandemic Disease)	43 4.0%	161 14.9%	361 33.3%	518 47.8%	1,083
Severe Winter Storm (example: Heavy Snowfall, Ice Storm)	32 2.9%	146 13.5%	441 40.8%	466 42.9%	1,085
Land Loss (example: Sinkhole, Subsidence, Erosion)	151 13.9%	474 43.6%	310 28.5%	151 13.9%	1,086
Terrorism / Active Assailant Incident	64 5.9%	271 25.0%	319 29.4%	430 39.7%	1,084
Severe Thunderstorm	77 7.1%	250 23.1%	435 40.1%	322 29.7%	1,084
Urban Fire	157 14.5%	404 37.4%	309 28.6%	210 19.4%	1,080
Wildfires	321 29.7%	454 42.1%	179 16.6%	125 11.6%	1,079
Total					1090

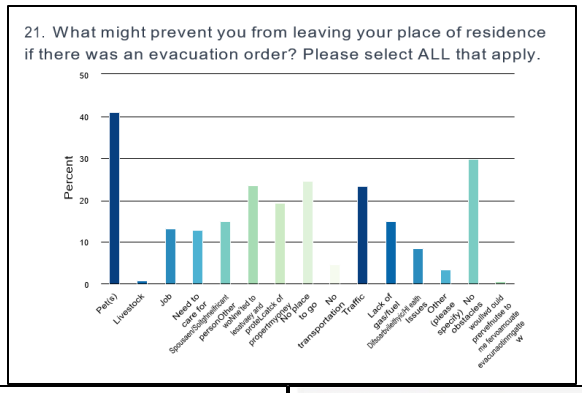
Evacuation

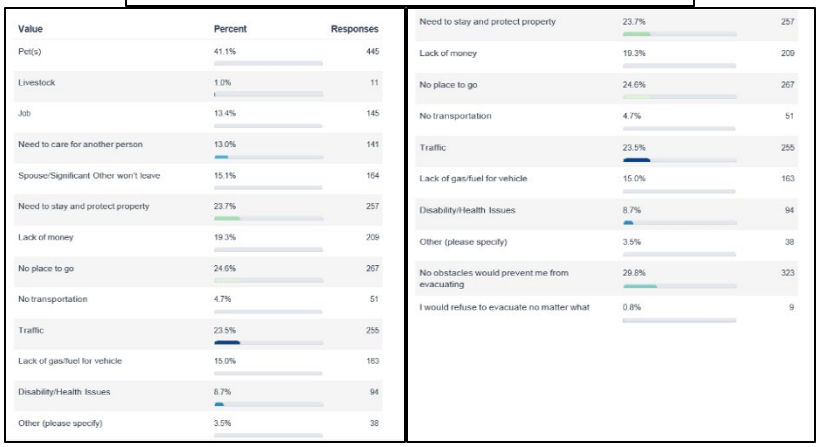
Question 20: If an evacuation was ordered for your area, please indicate how likely you would be to do the following.



	Very Unlikely	Unlikely	Unsure or Do Not Know	Likely	Very Likely	Not Applicable	Responses
I would first consult with family and friends outside my household before making a decision to evacuate. Count / Row %	109 10.2%	185 17.4%	127 11.9%	367 34.4%	267 25.0%	11 1.0%	1,066
Wait and see how bad the situation is going to be before deciding to evacuate. Count / Row %	162 15.1%	363 33.9%	220 20.5%	237 22.1%	82 7.7%	7 0.7%	1,071
Refuse to evacuate no matter what. Count / Row %	741 69.4%	214 20.1%	79 7.4%	7 0.7%	14 1.3%	12 1.1%	1,067
Total Total Responses							1091

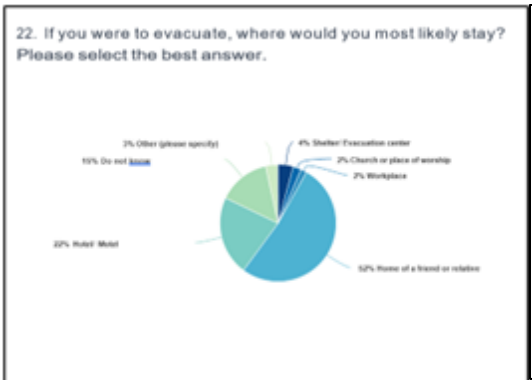
Question 21: What might prevent you from leaving your place of residence if there was an evacuation order?





Value	Percent	Responses
Pet(s)	41.1%	445
Livestock	1.0%	11
Job	13.4%	145
Need to care for another person	13.0%	141
Spouse/Significant Other won't leave	15.1%	164
Need to stay and protect property	23.7%	257
Lack of money	19.3%	209
No place to go	24.6%	267
No transportation	4.7%	51
Traffic	23.5%	255
Lack of gas/fuel for vehicle	15.0%	163
Disability/Health Issues	8.7%	94
Other (please specify)	3.5%	38
No obstacles would prevent me from evacuating	29.8%	323
I would refuse to evacuate no matter what	0.8%	9

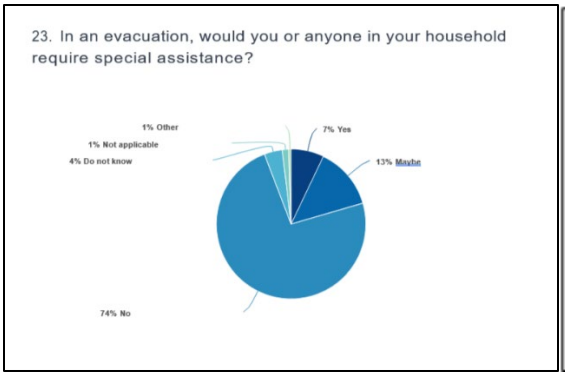
Question 22: If you were to evacuate, where would you most likely stay? Please select the best answer.



Value	Percent	Responses
Shelter/ Evacuation center	4.2%	46
Church or place of worship	2.3%	25
Workplace	1.6%	17
Home of a friend or relative	52.1%	570
Hotel/ Motel	22.0%	241
Do not know	14.5%	159
Other (please specify)	3.4%	37
		Total: 1,095

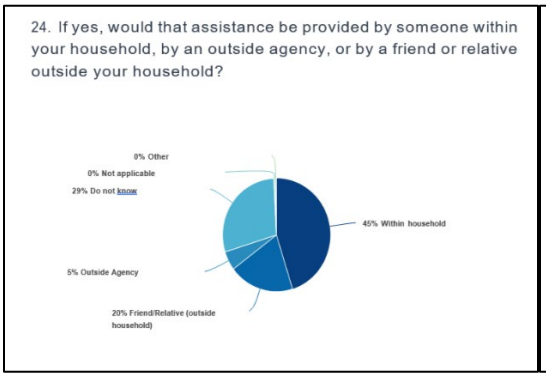
Functional and Access Needs

Question 23: In an evacuation, would you or anyone in your household require special assistance?



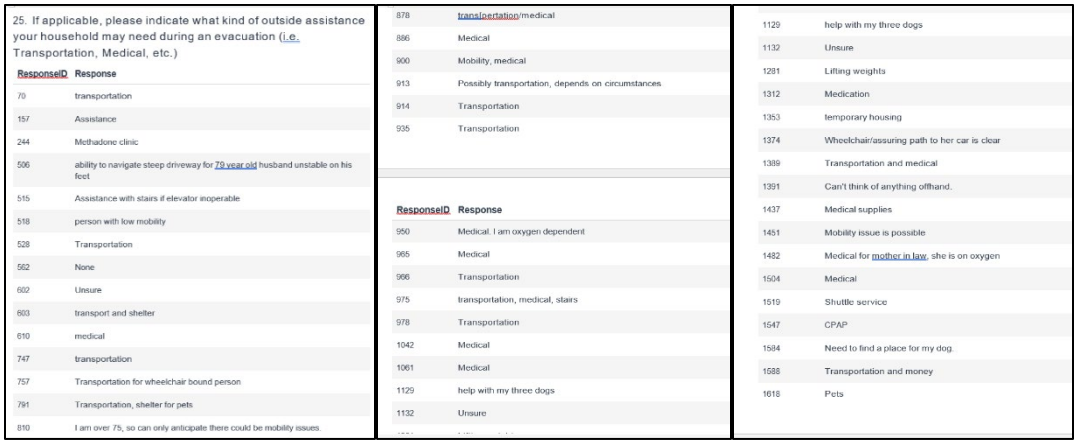
Value	Percent	Responses
Yes	7.1%	78
Maybe	13.4%	147
No	73.7%	808
Do not know	3.9%	43
Not applicable	1.4%	15
Other	0.5%	6
		Total: 1,097

Question 24: If yes, would that assistance be provided by someone within your household, by an outside agency, or by a friend or relative outside your household?



Value	Percent	Responses
Within household	45.1%	101
Friend/Relative (outside household)	19.6%	44
Outside Agency	5.4%	12
Do not know	29.0%	65
Not applicable	0.4%	1
Other	0.4%	1
		Total: 224

Question 25: If applicable, please indicate what kind of outside assistance your household may need during an evacuation.

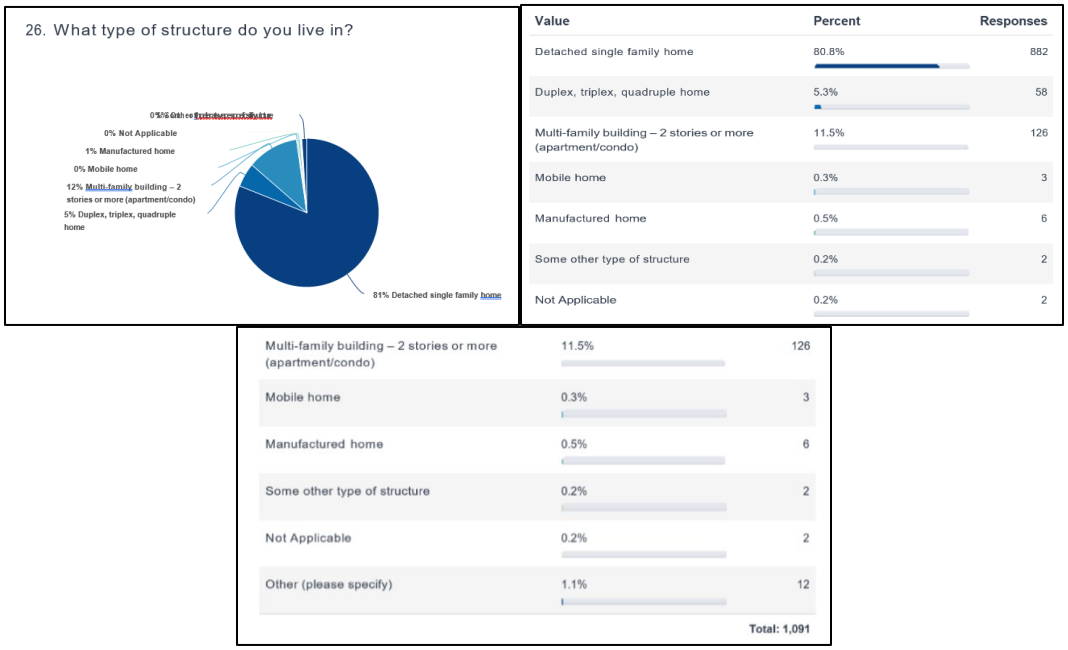


25. If applicable, please indicate what kind of outside assistance your household may need during an evacuation (i.e. Transportation, Medical, etc.)

ResponseID	Response
70	transportation
157	Assistance
244	Methadone clinic
506	ability to navigate steep driveway for 79 year old husband unstable on his feet
515	Assistance with stairs if elevator inoperable
518	person with low mobility
528	Transportation
562	None
602	Unsure
603	transport and shelter
610	medical
747	transportation
757	Transportation for wheelchair bound person
791	Transportation, shelter for pets
810	I am over 75, so can only anticipate there could be mobility issues.
878	transportation/medical
886	Medical
900	Mobility, medical
913	Possibly transportation, depends on circumstances
914	Transportation
935	Transportation
950	Medical. I am oxygen dependent
965	Medical
966	Transportation
975	transportation, medical, stairs
978	Transportation
1042	Medical
1061	Medical
1129	help with my three dogs
1132	Unsure
1281	Lifting weights
1312	Medication
1353	temporary housing
1374	Wheelchair/assuring path to her car is clear
1389	Transportation and medical
1391	Can't think of anything offhand.
1437	Medical supplies
1451	Mobility issue is possible
1482	Medical for mother in law, she is on oxygen
1504	Medical
1519	Shuttle service
1547	CPAP
1584	Need to find a place for my dog.
1588	Transportation and money
1618	Pets

Demographics

Question 26: What type of structure do you live in?



26. What type of structure do you live in?

Value	Percent	Responses
Detached single family home	80.8%	882
Duplex, triplex, quadruple home	5.3%	58
Multi-family building – 2 stories or more (apartment/condo)	11.5%	126
Mobile home	0.3%	3
Manufactured home	0.5%	6
Some other type of structure	0.2%	2
Not Applicable	0.2%	2

Multi-family building – 2 stories or more (apartment/condo)	11.5%	126
Mobile home	0.3%	3
Manufactured home	0.5%	6
Some other type of structure	0.2%	2
Not Applicable	0.2%	2
Other (please specify)	1.1%	12
	Total: 1,091	

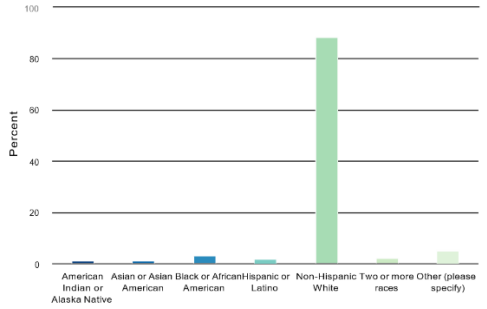
Question 27: How many persons, including yourself, are currently living in your household?

27. How many persons, including yourself, are currently living in your household?

	1	2	3	4	5	6	7	8	9	10 or more	Responses
Under age 5 Count	65	40	4	0	1	0	0	0	1	0	111
Row %	58.6%	36.0%	3.6%	0.0%	0.9%	0.0%	0.0%	0.0%	0.9%	0.0%	
Ages 6 - 10 Count	67	32	3	0	0	0	0	1	0	0	103
Row %	65.0%	31.1%	2.9%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	
Ages 11 - 19 Count	93	66	14	4	1	0	0	0	0	0	178
Row %	52.2%	37.1%	7.9%	2.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
Ages 20 - 44 Count	210	250	8	6	1	0	0	1	0	0	476
Row %	44.1%	52.5%	1.7%	1.3%	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	
Ages 45 - 64 Count	229	273	5	0	0	0	0	0	0	0	507
Row %	45.2%	53.8%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Ages 65-79 Count	172	155	0	0	1	0	0	0	0	1	329
Row %	52.3%	47.1%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.3%	
Ages 80+ Count	37	8	0	0	0	0	0	0	0	1	46
Row %	80.4%	17.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	
Total											1750
											100.0%

Question 28: Which of the following best describes your race/ethnicity?

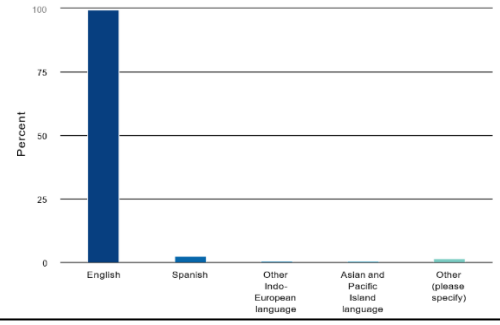
28. Which of the following best describes your race/ethnicity? Please select ALL that apply.



Value	Percent	Responses
American Indian or Alaska Native	1.3%	14
Asian or Asian American	1.3%	14
Black or African American	3.3%	35
Hispanic or Latino	1.9%	20
Non-Hispanic White	88.5%	940
Two or more races	2.4%	25
Other (please specify)	5.1%	54

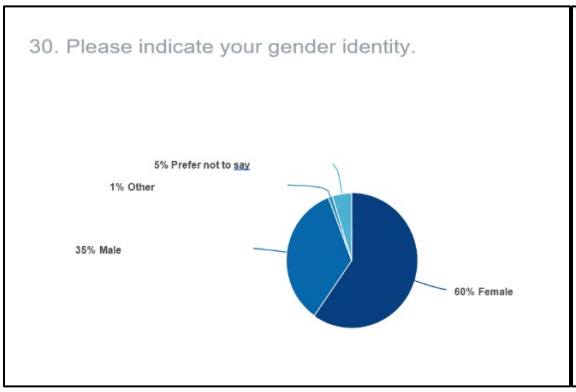
Question 29: Please indicate the language(s) spoken in your household.

29. Please indicate the language(s) spoken in your household. Please select ALL that apply.



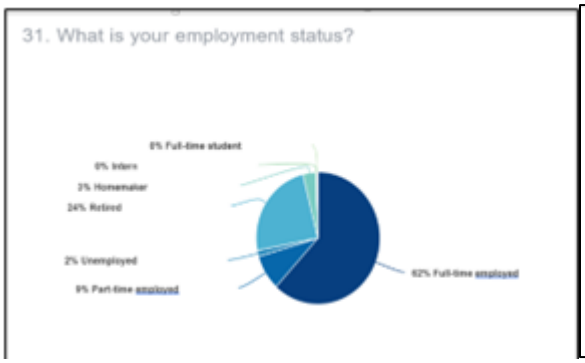
Value	Percent	Responses
English	99.6%	1,077
Spanish	2.6%	28
Other Indo-European language	0.8%	9
Asian and Pacific Island language	0.6%	6
Other (please specify)	1.7%	18

Question 30: Please indicate your gender identity.



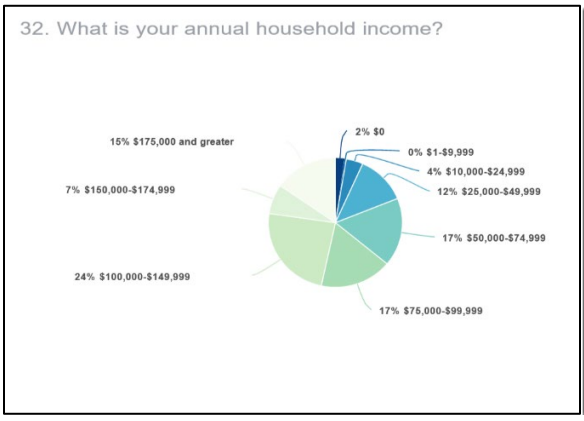
Value	Percent	Responses
Female	59.7%	645
Male	34.5%	373
Other	1.0%	11
Prefer not to say	4.8%	52
		Total: 1,081

Question 31: What is your employment status?



Value	Percent	Responses
Full-time employed	61.8%	666
Part-time employed	8.7%	94
Unemployed	1.5%	16
Retired	24.1%	260
Homemaker	3.4%	37
Intern	0.1%	1
Full-time student	0.4%	4
		Total: 1,078

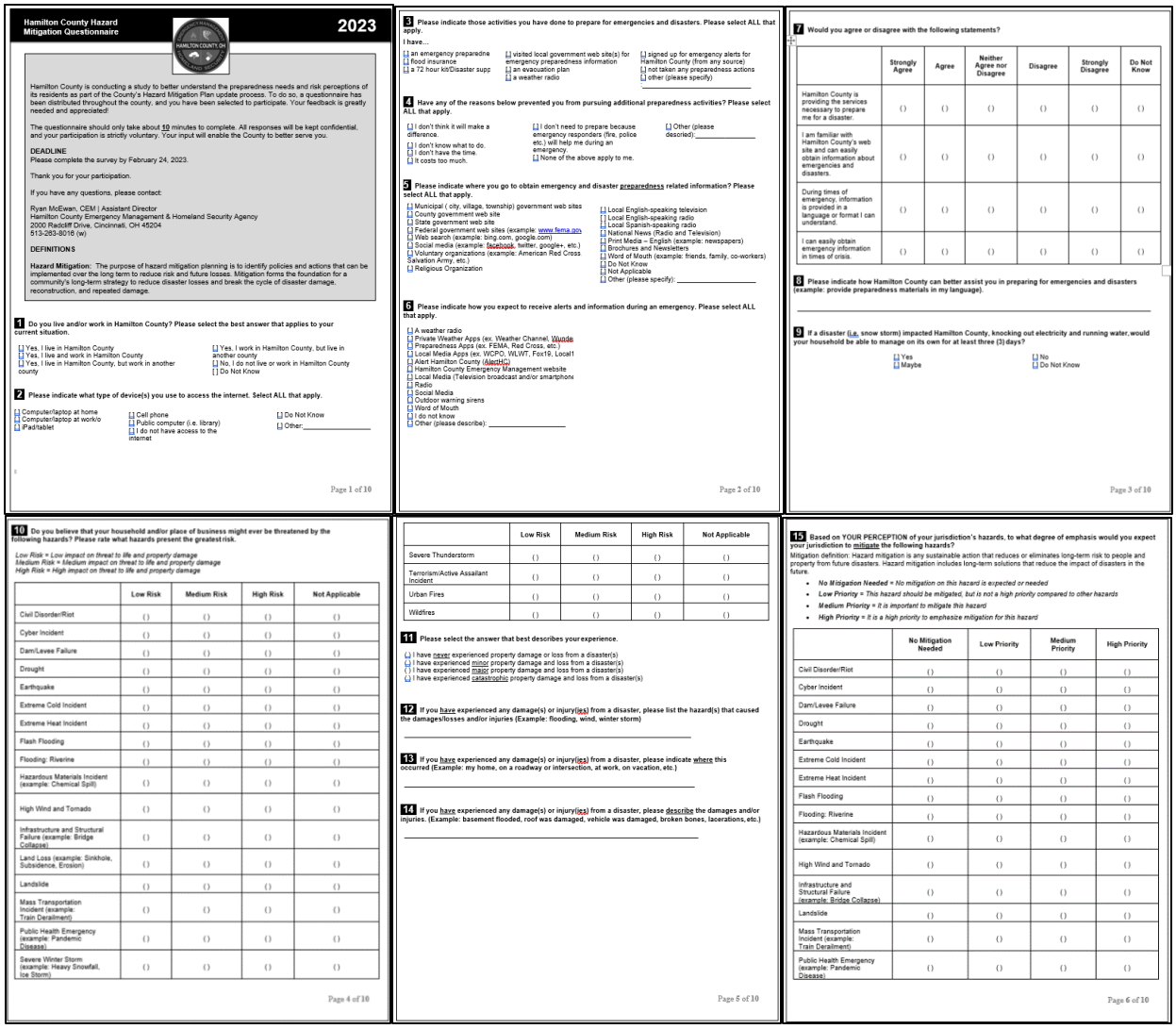
Question 32: What is your annual household income?



$50,000-$74,999	17.1%	166
$75,000-$99,999	17.4%	168
$100,000-$149,999	23.9%	231
$150,000-$174,999	7.4%	72
$175,000 and greater	15.3%	148
		Total: 968

Mitigation Survey Questionnaire Hard Copy

A hard copy of the questionnaire was also distributed to the public to ensure inclusion. Similar to the electronic survey, the hard copy questionnaire also used a combination of descriptive and exploratory questions to gain an understanding of general preparedness intentions and behavior, as well as, personal and demographic factors influencing decision making. The questionnaire also amounted to 32 questions of multiple choice and open-ended questions.



Hamilton County Hazard Mitigation Questionnaire 2023

Hamilton County is conducting a study to better understand the preparedness needs and risk perceptions of its residents as part of the County's Hazard Mitigation Plan update process. To do so, a questionnaire has been distributed throughout the county, and you have been selected to participate. Your feedback is greatly needed and appreciated!

The questionnaire should only take about 10 minutes to complete. All responses will be kept confidential, and your participation is strictly voluntary. Your input will enable the County to better serve you.

DEADLINE
Please complete the survey by February 24, 2023.

Thank you for your participation.

If you have any questions, please contact:

Ryan McEwan, CEM | Assistant Director
Hamilton County Emergency Management & Homeland Security Agency
2000 Radcliff Drive, Cincinnati, OH 45204
513-263-8016 (w)

DEFINITIONS

Hazard Mitigation: The purpose of hazard mitigation planning is to identify policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation forms the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

1 Do you live and/or work in Hamilton County? Please select the best answer that applies to your current situation.

- [ ] Yes, I live in Hamilton County
- [ ] Yes, I live and work in Hamilton County
- [ ] Yes, I live in Hamilton County, but work in another county
- [ ] Yes, I work in Hamilton County, but live in another county
- [ ] No, I do not live or work in Hamilton County
- [ ] Do Not Know

2 Please indicate what type of device(s) you use to access the internet. Select ALL that apply.

- [ ] Computer/laptop at home
- [ ] Computer/laptop at work/o
- [ ] iPad/tablet
- [ ] Cell phone
- [ ] Public computer (i.e. library)
- [ ] I do not have access to the internet
- [ ] Do Not Know
- [ ] Other:_____

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3 Please indicate those activities you have done to prepare for emergencies and disasters. Please select ALL that apply.

I have...

- [ ] an emergency preparedne
- [ ] flood insurance
- [ ] a 72 hour kit/Disaster supp
- [ ] visited local government web site(s) for emergency preparedness information
- [ ] an evacuation plan
- [ ] a weather radio
- [ ] signed up for emergency alerts for Hamilton County (from any source)
- [ ] not taken any preparedness actions
- [ ] other (please specify) _____

4 Have any of the reasons below prevented you from pursuing additional preparedness activities? Please select ALL that apply.

- [ ] I don't think it will make a difference.
- [ ] I don't know what to do.
- [ ] I don't have the time.
- [ ] It costs too much.
- [ ] I don't need to prepare because emergency responders (fire, police etc.) will help me during an emergency.
- [ ] None of the above apply to me.
- [ ] Other (please described):_____

5 Please indicate where you go to obtain emergency and disaster preparedness related information? Please select ALL that apply.

- [ ] Municipal (city, village, township) government web sites
- [ ] County government web site
- [ ] State government web site
- [ ] Federal government web sites (example: www.fema.gov
- [ ] Web search (example: bing.com, google.com)
- [ ] Social media (example: facebook, twitter, google+, etc.)
- [ ] Voluntary organizations (example: American Red Cross Salvation Army, etc.)
- [ ] Religious Organization
- [ ] Local English-speaking television
- [ ] Local English-speaking radio
- [ ] Local Spanish-speaking radio
- [ ] National News (Radio and Television)
- [ ] Print Media – English (example: newspapers)
- [ ] Brochures and Newsletters
- [ ] Word of Mouth (example: friends, family, co-workers)
- [ ] Do Not Know
- [ ] Not Applicable
- [ ] Other (please specify): _____

6 Please indicate how you expect to receive alerts and information during an emergency. Please select ALL that apply.

- [ ] A weather radio
- [ ] Private Weather Apps (ex. Weather Channel, Wunde
- [ ] Preparedness Apps (ex. FEMA, Red Cross, etc.)
- [ ] Local Media Apps (ex. WCPO, WLWT, Fox19, Local1
- [ ] Alert Hamilton County (AlertHC)
- [ ] Hamilton County Emergency Management website
- [ ] Local Media (Television broadcast and/or smartphon
- [ ] Radio
- [ ] Social Media
- [ ] Outdoor warning sirens
- [ ] Word of Mouth
- [ ] I do not know
- [ ] Other (please describe): _____

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7 Would you agree or disagree with the following statements?

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
Hamilton County is providing the services necessary to prepare me for a disaster.	()	()	()	()	()	()
I am familiar with Hamilton County's web site and can easily obtain information about emergencies and disasters.	()	()	()	()	()	()
During times of emergency, information is provided in a language or format I can understand.	()	()	()	()	()	()
I can easily obtain emergency information in times of crisis.	()	()	()	()	()	()

8 Please indicate how Hamilton County can better assist you in preparing for emergencies and disasters (example: provide preparedness materials in my language).

_____

9 If a disaster (i.e. snow storm) impacted Hamilton County, knocking out electricity and running water, would your household be able to manage on its own for at least three (3) days?

- [ ] Yes
- [ ] Maybe
- [ ] No
- [ ] Do Not Know

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10 Do you believe that your household and/or place of business might ever be threatened by the following hazards? Please rate what hazards present the greatest risk.

Low Risk = Low impact on threat to life and property damage
Medium Risk = Medium impact on threat to life and property damage
High Risk = High impact on threat to life and property damage

	Low Risk	Medium Risk	High Risk	Not Applicable
Civil Disorder/Riot	()	()	()	()
Cyber Incident	()	()	()	()
Dam/Levee Failure	()	()	()	()
Drought	()	()	()	()
Earthquake	()	()	()	()
Extreme Cold Incident	()	()	()	()
Extreme Heat Incident	()	()	()	()
Flash Flooding	()	()	()	()
Flooding: Riverine	()	()	()	()
Hazardous Materials Incident (example: Chemical Spill)	()	()	()	()
High Wind and Tornado	()	()	()	()
Infrastructure and Structural Failure (example: Bridge Collapse)	()	()	()	()
Land Loss (example: Sinkhole, Subsidence, Erosion)	()	()	()	()
Landslide	()	()	()	()
Mass Transportation Incident (example: Train Derailment)	()	()	()	()
Public Health Emergency (example: Pandemic Disease)	()	()	()	()
Severe Winter Storm (example: Heavy Snowfall, Ice Storm)	()	()	()	()

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	Low Risk	Medium Risk	High Risk	Not Applicable
Severe Thunderstorm	()	()	()	()
Terrorism/Active Assailant Incident	()	()	()	()
Urban Fires	()	()	()	()
Wildfires	()	()	()	()

11 Please select the answer that best describes your experience.

- [ ] I have never experienced property damage or loss from a disaster(s)
- [ ] I have experienced minor property damage and loss from a disaster(s)
- [ ] I have experienced major property damage and loss from a disaster(s)
- [ ] I have experienced catastrophic property damage and loss from a disaster(s)

12 If you have experienced any damage(s) or injury(ies) from a disaster, please list the hazard(s) that caused the damages/losses and/or injuries (Example: flooding, wind, winter storm)

_____

13 If you have experienced any damage(s) or injury(ies) from a disaster, please indicate where this occurred (Example: my home, on a roadway or intersection, at work, on vacation, etc.)

_____

14 If you have experienced any damage(s) or injury(ies) from a disaster, please describe the damages and/or injuries. (Example: basement flooded, roof was damaged, vehicle was damaged, broken bones, lacerations, etc.)

_____

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15 Based on YOUR PERCEPTION of your jurisdiction's hazards, to what degree of emphasis would you expect your jurisdiction to mitigate the following hazards?

Mitigation definition: Hazard mitigation is any sustainable action that reduces or eliminates long-term risk to people and property from future disasters. Hazard mitigation includes long-term solutions that reduce the impact of disasters in the future.

- *No Mitigation Needed = No mitigation on this hazard is expected or needed*
- *Low Priority = This hazard should be mitigated, but is not a high priority compared to other hazards*
- *Medium Priority = It is important to mitigate this hazard*
- *High Priority = It is a high priority to emphasize mitigation for this hazard*

	No Mitigation Needed	Low Priority	Medium Priority	High Priority
Civil Disorder/Riot	()	()	()	()
Cyber Incident	()	()	()	()
Dam/Levee Failure	()	()	()	()
Drought	()	()	()	()
Earthquake	()	()	()	()
Extreme Cold Incident	()	()	()	()
Extreme Heat Incident	()	()	()	()
Flash Flooding	()	()	()	()
Flooding: Riverine	()	()	()	()
Hazardous Materials Incident (example: Chemical Spill)	()	()	()	()
High Wind and Tornado	()	()	()	()
Infrastructure and Structural Failure (example: Bridge Collapse)	()	()	()	()
Landslide	()	()	()	()
Mass Transportation Incident (example: Train Derailment)	()	()	()	()
Public Health Emergency (example: Pandemic Disease)	()	()	()	()

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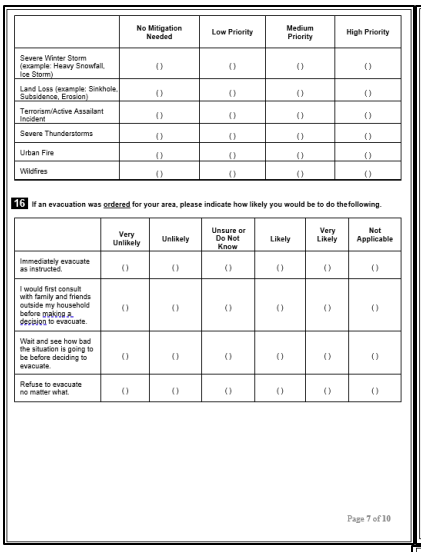

	No Mitigation Needed	Low Priority	Medium Priority	High Priority
Severe Winter Storm (example: Heavy Snowfall, Ice Storm)	( )	( )	( )	( )
Land Loss (example: Sinkhole, Subsidence, Erosion)	( )	( )	( )	( )
Terrorism/Active Assailant Incident	( )	( )	( )	( )
Severe Thunderstorms	( )	( )	( )	( )
Urban Fire	( )	( )	( )	( )
Wildfires	( )	( )	( )	( )

16 **If an evacuation was ordered for your area, please indicate how likely you would be to do thefollowing.**

	Very Unlikely	Unlikely	Unsure or Do Not Know	Likely	Very Likely	Not Applicable
Immediately evacuate as instructed.	( )	( )	( )	( )	( )	( )
I would first consult with family and friends outside my household before making a decision to evacuate.	( )	( )	( )	( )	( )	( )
Wait and see how bad the situation is going to be before deciding to evacuate.	( )	( )	( )	( )	( )	( )
Refuse to evacuate no matter what.	( )	( )	( )	( )	( )	( )

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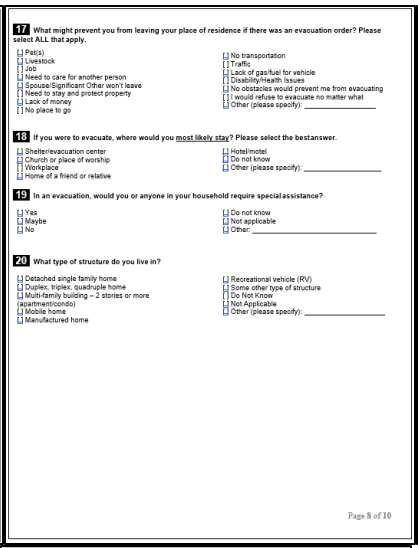

17 **What might prevent you from leaving your place of residence if there was an evacuation order? Please select ALL that apply.**

- [ ] Pet(s)
- [ ] Livestock
- [ ] Job
- [ ] Need to care for another person
- [ ] Spouse/Significant Other won't leave
- [ ] Need to stay and protect property
- [ ] Lack of money
- [ ] No place to go
- [ ] No transportation
- [ ] Traffic
- [ ] Lack of gas/fuel for vehicle
- [ ] Disability/Health Issues
- [ ] No obstacles would prevent me from evacuating
- [ ] I would refuse to evacuate no matter what
- [ ] Other (please specify): _____

18 **If you were to evacuate, where would you most likely stay? Please select the bestanswer.**

- [ ] Shelter/evacuation center
- [ ] Church or place of worship
- [ ] Workplace
- [ ] Home of a friend or relative
- [ ] Hotel/motel
- [ ] Do not know
- [ ] Other (please specify): _____

19 **In an evacuation, would you or anyone in your household require special assistance?**

- [ ] Yes
- [ ] Maybe
- [ ] No
- [ ] Do not know
- [ ] Not applicable
- [ ] Other: _____

20 **What type of structure do you live in?**

- [ ] Detached single family home
- [ ] Duplex, triplex, quadruple home
- [ ] Multi-family building – 2 stories or more (apartment/condo)
- [ ] Mobile home
- [ ] Manufactured home
- [ ] Recreational vehicle (RV)
- [ ] Some other type of structure
- [ ] Do Not Know
- [ ] Not Applicable
- [ ] Other (please specify): _____

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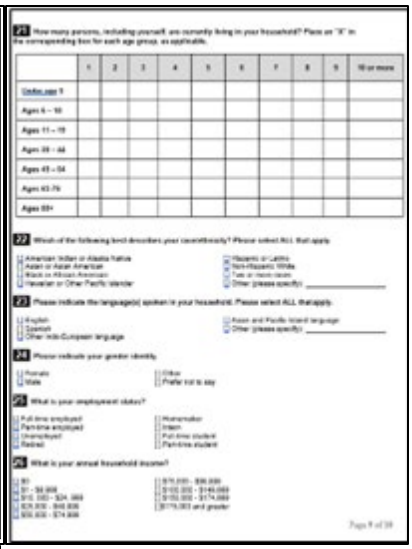

21 How many persons, including yourself, are currently living in your household? Place an "X" in the corresponding box for each age group, as applicable.

	1	2	3	4	5	6	7	8	9	10 or more
Under age 1										
Ages 1 – 10										
Ages 11 – 17										
Ages 18 – 44										
Ages 45 – 64										
Ages 65-74										
Ages 85+										

22 Which of the following best describes your race/ethnicity? Please select ALL that apply.

- [ ] American Indian or Alaska Native
- [ ] Asian or Asian American
- [ ] Black or African American
- [ ] Hawaiian or Other Pacific Islander
- [ ] Hispanic or Latino
- [ ] Non-Hispanic White
- [ ] Two or more races
- [ ] Other (please specify): _____

23 Please indicate the language(s) spoken in your household. Please select ALL thatapply.

- [ ] English
- [ ] Spanish
- [ ] Other Indo-European language
- [ ] Asian and Pacific Island language
- [ ] Other (please specify): _____

24 Please indicate your gender identity.

- [ ] Female
- [ ] Male
- [ ] Other
- [ ] Prefer not to say

25 What is your employment status?

- [ ] Full-time employed
- [ ] Part-time employed
- [ ] Unemployed
- [ ] Retired
- [ ] Homemaker
- [ ] Intern
- [ ] Full-time student
- [ ] Part-time student

26 What is your annual household income?

- [ ] $0
- [ ] $1 - $9,999
- [ ] $10,000 - $24,999
- [ ] $25,000 - $49,999
- [ ] $50,000 - $74,999
- [ ] $75,000 - $99,999
- [ ] $100,000 - $149,999
- [ ] $150,000 - $174,999
- [ ] $175,000 and greater

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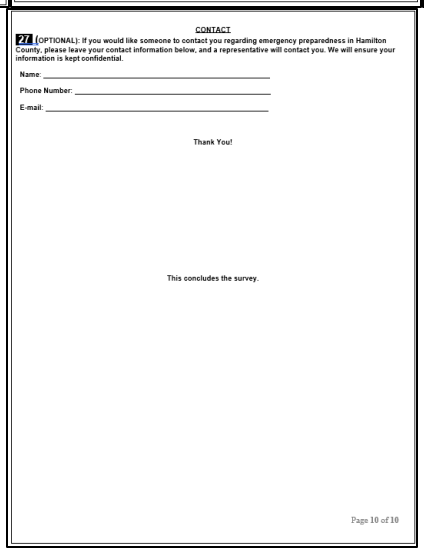

CONTACT

27 **(OPTIONAL): If you would like someone to contact you regarding emergency preparedness in Hamilton County, please leave your contact information below, and a representative will contact you. We will ensure your information is kept confidential.**

Name: _____

Phone Number: _____

E-mail: _____

Thank You!

This concludes the survey.

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Appendix F - Participating Jurisdictions Plan Adoption

Contents

Template Resolution 2

Template Resolution

SAMPLE Resolution No. _____

ADOPTION OF THE HAMILTON COUNTY MULTI-HAZARD MITIGATION PLAN

WHEREAS **<INSERT COMMUNITY NAME>**, Ohio is vulnerable to an array of natural, technological, and human-caused hazards that have the potential to cause loss of life and damages to public and private property; and

WHEREAS, the Hamilton County Emergency Management & Homeland Security Agency and the Hazard Mitigation Steering Committee, comprised of representatives from the County, municipalities, and stakeholder organizations, have prepared a recommended Multi-Hazard Mitigation Plan that reviews the options to protect people and property and reduce damage from these hazards; and

WHEREAS **<INSERT COMMUNITY NAME>** has participated in the planning process for development of this Plan, providing information specific to local and county-wide hazard priorities, encouraging public participation, identifying desired hazard mitigation strategies, and reviewing the draft Plan; and

WHEREAS, the Hamilton County Emergency Management & Homeland Security Agency, with the Hazard Mitigation Steering Committee, has developed the HAMILTON COUNTY MULTI-HAZARD MITIGATION PLAN (the "Plan") as an official document of the County pursuant to the Disaster Mitigation Act of 2000 (PL-106-390) and associated regulations (44 CFR 210.6); and

WHEREAS, the Plan has been widely circulated for review by the County's residents, municipal officials, and regional, state, and federal partner agencies and has been revised to reflect their concerns; and

WHEREAS, the Ohio Emergency Management Agency and the Federal Emergency Management Agency have reviewed the Plan for legislative compliance and approved the plan pending the completion of local adoption procedures.

NOW THEREFORE BE IT RESOLVED by the <**INSERT COMMUNITY NAME AND GOVERNING BODY HERE>** that:

1. The Hamilton County Multi-Hazard Mitigation Plan is hereby adopted as an official plan of **<INSERT COMMUNITY NAME>**.
2. The **<INSERT NAME OF POSITION OR ORGANIZATION/DEPARTMENT>** is charged with supervising the implementation of the Plan's recommendations, as they pertain to **<INSERT COMMUNITY NAME>** and within the funding limitations as provided by the <**INSERT COMMUNITY GOVERNING BODY HERE>** or other sources.

Passed by the <**INSERT COMMUNITY NAME AND GOVERNING BODY HERE>** on **<INSERT DATE>**.