MONTGOMERY COUNTY MULTI-JURISDICTION NATURAL HAZARD MITIGATION PLAN

5-YEAR UPDATE 2025

Prepared for Montgomery County

Prepared by Tighe & Bond Engineering and Landscape Architecture, P.C.

FEMA

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ACKNOWLEDGEMENTS AND CREDITS

Acknowledgements and Credits

This Hazard Mitigation Plan (HMP) 5-year update was prepared for Montgomery County under the direction of the New York State Division of Homeland Security & Emergency Services (NYS DHSES) and the Federal Emergency Management Agency (FEMA). The HMP update was funded by FEMA through a Hazard Mitigation Planning Grant.

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Executive Summary

Hazard mitigation planning is any sustained action taken to reduce or eliminate the long-term risk and effects that can result from specific hazards. In the communities of the central region of New York, hazard mitigation planning tends to focus most on severe winter weather and flooding, the natural hazards to impact these communities. The Federal Disaster Mitigation Act (DMA) of 2000 requires all municipalities that wish to be eligible to receive Federal Emergency Management Agency (FEMA) funding for hazard mitigation grants, to adopt a local multi-jurisdiction natural hazard mitigation plan and update this plan in five-year intervals. FEMA defines a Hazard Mitigation Plan (HMP) as the documentation of a state or local government evaluation of natural hazards and the strategies to mitigate such hazards.

The 5-year update for the HMP was prepared with funding from the New York State Division of Homeland Security & Emergency Services (NYS DHSES) through the Federal Emergency Management Agency. The multi-jurisdictional natural hazards Mitigation Plan for Montgomery County was produced under a FEMA Hazard Mitigation Grant and is designed to meet the requirements of the DMA, following guidance provided in FEMA's Local Mitigation Planning Handbook (March 2013)[1] and FEMA's Local Mitigation Planning Policy Guide (April 19, 2023)[2].

The planning process included updating data, maps, tables, and mitigation goals and strategies from the 2016 Hazard Mitigation Plan for the required 5-year update. The update incorporates information from the 2019 New York State Hazard Mitigation Plan (NYS HMP) to address all-natural hazard risk and vulnerability assessments including future impacts due to climate change. Montgomery County recognizes climate change as a factor that will affect weather patterns, flooding extent, habitat, and species distribution, and impact the ability to recover from disaster and risk to the citizens.

Several notable changes to the 5-year update include:

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- Revised goals and objectives for Hazard Mitigation Planning
- Expansion of natural hazard risk to include climate change
- Addition of environmental and societal community assets vulnerable to identified hazards
- Expanded public participation through involvement of Environmental Justice Communities and Stakeholders
- Clearly defined and systematically prioritized mitigation strategies
- A reduction from 29 mitigation actions to 21 actions for the next 5-year planning cycle

A resiliency vision for Montgomery County includes empowering the residents, neighboring communities, and City/Village/Town Leaders to make near, mid-, and long-term changes that will reduce future climate change impacts, protect its vital community assets, and adapt to changes already

[1] FEMA (2013), "Local Mitigation Planning Handbook", https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf

[2] FEMA (2023), "Local Mitigation Planning Policy Guide", https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf.

EXECUTIVE SUMMARY

occurring. The mitigation actions included in the 2024 Multi-Jurisdiction Natural Hazard Mitigation Plan complement and support this resiliency vision.

The Montgomery County Multi-Jurisdictional Natural Hazard Mitigation Plan Update has been organized into a two-volume plan to facilitate its use as a resource. The plan provides a detailed review and analysis of hazards of concern, resources, and demographics of Montgomery County and participating jurisdictions.

Volume I is intended for use as a regional resource for on-going mitigation analysis. Volume II consists of an annex dedicated to each participating jurisdiction. Each annex summarizes each jurisdiction's legal, regulatory, and fiscal capabilities; vulnerabilities to natural hazards; status of past mitigation actions; and provides an individualized mitigation strategy. The annexes are intended to provide an expedient resource for each jurisdiction to assist in implementation of mitigation projects and future grant opportunities.

The Plan Adoption Certificates are provided on the following pages.

Participating Jurisdictions:

Participating Jurisdictions		
City of Amsterdam	Town of Mohawk	Village of Fort Plain
Town of Amsterdam	Town of Palatine	Village of Fultonville
Town of Canajoharie	Town of Root	Village of Hagaman
Town of Charleston	Town of St. Johnsville	Village of Nelliston
Town of Florida	Village of Ames	Village of Palatine Bridge
Town of Glen	Village of Canajoharie	Village of St. Johnsville
Town of Minden	Village of Fonda	

The 2016 HMP included the Village of Fort Johnson, which was incorporated into the Town of Amsterdam in 2023.

Digital Documents:

https://www.montgomerycountyny.gov/web/sites/departments/hazardmitigation/default.asp

1 Introduction

Federal Disaster Mitigation Act Planning Requirements

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In response to the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), Montgomery County and the towns, cities, and villages located therein, have developed this multi-jurisdictional Natural Hazard Mitigation Plan (HMP), which is an update to the 2016 Montgomery County Hazard Mitigation Plan. DMA 2000 amends the Stafford Act and is designed to improve planning for, response to, and recovery from, disasters by requiring State and local entities to implement pre-disaster mitigation planning and develop HMPs. The FEMA has issued guidelines for HMPs. The NYS DHSES also supports plan development for jurisdictions in New York State through guidance, resources, and plan reviews.

The DMA 2000 requires that each local jurisdiction identify potential natural hazards to the health, safety and wellbeing of its residents and identify and prioritize actions that can be taken by the community to mitigate those hazards—before disaster strikes. For communities to remain eligible for hazard mitigation assistance from the federal government, they must first prepare, and then maintain and update an HMP (this plan). This planning requirement does not affect federally authorized disaster assistance funding and is exempt from this requirement. It is the intention of this planning process that municipalities shall incorporate findings and recommendations of this plan into future local planning efforts and into overall execution of local land-use planning process (e.g., site plan review, permitting, and code enforcement).

The multi-jurisdictional Natural Hazards Mitigation Plan for Montgomery County was produced under a FEMA Hazard Mitigation Grant and is designed to meet the requirements of the DMA, following guidance provided in FEMA's Local Mitigation Planning Handbook (March 2013)[3], FEMA's Local Mitigation Planning Policy Guide (April 19, 2023)[4]., and NYS DHSES 2022 Hazard Mitigation Planning Standards[5]. Where text in the Hazard Mitigation Plan meets an element identified in the Review Guide, it is called out in a blue box in the margins.

What is Hazard Mitigation?

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to human life and property posed by hazards (44 CFR §201.2). The purpose of hazard mitigation is to reduce loss from current and future natural hazards. Storms and other natural disasters such as floods, earthquakes, and hurricanes can cause loss of life, damage to buildings and infrastructure, and negatively affect a community's economic, social, and environmental well-being.

[3] FEMA (2013), "Local Mitigation Planning Handbook", https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf

[4] FEMA (2023), "Local Mitigation Planning Policy Guide", https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf.

[5] https://www.dhses.ny.gov/system/files/documents/2023/11/2022-nys-mitigation-planning-standards-final.pdf

INTRODUCTION

Montgomery County has developed the HMP to permanently reduce or alleviate the loss of life, injuries, and property damage resulting from natural hazards through the adoption of long-term strategies. HMPs attempt to provide coordinated and cost-effective guidance for hazard preparedness that considers future growth and development trends. These long-term strategies integrate mitigation strategies that address not only municipal infrastructure but also societal, economic, and environmental assets of the County and participating local jurisdictions through planning, policy changes, programs, projects, educational outreach, and other activities. The desired outcome of implementing the HMP will be creating a more resilient community that is better prepared prior to a natural disaster and can recover more quickly after one occurs.

This Plan's approval makes the County and the participating jurisdictions eligible for federal disaster assistance programs, specifically, FEMA's Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure for Communities Program (BRIC), Flood Mitigation Assistance Program (FMA), Respective Flood Claims Program, and Severely Repetitive Flood Loss Program.

The complete FEMA Plan Review Check list for the plan update is provided in Appendix E.

1.1 FEDERAL/STATE DISASTER DECLARATIONS IN MONTGOMERY COUNTY

Table 1.2 shows that in the past 50 years, there were 21 hazard incidents that triggered federal or state disaster declarations specifically including Montgomery County. Most events involved winter storms, severe storms, or flooding. More than twice this number were declared involving other counties in New York State.

Table 1-2. Federal and State Disaster Declarations in Montgomery County (1971-2022) [6]

Disaster #	Declaration Dates	Unofficial Storm Name	Impact
EM-3565	August 2021	Hurricane Henri	High Winds, Flooding
DR-4480	March 2020	Covid-19	Pandemic
DR-4472	December 2019	2019 Major Winter Storm	Severe Winter Storms, Snow for 40 hours, up to 2 feet recorded in Montgomery County
DR-4322	July 2017	March 2017 Nor'easter, Pi Day Blizzard	Severe Winter Storms, Snowstorm
DR-4129	July 2013	Severe summer rainstorm of 2013	Severe Storms, Flooding
EM-3351	October 2012	Hurricane Sandy	Flooding
DR-4031	September 2011	Remnants of Tropical Storm Lee	Flooding
DR-4020	August 2011	Hurricane Irene	Flooding
DR-1692	April 2007	April Nor'easter	Nor'easter/Severe Storms, Flooding
DR-1670	December 2006	November Storm	Severe Storms, Flooding

[6] https://www.fema.gov/disaster/declarations

Disaster #	Declaration Dates	Unofficial Storm Name	Impact
DR-1650	July 2006	Mohawk River Flood	Severe Storms, Flooding
DR-1589	April 2005		Severe Storms, Flooding
DR-1534	August 2004		Severe Storms, Flooding
EM-3186	August 2003	Power Outage	State-wide Power Outages
DR-1486	August 2003		Severe Storms, Tornadoes, Flooding
EM-3173	December 2002	Christmas Nor'easter	Snowstorm
EM-3155	October 2000	Virus Threat	Threat of West Nile Virus
DR-1335	July 2000		Severe Storms, Flooding
DR-1148	December 1996		Nor-easter, Severe Storms, Flooding
DR-1095	January 1996	The Blizzard of '96	Severe Storms, Flooding
EM-3107	March 1993	The Blizzard of '93	Statewide Blizzard
DR-792	May 1987		Flooding

1.2 Available Documents and Technical Resources

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The Montgomery County HMP Update strives to use the best available technical information, plans, studies, and reports throughout the planning process to support hazard profiling; risk and vulnerability assessment; review and evaluation of mitigation capabilities; and the identification, development, and prioritization of County and local mitigation strategies. The asset and inventory data used for the risk and vulnerability assessments is presented in the County Profile (Section 3).

Plans, reports, and other technical information were identified and provided directly by the County, participating jurisdictions, and numerous stakeholders involved in the planning effort, as well as through independent research by the planning consultant. The County and participating jurisdictions were tasked with updating the inventory of their Planning and Regulatory capabilities (see Capability Assessment in Section 7 and each jurisdictional annex in Section 11) and providing relevant planning and regulatory documents as applicable. Relevant documents, including plans, reports, and ordinances were reviewed to identify:

- Existing municipal capabilities
- Needs and opportunities to develop or enhance capabilities, which may be identified within the County or local mitigation strategies
- Mitigation-related goals or objectives, considered in the review and update of the overall Goals [and Objectives] (see Section 8)
- Proposed, in-progress, or potential mitigation projects, actions, and initiatives to be incorporated into the updated County and local mitigation strategies

See Appendix A for a list of all reports, plans, studies, and technical information that was used in the development of the HMP 5-year update. Information that was used to develop key findings is cited directly in the document.

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1.3 INTEGRATION WITH EXISTING PLANNING MECHANISMS AND PROGRAMS

Effective mitigation is achieved when hazard awareness and risk management approaches and strategies become an integral part of public activities and decision-making. Within the county there are many existing plans and programs that support hazard risk management, and thus it is critical that this hazard mitigation plan integrate and coordinate with, and complement, those existing plans and programs.

The "Capability Assessment" Section 7 provides a summary and description of the existing plans, programs, and regulatory mechanisms at all levels of government (federal, state, county, and local) that support hazard mitigation within the county. Within each jurisdictional annex in Section 11, the County and each participating jurisdiction have identified how they have integrated hazard risk management into their existing planning, regulatory and operational/administrative framework ("integration capabilities") and how they intend to promote this integration ("integration actions"). A further summary of these continued efforts to develop and promote a comprehensive and holistic approach to hazard risk management and mitigation is presented in Section 8 (Mitigation Strategy).

2 The Planning Process

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To develop this HMP report, Montgomery County followed the planning process framework consistent with FEMA's hazard mitigation planning guidance and NYS DHSES Local HMP requirements, while focusing on local needs and priorities, and maintaining a regional perspective on natural hazard events. The combined process included the following main steps:

1. **Identifying and Mapping the Hazards** – Federal, state, and locally developed data was used to identify hazards that impact the County's jurisdictions. A profile of each hazard was developed including previous occurrences, magnitude and severity of the hazard, and probability for future occurrences. Maps were created to show areas affected by the identified natural hazards and were used as the basis for developing the risk assessment. The **Natural Hazards Risk Assessment** is included in Section 4.
2. **Assessing the Critical Community Assets and Potential Damages** – Critical community assets including municipal facilities, infrastructure, vulnerable populations, economic, and natural resources were located and compared with hazard data to identify those that may be vulnerable to hazards. Montgomery County developed estimates of the potential impacts of certain hazard events on the community including flooding, earthquakes, and hurricane winds. Further discussion is included in the **Asset Inventory** in Section 5 and the **Vulnerability Assessment** in Section 6.
3. **Reviewing Existing Mitigation** – Montgomery County has implemented many mitigation strategies including floodplain zoning, wetland protection, and other measures as well as enforcing the State Building Code. All current municipal mitigation measures were documented and discussed as part of the **Capabilities Assessment** in Section 7.
4. **Developing Mitigation Strategies** – The County worked with a designated planning group, local stakeholders, and their consultants to identify new mitigation measures, utilizing information gathered from the hazard identification, vulnerability assessment, and exiting mitigation measures to determine where additional work is needed to reduce potential future damages from hazard events. The **Mitigation Strategy** discussed in Section 8 includes goals and objectives, mitigation actions, and an implementation strategy.
5. **Implementing and Updating the Plan** – Implementation is the final and most important part of any planning process. Hazard Mitigation Plans must also be updated on a 5-year basis making preparation for the next Plan update an important on-going activity. A schedule for implementation, **Plan Evaluation and Maintenance** is included in Section 9.
6. **Plan Approval and Adoption** – Once a final draft of the HMP update is complete it is sent to NYS DHSES for state level review and pending completion of any revisions, it is then sent to FEMA for approval. Once FEMA approves the Plan, FEMA issues a conditional approval pending adoption of the Plan by Montgomery County. The **Plan Approval Process** is included in Section 10.

The planning process included organization of the Hazard Mitigation Core Team, hiring a vendor to assist with the plan production, obtaining commitment for jurisdictions to participate in the Hazard Mitigation Plan and community representation as part of the Hazard Mitigation Planning Committee. Public participation was an important component of the process, providing critical information to stakeholders about the local occurrence of hazards, a discussion of regional issues, and to build support for hazard mitigation activities.

PLANNING PROCESS

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2.1 MULTI-JURISDICTIONAL PARTICIPATION

Montgomery County and the 20 participating jurisdictions intend to implement this HMP with full coordination and participation of County and local departments, organizations, and groups, as well as by coordinating with relevant state and federal entities. Coordination helps to ensure that stakeholders have established communication channels and relationships necessary to support mitigation planning and mitigation actions included in Section 8 and in the Jurisdictional Annexes in Section 11.

In addition to Montgomery County, the following jurisdictions within the County have participated in the planning process (Table 2-1).

Table 2-1. Participating Jurisdictions in Montgomery County

Participating Jurisdictions		
City of Amsterdam	Town of Mohawk	Village of Fort Plain
Town of Amsterdam	Town of Palatine	Village of Fultonville
Town of Canajoharie	Town of Root	Village of Hagaman
Town of Charleston	Town of St. Johnsville	Village of Nelliston
Town of Florida	Village of Ames	Village of Palatine Bridge
Town of Glen	Village of Canajoharie	Village of St. Johnsville
Town of Minden	Village of Fonda	

2.2 THE COUNTY PLANNING TEAM

The Montgomery County Natural Hazard Mitigation Planning Team (**HMP Core Team)**, was created to provide guidance and leadership, oversee the planning process, and act as the point of contact for all partners and the various interest groups in the planning area. Core Planning Team members included the Code Enforcement Officer Senior Planner, and Emergency Management Director, all with authority to regulate development and who share a keen interest in the Hazard Mitigation Planning process.

The Montgomery County HMP Core Planning Team is listed in Table 2-2.

Table 2-2. Montgomery County HMP Core Team

Name and Title	Department
Kenneth Rose, Project Lead, Director	Montgomery County Business Development Center
Alexander Kuttesch, Senior Planner (GIS)	Montgomery County Business Development Center
Stephanie Battisti, Economic Development Specialist	Montgomery County Business Development Center
Jeff Kaczor, Emergency Management Deputy Director	Montgomery County Emergency Management Office

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2.3 THE PARTICIPATING JURISDICTIONS PLANNING COMMITTEE

Individuals were assigned as the primary and secondary contacts from the participating jurisdictions. They

provided representation at meetings and coordinated local outreach and assisted with the development of the individual community plans. These individuals from participating jurisdictions make up the larger HMP Planning Committee. Table 2-3 shows the members of the Montgomery HMP Planning Committee.

Table 2-3. Montgomery County Hazard Mitigation Plan Planning Committee Members

Organization	Name	Title	Primary POC	Secondary POC
Montgomery County (Core Team Members)	Kenneth Rose	Code Enforcement Officer	X	
	Alex Kuttesch	Senior Planner/GIS		X
	Jeff Kaczor	Emergency Management Deputy Director		
	Stephanie Battisti	Economic Development Specialist		
Ames (Village)	Mike McMahon	Mayor	X	
City of Amsterdam	Mike Clark	City Engineer	X	
	Anthony Agresta	Fire Chief		X
Amsterdam (Town)	Thomas DiMezza	Town Supervisor	X	
	Bart Tessiero	Highway Superintendent		X
Canajoharie (Town)	Benny Goldstein	Town Supervisor	X	
	Erica Hayes	Town Clerk		X
Canajoharie (Village)	Peter Briele	Superintendent of Highway	X	
	Sandra Ward	Deputy Clerk		X
Charleston (Town)	Ellen McHale	Board Member	X	
	David Weiner	Chairman, Planning Board		X
Florida (Town)	Steve Anderson	Highway Superintendent	X	
	Eric Mead	Supervisor		X
Fonda (Village)	Bill Peeler	Mayor	X	
	Scott Sprague	Trustee		X
Ft. Plain (Village)	Patrick Hanifin	Mayor	X	
	Rodney Strait	Deputy Mayor		X
Fultonville (Village)	Tim Morford	Deputy Mayor	X	
	Vickie Romano	Village Clerk		X
Glen (Town)	Tim Reilly	Supervisor		
	Russ Kelly	Town of Glen Council		
Hagaman (Village)	Robin Ricci	Village Trustee	X	
Minden (Town)	Joseph Hanifin	Superintendent of Highway	X	
	Cheryl Reese	Supervisor		X
Mohawk (Town)	Bill Holvig	Highway Superintendent	X	
	Janet DePalma	Deputy Supervisor		X
Nelliston (Village)	Edward Watt	Village Clerk	X	
Palatine (Town)	William MacLauchlin	Supervisor	X	
Palatine (Village)	James Post	Mayor	X	
	Barbara Millington	Village Clerk		X
Root (Town)	Gary Kamp	Supervisor	X	
	LuEmma Quackenbush	Councilperson		X
St. Johnsville (Town)	Phoebe Sitterly	Town Supervisor	X	
St. Johnsville (Village)	Jayna Cool	Village Clerk	X	
	Marissa Nellis	Deputy Clerk		X
	Dawn White	Mayor		X

The division of duties between the Montgomery County Core Team, the consultant and the Participating Planning Committee is illustrated in **Figure 2-1**.

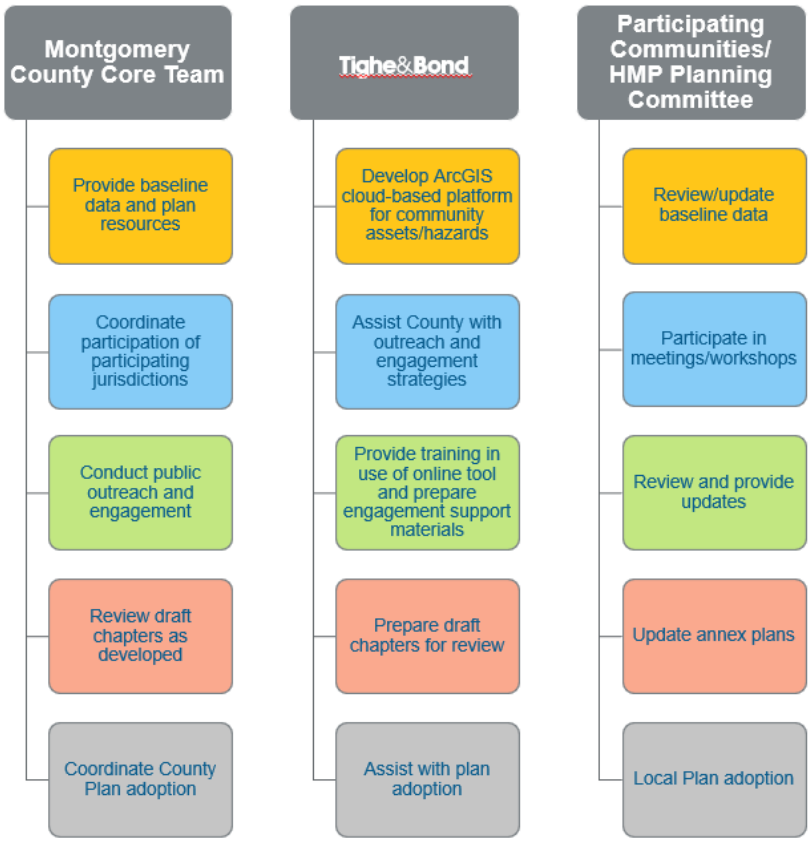

Figure 2-1 Roles and Responsibilities of HMP Core Team, Consultant and Planning Committee

2.4 PUBLIC OUTREACH

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Members of the Committee (individually and as a whole), as well as key stakeholders, convened and/or communicated on an as-needed basis to share information and participate in workshops to identify hazards; assess risks; review existing inventories of and identify new critical facilities; assist in updating and developing new mitigation goals, objectives and actions; and provide continuity through the plan update process to ensure that natural hazards vulnerability information and appropriate mitigation strategies were incorporated into the Plan Update. Each member of the Planning Committee had the opportunity to review the Plan Update and supported interaction with other stakeholders and assisted with public involvement efforts.

Montgomery County completed the required public outreach for the HMP public meetings, see Table 2-5 for the documented outreach events. Outreach efforts included Core Planning Team meetings, Planning Committee meetings, stakeholder public meetings held during the development of the HMP, and multi-media outreach including surveys, printed material and public notices on the County's website and social media. A

summary of the stakeholder participation is provided in Table 2-4 and more details on the public engagement process in section 2.5.

2.4.1 Stakeholder Outreach

Stakeholder outreach was part of the effort to provide regional, county, and local representation in HMP planning process and "an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval" (44 CFR §201.6). Outreach involvement of multiple agencies, departments, organizations, non-profits, districts, authorities, and other entities that have a stake in managing hazard risk and mitigation, are commonly referred to as "stakeholders." To that end, a comprehensive list of stakeholders was developed with the support of the Core Team and Planning Committee. Table 2-5 includes all the various stakeholders that were invited to participate in the development of this plan, including how they were contacted for outreach, along with a summary of how these stakeholders participated and contributed to the plan.

Table 2-4. Summary of Stakeholder Participation

Stakeholder	Outreach Method	Role
FEMA Region II		Provided updated planning guidance; provided detailed NFIP data for planning area; attended meetings; conducted plan review
NYS DHSES: Headquarters and Region I		Administered planning grant and facilitated FEMA review; attended meetings and workshops; provided review of Draft and Final Plan
New York State Department of Environmental Conservation (NYSDEC)		Mitigation Action Workshop, HMP Review, Final Draft HMP Presentation
Montgomery County Business Development Center		All Planning Team meetings, survey, workshops, HMP Review, Draft and Final HMP Presentations
Montgomery County Department of Public Works		All Planning Team meetings, survey, workshops, HMP Review, Draft and Final HMP Presentations
Montgomery County Office of Emergency Management		All Planning Team meetings, survey, workshops, HMP Review, Draft and Final HMP Presentations
Local HMP Team Members	Email	Survey, workshops, HMP Review, Draft and Final HMP Presentations
School districts and other academic institutions	Email	HMP Review, Draft and Final HMP Presentations
Fire Districts and Fire Departments	Direct Contact	HMP Review, Draft and Final HMP Presentations
Law Enforcement	Email	HMP Review, Draft and Final HMP Presentations
Tribes	Email	HMP Review, Draft and Final HMP Presentations
Agencies and Institutions	Email	HMP Review, Draft and Final HMP Presentations
Community Lifeline Employers	Email	HMP Review, Draft and Final HMP Presentations

Stakeholder	Outreach Method	Role
Adjacent Counties: Fulton, Schenectady, Schoharie, Otsego, and Herkimer Counties	Email	Contacted adjacent counties to inform them about the availability of the project website, draft plan documents and surveys, and invited to provide input to the planning process via an online plan review survey

2.4.2 Outreach Results

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The goal for outreach is to bring together diverse community-based partners representing the interest of the whole community including leaders who can implement mitigation and leaders from underserved communities and socially vulnerable populations. Once completed, the HMP will provide relevant demographic information related to the EJ population (i.e., income, minority, and English isolation); a description of where the community is located geographically; and how the incorporation of EJ population voices will increase climate resiliency (i.e., the ability to anticipate, cope with, and rebound from events and trends related to climate change hazards) for these areas.

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Global climate change is a local environmental justice issue because it has disproportionate impacts on socially vulnerable populations in New York. With climate change expected to exacerbate current and future vulnerabilities in our communities, participating jurisdictions were strongly encouraged to approach the Hazard Mitigation Plan (HMP) 5-year update with a clear focus on addressing existing environmental, economic, and social disparities. Targeted outreach to stakeholders representing nonprofit organizations including community-based organizations that support underserviced communities and socially vulnerable populations is a specifically required element under the 2023 FEMA Local Hazard Mitigation Policy (Element A2-a.5).

A guidance document was developed and distributed to all participating jurisdictions suggests several ways to integrate outreach and engagement into the Hazard Mitigation Planning process to achieve more equitable outcomes for Montgomery County. The guidance document is provided in Appendix B.

Planning Committee members identified key stakeholders to assist with facilitating public outreach including underserved and socially vulnerable populations. Information and input provided by these stakeholders has been included throughout this plan where appropriate, as identified in the references.

To facilitate better coordination and communication between the Planning Committee and citizens, allowing the public to be adequately involved in the planning process, draft documents were available to the public through a variety of venues including printed and online format. The Core Team and Planning Committee made the following efforts toward public participation in the development and review of the Plan:

- The public was informed of the hazard mitigation planning effort at the kick-off meeting and through press releases, news articles, and printed posters released throughout the planning process. Copies of these announcements may be found in Appendix B.
- To inform the public and county agencies of the ongoing plan update effort, updates regarding the mitigation planning process have been made at County-wide meetings including those of the County Legislature.

- A public website is being maintained as another way to facilitate communication between the Planning Committee and County residents

  https://www.co.montgomery.ny.us/web/sites/separtments/hazardmitigation/default.asp The public website contains a project overview, Planning Committee contact information, and the HMP for public review and comment.

- All participating municipalities have been requested and are expected to post links to the Montgomery County Hazard Mitigation website on the home web pages of each jurisdiction.
- To facilitate coordination and communication between the Planning Team and citizens and involve the public in the planning process, the Update will be available to the public through a variety of venues. A printed version of the Plan will be maintained at the Montgomery County Business Development Center.
- An online natural hazards survey was developed to gauge community experience with local natural impacts and to assess the perceived risk to community assets. All but one community responded to the survey with over 74 individual responses.
- Hazard mitigation planning posters (see Appendix B) were developed to inform the public of the planning process, provide local contact information, and encourage the public to review the plan and provide input.
- On March 26, 2024, the draft Hazard Mitigation Plan was posted to the Montgomery County website. https://www.co.montgomery.ny.us/web/sites/separtments/hazardmitigation/default.asp. This was an opportunity for public comment on the Draft Plan Update before undergoing review by NYSDHSES. All public comments were directed to the Montgomery Business Development Center for collection and review by the Planning Committee. Any public comments received were incorporated into the plan before submittal to FEMA.
- On March 27, 2024, an email and press release was sent to the participating Montgomery County cities, towns, and villages requesting public/stakeholder review/comment of the Draft Plan Update.
- A public notice announcing the Draft Plan posting, and upcoming public meeting to be held prior to Plan submittal to FEMA and providing a link to the mitigation website was distributed on April 26, 2024.
- On May 5, 2024, a public presentation on the Draft Plan was held as part of the Legislative Committee Meeting.
- On May 28, 2024, the County Legislature voted to send the draft Plan to NYDHSES for review.

Table 2-5 summarizes the meetings and public forums conducted throughout the HMP update. This summary table identifies only the formal meetings held during the plan update process and does not reflect the larger universe of planning activities conducted by individuals and groups throughout the planning process.

Table 2-5. Meetings and Public Forums

Meeting Date	Topic	Audience / Purpose
Core Team Kickoff Meeting #1- June 1, 2022	Kickoff meeting	Core Team
Core Team Working Meeting #2 –October 14, 2022	Stakeholders, Assets and Natural Hazard Risk Index	Core Team
HMP Planning Process Public Meeting #1 December 6, 2022	Planning Process and Jurisdiction Participation	Core Team/ Montgomery County Planning Team
Core Team Working Meeting #3– January 11, 2023		Core Team
Core Team Working Meeting #4–March 1, 2023	Review Chapters 1-5	Core Team
HMP Planning Process Public Meeting #2 March 29, 2023	Presentation of Natural Hazards Index, Community Assets and Vulnerability Risk Assessment	Core Team/ Montgomery County Planning Team/ Local Stakeholders
Core Team Working Meeting #5–April 18, 2023	Review Mitigation Strategies, Update Capabilities Assessment	Core Team
Core Team Working Meeting #6–May 3, 2023	Prioritization	Core Team
Core Team Working Meeting #7- August 9, 2023	Review Chapters 6-8	Core Team
HMP Planning Process Public Meeting #3 September 19, 2023	Mitigation Goals and Actions	Core Team/ Montgomery County Planning Team/ Stakeholders
Core Team Working Meeting #8- October 13, 2023	State Coordination	Core Team/ NYDHSES
HMP Planning Process Public Meeting #4 November 16, 2023	Future Mitigation Goals and Prioritization	Core Team/ Montgomery County Planning Team/ Stakeholders
Core Team Working Meeting #9–December 14, 2023	Final Prioritization and Review of Chapters 9-10	Core Team
Core Team Working Meeting #10–January 31, 2024	Draft Review and Schedule for Public Outreach	Core Team
Core Team and Planning Team– March, 2024	Final Review of Draft	Core Team/ Montgomery County Planning Team
Public Comments Period Commenced March 26, 2024	Email and Press Release on Public Comment Period	Core Team/ Montgomery County Planning Team/ Local Stakeholders/ Neighboring Communities
HMP Planning Process Public Meeting #5 May 5, 2024	Draft Report Presentation	Core Team/ Montgomery County Planning Team/ Local Stakeholders/ Neighboring Communities
County Board Public Meeting, May 28th	Vote to send to DHSES for review	Montgomery County Planning Team/ County Legislation

Public Meetings are in Bold

2.4.3 Continued Public Involvement

D1-a

Montgomery County is committed to the continued involvement of the public. Therefore, the HMP update will be made available in electronic format for public review. Each jurisdiction's main point of contact identified earlier in this section (Table 2-3) shall be responsible for receiving, tracking, and filing public comments regarding this HMP update.

The public will have an opportunity to comment on the HMP update as part of the annual mitigation planning evaluation process and the next five-year mitigation plan update. The HMP lead (currently Kenneth Rose) is responsible for coordinating the plan evaluation portion of the meeting, soliciting feedback, collecting, and reviewing comments, and ensuring that public comments are incorporated in the Update as appropriate with assistance from members of the Core Planning Team. Additional meetings may also be held as deemed necessary by the Core Planning Team to provide the public with an opportunity to express concerns, opinions, and ideas about the plan.

Further details regarding continued public involvement are provided in Section 9.

After completion of this HMP update, implementation, and ongoing maintenance will continue to be a function of the Planning Committee. The Planning Committee will review the HMP and accept public comment as part of a mid-cycle review and as part of five-year mitigation plan updates.

A notice regarding updates of the HMP will be publicized after the HMP Committee's evaluation and posted on the County website.

Alexander Kuttesch has been identified as the ongoing County Hazard Mitigation Plan Coordinator (see Section 9), and is responsible for receiving, tracking, and filing public comments regarding this HMP update.

Contact information is:

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3 Community Profile

An overview of Montgomery County is provided to develop an understanding of the study area, including the economic, environmental, infrastructural, and economic assets at risk and the concerns that may be present related to hazards analyzed later in this plan (e.g., low lying areas prone to flooding or a high percentage of vulnerable persons in an area). General County information (physical setting, population and demographics, general building stock, land use, population trends, critical facilities) is provided to offer additional context.

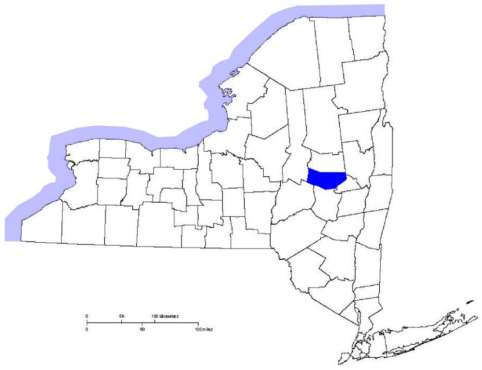

Figure 1.2: Map of NY State with Montgomery County highlighted in dark blue (source: Tighe & Bond).

3.1 LOCATION AND GEOGRAPHY

Montgomery County (County) is in the central east part of New York State (**Figure 1.2**), 33-miles northwest from Albany, NY and 175 miles northwest of New York City. It is bordered by Fulton County to the north, Schenectady and Saratoga Counties to the east, Otsego and Schoharie Counties to the south, and Herkimer County to the west. The County covers an area of 410 square miles and encompasses ten towns, ten villages, and the City of Amsterdam, the County's urban and economic center. The remainder of the County is rural and agricultural (NY Rising Countywide Resiliency Plan 2014). The Central Leatherstocking region [7]of New York State, named for the unique leather leggings worn by the frontiers men and made in this area, is contained within the County's borders. The Mohawk River and Erie Canal bisect the County. The Canal runs through the center of Montgomery County parallel to the New York State Thruway, and its lock system is used primarily for recreation. The County is also part of the Mohawk Valley Heritage Corridor that stretches 130 miles from Central New York to the Hudson River.

The County is located within the Mohawk Valley physiographic region. The foothills of the Adirondack Mountains are located a few miles to the north and bordering Montgomery County to the south are Southwestern Plateau and Catskill Mountains. Willse Hill is the County's highest elevation at 1,600 feet above mean sea level in the Town of Minden, and the lowest point is about 235 feet along the Mohawk River. The total relief between hilltops and valley bottoms in Montgomery County is approximately 1,215 feet. The Mohawk River flows through a steep-walled valley averaging about 1,000 feet in width and under 500 feet in elevation. The floodplain is most developed between Fultonville and Fort Hunter and just west of St. Johnsville. Level terrace surfaces are west of Fonda and in the vicinity of Tribes Hill, Auriesville, and St. Johnsville (Jeffords, 1950).

[7] https://en.wikipedia.org/wiki/Central_New_York_Region, https://www.newyorkstatedestinations.com/central/#:~:text=The%20Central%20Region%20of%20Upstate,rich%20in%20history%20and%20tradition

Away from the river, the surface rises abruptly 250 to 500 feet in less than a mile to the uplands. The topography surrounding the Mohawk River is undulating with irregularly rounded hills and steep slopes. The remainder of Montgomery County includes small level areas scattered around an undulating surface. The area around Charleston Four Corners is characterized by parallel elongated ridges (drumlins) that trend east-west (Jeffords, 1950).

3.2 POPULATION TRENDS AND DEMOGRAPHICS

This section discusses population trends to use as a basis for estimating future land use changes that could significantly change the character of the area. Population trends can provide a basis for making decisions on the type of mitigation approaches to consider and locations in which these approaches should be applied. This information can also be used to support planning decisions regarding future development in vulnerable areas.

Based on U.S. Census data, Montgomery County's 2020 population was 49,558 persons, a slight decrease from the 2010 Census population of 49,945. In fact, from 1900 to 2020, the County has experienced only minor fluctuations in its population. Table 3-1 displays the population and population differences from 1900 to 2020 in Montgomery County.

Table 3-1. Montgomery County Population Trends, 1900 to 2020

Year	Population	Change in Population	Percent Change
1900	47,488	1,789	3.9
1910	57,567	10,079	21.2
1920	57,928	361	0.6
1930	60,076	2,148	3.7
1940	59,142	-934	-1.6
1950	59,594	452	0.8
1960	57,240	-2,354	-4.0
1970	55,883	-1,357	-2.4
1980	53,439	-2,444	-4.4
1990	51,981	-1,458	-2.7
2000	49,708	-2,273	-4.4
2010	49,945	237	0.5
2020	49,558	387	-0.8

Source: U.S. Census Bureau, 1995, 2010 and 2020

Note: Change in population and percent in population change was calculated from available data

DMA 2000 requires that HMPs consider socially vulnerable populations. These populations can be more susceptible to hazard events, based on several factors including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing. For the purposes of this study, vulnerable populations shall include (1) the elderly (persons aged 65 and over) and (2) those living in low-income households. Table 3-2 presents the population statistics for Montgomery County based on the 2020 U.S. Census data including socially vulnerable populations.

Table 3-2. Montgomery County Population Statistics (2020 U.S. Census)

Jurisdiction	Census 2020 Pop. (2020 U.S. Census)[1]	Census Pop. 65+[1]	Percent of Census Pop. 65+	Census Pop. Below Poverty*[1]	Percent of Census Pop. Below Poverty
City of Amsterdam	18,187	3,201	17.6	4,329	**23.8**
Town of Amsterdam	5,244	1,184	22.5	380	**7.2**
Village of Hagaman	1,208	343	28.4	68	**5.6**
Town of Canajoharie	3,656	544	14.9	269	**7.4**
Village of Ames	163	26	16.0	14	**8.6**
Village of Canajoharie	1,608	322	20.0	162	**10.1**
Town of Charleston	1,336	171	12.8	112	**8.4**
Town of Florida	2,692	430	16.0	313	**11.6**
Town of Glen	2,400	291	12.1	470	**19.6**
Village of Fultonville	656	82	12.5	77	**11.7**
Town of Minden	4,187	537	12.8	992	**23.7**
Village of Fort Plain	1,833	284	15.5	496	**27.1**
Town of Mohawk	3,572	780	21.8	244	**6.8**
Village of Fonda	529	104	19.7	48	**9.1**
Town of Palatine	3,128	788	25.2	383	**12.2**
Village of Nelliston	682	204	30.0	108	**15.9**
Village of Palatine Bridge	617	236	38.2	65	**10.5**
Town of Root	2,004	324	16.2	121	**6.0**
Town of St. Johnsville	2,462	506	20.6	587	**23.8**
Village of St. Johnsville	1,731	315	18.2	501	**29.0**
Montgomery County (Total)	**49,558**	**9,466**	**19.1**	**5,898**	**11.9**

Source(s): Census 2020 (U.S. Census Bureau); U.S. Census Bureau, 2021 American Community Survey;
Note: Pop. = population

1 Populations of the towns do not include the populations of their incorporated villages.
** Individuals below poverty level (Census poverty threshold for a 3-person family unit is approximately $15,000)*

In 2021, there were 22,892 housing units in the county, an increase of 0.12 percent from the 20,272 housing units identified in 2010. There is an average of 55.83 housing units per square mile with 2.46 persons per household. The median price of an owner-occupied housing unit in Montgomery County was estimated at $99,500 in 2010 (U.S. Census, 2010 and 2007-2011 American Community Survey), which has since increased to $113,500 in 2020 (U.S. Census, 2010 and 2017-2021 American Community Survey). The median age in the County is 40.9 years, with 19.1% of the population being 65 years of age or older. Approximately 11.9% of the population was below the poverty level in 2020.

The County has little ethnic or racial diversity, with 85 percent of the population self-identifying as white alone, 15% identifying as Hispanic or Latino origin, 2.8% identifying as Black or African American alone, and 1% Asian alone on the 2020 US Census.[8]

2020 Census data indicates that most housing units (59 percent) in Montgomery County consist of single-family detached units. The U.S. Census Bureau's 2020 data identified 1,034 business establishments employing 16,165 people in Montgomery County. Both the number of single-family units and number of businesses have decreased since 2010.

3.3 CLIMATE

The climate of New York State is similar to most of the Northeast U.S. and is classified as Humid Continental. Differences in latitude, character of topography, and proximity to large bodies of water all influence the climate across the State. Precipitation during the warm, growing season (April through September) is characterized by convective storms that form in advance of an eastward moving cold front or during periods of local atmospheric instability. Occasionally, tropical cyclones will move up from southern coastal areas and produce large quantities of rain. Both types of storms typically are characterized by short periods of intense precipitation that produce large amounts of surface runoff and little recharge (Cornell University, Date Unknown).

The cool season (October through March) is characterized by large, low-pressure systems that move northeastward along the Atlantic coast or the western side of the Appalachian Mountains. Storms that form in these systems are characterized by long periods of steady precipitation in the form of rain, snow, or ice, and tend to produce less surface runoff and more recharge than the summer storms because they have a longer duration and occasionally result in snowmelt (Cornell University, Date Unknown).

According to monthly average data from NOAA, July tends to be the warmest month in Montgomery County with median high temperatures averaging around 80ºF; in contrast January is the coldest month with low temperatures averaging around 12ºF. Annual precipitation averages approximately 45 inches of rainfall and 74 inches of snowfall.

Severe weather recorded by NOAA for Montgomery County, between July 2013 and October 2021 was related to hail, high winds, thunderstorms, winter weather, cold/wind chill, heavy snow, and flooding. Flooding was the most common severe storm event[9]

3.4 NATURAL ENVIRONMENT

Montgomery County is located entirely within the Mohawk River Basin Watershed, which represents one-quarter of the larger Hudson River Watershed (NY Rising Countywide Resiliency Plan 2014). Historically, the River has been a hub for transportation and trade by the Native American tribes, and its floodplain is very fertile and has been used for agricultural purposes for centuries. The Mohawk River flows west to east through

[8] https://www.census.gov/quickfacts/fact/table/montgomerycountynewyork/HSG495220#HSG495220
[9] https://www.ncdc.noaa.gov/stormevents/

the center of Montgomery County and receives all the County's surface water runoff. The Mohawk River is a major tributary of the Hudson River and joins the Hudson River at Cohoes. Numerous tributaries feed the Mohawk River, including the Schoharie, Canajoharie Creek, and the Otsquago Creek, which run through the Town of Minden after flowing along Route 80 through the central part of the Village of Fort Plain (NY Rising Countywide Resiliency Plan 2014).

3.5 ECONOMY

The Montgomery County Department of Economic Development and Planning (MCDEDP) was created in 2011 to administer the MCDEDP Program and is the lead Economic Development Agency in Montgomery County, New York. In addition, County staff act as the administrative body for the Montgomery County Industrial Development Agency (MCIDA). By joining forces and pooling resources, the MCDEDP and the Montgomery County Business Development Center (MCBDC) provide professional economic development assistance to businesses interested in expanding or relocating in Montgomery County.

In addition to business attractions, MCBDC places a strong focus on retaining and expanding existing businesses to maintain economic stability within Montgomery County. MCBDC works directly with local employers to promote capital investments and job creation, reducing the risk of closure or relocation out of the County. Services delivered by MCBDC include needs assessments, identification of expansion opportunities and securing financial, technical, marketing and training resources. Through the MCBDC, Montgomery County businesses can access loans and grants to assist with acquisition and/or expansion. The MCIDA can provide long-term tax-exempt bond financing with lower interest rates than are available through conventional financing, while collaborating with the MCIDA and Capital Resource Corp.

The Fulton and Montgomery Counties region has experienced high unemployment rates and the loss of manufacturing jobs in the past 20 years. However, the Counties have experienced success in revitalizing segments of their local economies through planning, investment in economic development, and a strong inventory of shovel-ready sites. The MCBDC provides a key link between the local workforce development board and Fulton-Montgomery Community College to help employers recruit and retain workers from the County's exceptional labor pool.

Montgomery County has achieved economic success with its industrial/business parks. Currently, there are three business parks in the County: Florida Business, Florida Business Extension, and Glen Canal View which totals 860 acres, of which 830 acres are developed or under contract and 30 acres available to develop. Businesses located in these parks are as follows:

- Florida Business –
    - Target Distribution Center
    - Beechnut
- Florida Business Expansion
    - Hill & Markes
    - Dollar General
    - Vida-Blend, LLC

- Glen Canal View
    - DAIM Logistics,
    - L&S Veneer
    - Seward Valley Farm, Inc
    - Montgomery County Shared Services Facility

Many important economic resources in the County originate from the City of Amsterdam, as shown on the MCBDC 'Area Employers' webpage, including companies that supply groceries, farm goods, health services, hardware, and light manufacturing. Based on the 2020 U.S. Census, 59% of the County's residents aged 16 years and over are employed. Most of the employed population in the County work in healthcare and social assistance, manufacturing, retail trade, transportation and warehousing, and accommodation and food services.

3.6 GOVERNANCE

County Offices, including the executive and legislative branches, are in the Village of Fonda. An elected County Executive runs the executive branch, while the legislative branch has a Chairman and 9 legislative districts made up of board members from various communities in which they reside. In 2022, updated New York State congressional district boundaries went into effect. The County is part of NYS's 19th Congressional District and 46th State Senate District. Two Assembly districts (District 102 and 111) represent the County. There are several legislative committees that are made up of board members with one chairperson.

One supervisor represents each town while one mayor represents each village and city. The county is made up of six school districts: Greater Amsterdam School District, Canajoharie Central School District, Fonda-Fultonville Central School District, Fort Plain Central School District, Oppenheim-Ephratah-St. Johnsville Central School District, and Fulton-Montgomery Community College.

3.7 TRANSPORTATION

Montgomery County is served by the New York State Thruway (I- 90), which runs through the center of the County and is parallel to the Mohawk River. I-90 connects the County to Schenectady and Albany. I-90 intersects with both I-87 (Adirondack Northway), a major transportation route that heads north to the Adirondacks or south to New York City, and I-88, a major transportation route that heads southwest through New York and Pennsylvania (Fulton-Montgomery County Regional Chamber of Commerce, Date Unknown). These state thruways corridors are four-lane highways that traverse suburban and rural areas connecting communities and urban centers. Retail and commercial land uses are interspersed throughout these divided highway corridors, especially where state routes connect to limited access highways.

Rail transportation in Montgomery County includes both passenger and freight service. Amtrak services passenger needs while CSX provides freight services to major markets in the Northeastern U.S. and Canada. (MCIDA, 2007). Additionally, CSX and Amtrack lines traverse Montgomery County in an east-west direction (Planning Committee Input in 2016).

The Montgomery Area Express ("the MAX") began operating in February 2008, running 2 busses between St. Johnsville and the City of Amsterdam. The Bus operates on a Monday through Friday schedule (Montgomery County MAX Bus, 2018).

The City of Gloversville operates a bus transportation system called the Gloversville Transit System. This bus operation began in 1979 as a one-route system within the City of Gloversville that utilized two used buses. In 1981, two new international buses were added to the fleet. An additional route was added in 1982 to service the City of Johnstown. A route to service the Crossroads Industrial Park and Economic Development Zones was established in 1989. In 2008, an Intercounty route to Amsterdam was established to cut Medicaid Transport costs and to service the growing Route 30 corridor. A paratransit service was initiated in 1994 for the area's disabled. This is a curb-to-curb reservation service to provide transportation to appointments, shopping, etc. The paratransit service is available during certain hours when the fixed routes are in operation. Currently, Gloversville Transit services the cities of Gloversville and Amsterdam, the Crossroads, Johnstown Industrial Parks, and Fulton-Montgomery Community College (Gloversville Transit System 2022). Additionally, a bus service is provided to students that attend Fulton-Montgomery Community College.

3.8 OTHER ESSENTIAL FACILITIES

Montgomery County's municipal drinking water supply is drawn from potable water facilities, wells, and water tanks. The County has two class AA/AAS basins (4183 and 4158). All of the County's residents rely on private on-site septic systems, except for the few communities with waste-water treatment plants.

Communications is provided by AT&T, Time-Warner Cable, and others.

High-potential loss facilities in the County include dams, levees, nuclear power plants, military installations, and hazardous materials (HAZMAT) facilities. No levees, nuclear power plants or military installations were identified in the County. According to the U.S. Army Corps of Engineers (USACE) National Inventory of Dams (NID), there are 12 dams located in Montgomery County. This includes 3 High Hazard Dams, 3 significant hazard dams and 6 Locks which are considered dams with Low potential hazards.

A comprehensive inventory of essential facility, transportation, and utility assets in Montgomery County was developed from various sources including HAZUS-MH provided data, Montgomery County Business Development Center, and input from the Core Team and Planning Committees, which are further detailed in Section 5 of this HMP.

4 Natural Hazards (Risk Assessments)

4.1 HAZARDS IDENTIFICATION

4.1.1 State Hazards

The 2019 New York State Hazard Mitigation Plan (SHMP)[10] provides an in-depth overview of natural hazards in New York. The SHMP identifies 18 natural hazards that have an impact or have a history of impacting communities in the state of New York. These hazards are as follows:

Hydrologic Hazards –

- Flooding
- Drought

Atmospheric Hazards –

- Wind
- Lightning
- Cold Wave
- Heat Wave
- Hurricane
- Tornado

Extreme Weather –

- Snowstorm
- Ice Storm
- Hail

Geologic Related Hazards –

- Coastal Hazards
- Landslide
- Earthquake
- Tsunami/Seiche
- Avalanche
- Volcano

Non-Climate Related Hazards –

- Wildfire

[10]NYDHSES Mitigation Planning (201p), "New York State Hazard Mitigation Plan": https://mitigateny.availabs.org/about

4.1.2 Selection of Hazards that affect Montgomery County

As suggested under FEMA planning guidance, the Planning Team reviewed the full range of natural hazards identified in the SHMP and identified natural hazards that have impacted Montgomery County in the past or could impact Montgomery County in the future. The hazards selection for Montgomery County was made using local expertise from the Core Team, information from the 2016 Montgomery County Hazard Mitigation Plan, the 2019 SHMP, FEMA's National Risk Index[11] and results of the Planning Committee natural hazards risk survey.

The Planning Team reviewed each of the 18 NY State HMP natural hazards for inclusion in the Montgomery County HMP update. **Table 4-1** below indicates results of the Team review including the history and possibility for future occurrence of each hazard, current frequency and geographical extent, severity of hazard impact, and results of a hazard index rating based on a scale of 1 (highest risk) through 5 (lowest risk). The definitions of geographical extent, probability of occurrence, frequency, geographical extent, and impact severity are provided in **Table 4-2**.

B1 a

Based on the results of the hazard index rating, avalanches, coastal hazards, tsunamis/seiches, and volcanoes were not considered applicable for Montgomery County. The remaining 14 natural hazards were further evaluated in the natural hazard profiles in section 4.2. Climate change impacts are integrated into the natural hazard elements where appropriate, consistent with the goals in the 2024 HMP.

The highest-ranked natural hazards that affect Montgomery County include:

- **Flooding** due to heavy rain, ice jams and flash flooding;
- **Severe Weather- Wind Related** including strong winds, lightning, and tornadoes;
- **Severe Winter Storms** including snowstorms, and ice storms;
- and **Extreme Temperatures**.

Drought, Earthquake and Landslide are detailed in the hazard profiles but due to lower risk, they are not included as a focus for the mitigation strategy

B1 a

Table 4-1. Relevant Natural Hazards for Montgomery County

Type of Natural Hazard	History of Occurrence in Montgomery County	Hazard Probability	Hazard Frequency	Geographic Extent	Severity of Impact	Hazard Risk Ranking
Hydrological Hazards						
Flood	Yes	4	3	3	2	1
Drought	Yes	2	2	3	2	3

[11] FEMA (2018), "National Risk Index, Montgomery County NY; https://hazards.fema.gov/nri/report/viewer?dataLOD=Counties&dataIDs=C36057"

NATURAL HAZARDS (RISK ASSESSMENTS)

Type of Natural Hazard	History of Occurrence in Montgomery County	Hazard Probability	Hazard Frequency	Geographic Extent	Severity of Impact	Hazard Risk Ranking
Atmospheric Hazards						
SEVERE WEATHER_ WIND RELATED						
Strong Winds	Yes	4	3	3	2	1
Hurricanes/Tropical Storms	Yes	3	2	3	3	2
Lightning	Yes	4	3	3	2	1
Tornadoes	Yes	3	3	1	2	3
SEVERE WINTER STORMS						
Snowstorm	Yes	4	3	3	2	1
Ice Storms	Yes	4	3	3	3	1
Hail	Yes	3	2	3	1	3
EXTREME TEMPERATURES						
Cold Wave	Yes	4	3	3	2	1
Heat Wave	Yes	4	3	3	2	1
Geological Hazards						
Coastal Hazards	No	0	0	0	0	NA
Earthquake	Yes	2	1	1	1	5
Landslide	Yes	2	1	1	2	4
Avalanche	No	0	0	0	0	NA
Volcanic Activity	No	0	0	0	0	NA
Tsunami/Seiche	No	0	0	0	0	NA
Other Hazards						
Wildfires	Yes	3	2	1	3	3

The hazard risk rankings were calculated by assigning points to each hazard (see Table 4.2) and totaling the scores. A score of 12-13 ranked as #1,10-11 as #2, 8-9 as #3 and 6-7 as #4, and 5-4 as #5. #1 is ranked as the highest hazard risk and #5 the lowest hazard risk for Montgomery County.

A statewide natural hazard risk ranking was utilized in the NY SHMP to compare regions relative risk, including loss due to natural hazards, social vulnerability, and community resilience. This ranking method is further detailed in Section 6, Vulnerability Analysis. Overall, Montgomery County is just under the New York average for natural hazard risk. Hazard types with a moderate risk index rating include ice storms, landslides,

riverine flooding, and tornados. Natural hazards with a relatively low risk index rating include cold wave, hail, heat wave, lightning, strong winds, and winter weather. Very low risk index ratings include earthquake, hurricane, and wildfire. Like the above assessment, avalanche, coastal flooding, tsunami and volcanic activity were not applicable. Drought was not evaluated in the statewide ranking.

Table 4-2. Hazard Profile Definitions [12]

Points		Description
Hazard Probability (Possible occurrence in the future)		
1	Unlikely	Less than a 1% probability over the next 100 years
2	Possible	1-10% probability in the next year or at least one chance in the next 100 years
3	Likely	10-100% probability in the next year or at least one chance in the next 10 years
4	Highly Likely	Near 100% probability in the next year
Hazard Frequency		
0	Very Low	Events that occur less frequently than once in 1,000 years (less than 0.1% per year).
1	Low	Events that occur from once in 100 years to once in 1,000 years (0.1% - 1% per year).
2	Medium	Events that occur from once in 10 years to once in 100 years (1% - 10% per year).
3	High	Events that occur more frequently than once in 10 years (greater than 10% per year).
Geographical Extent (Area Impacted by a Given Natural Hazard)		
1	Small	Less than 10% of the County affected
2	Medium	10-50% of the County affected
3	Large	More than 50% of the County affected
Severity of Impact from Hazard		
1	Minor	Limited and scattered property damage; no damage to public infrastructure (roads, bridges, trains, airports, public parks, etc.); contained geographic area (i.e., one or two communities); essential services (utilities, hospitals, schools, etc.) not interrupted; no injuries or fatalities.
2	Serious	Scattered major property damage (more than 10% destroyed); some minor infrastructure damage; wider geographic area (several communities); essential services briefly interrupted up to 1 day; some minor injuries.
3	Extensive	Consistent major property damage (more than 25%); major damage public infrastructure damage (up to several days for repairs); essential services are interrupted from several hours to several days; many injuries and possible fatalities.

[12] FEMA (March 2013), Local Mitigation Planning Handbook

4	Catastrophic	Property and public infrastructure destroyed (more than 50%); essential services stopped for 30 days or more, multiple injuries and fatalities.

4.1.3 Montgomery County Climate Change Impacts

B1-e

Climate change projections for Montgomery County were reviewed using data from the Northeast Region Climate Center (NECC)[13] developed for inclusion in the New York Climate Change Clearinghouse (NYCCSC) website[14]. Information from the New York State Department of Environmental Conservation, August 2021 Overview of Observed and Projected Climate Change in New York State[15] was also included. Changes in average precipitation, snowfall, and extreme events (cold and heat, and extreme precipitation and flooding), and temperature due to climate change are included in hazard profiles in the following sections.

A categorization of traditional natural hazards, within the context of climate change, was included to demonstrate the connections between traditional natural hazard analysis and climate change projections. This categorization also aligns with the three of the climate change categories included on the NYCCSC website and recognized in the New York State Energy Research and Development Authority (NYSERDA) ClimAID report, 2014 Update) and Climate Needs Assessment for New York State[16]. Climate change categories are illustrated as follows.

Changes in Precipitation: Changes in the amount, frequency, and timing of precipitation—including both rainfall and snowfall—are occurring across the globe as temperatures rise and other climate patterns shift in response.

Rising Temperatures: Average global temperatures have risen steadily in the last 50 years, and scientists warn that the trend will continue unless greenhouse gas emissions are significantly reduced. The 9 warmest years on record all occurred in the last 20 years (2017, 2016, 2015, 2014, 2013, 2010, 2009, 2005, and 1998), according to the U.S. National Oceanographic and Atmospheric Administration (NOAA).

Extreme Weather: Climate change is expected to increase extreme weather events across the globe, as well as right here in New York. There is strong evidence that storms—from heavy downpours and blizzards to tropical cyclones and hurricanes—are becoming more intense and damaging and can lead to devastating impacts for residents across the state.

[13] Northeast Regional Climate Center https://www.nrcc.cornell.edu/

[14] New York Climate Change Science Center https://www.priweb.org/science-education-programs-and-resources/climate-change-clearinghouses

[15] August 2021, New York State Department of Environmental Conservation, "Observed and Projected Climate Change in New Your State: An Overview"

[16] https://nysclimateimpacts.org/

4.2 HAZARD PROFILES

B1-a,b,c,d,e

Hazard profiles are provided in Sections 4.3-4.6 for natural hazards that could impact Montgomery County in the future or have impacted the County in the past. Sections are grouped into Hydrologic, Atmospheric, Geologic and Other. Within each section, specific hazard profiles include a definition and description of the hazard, previous occurrence and extent, local areas of impact, and probability for future occurrence. A discussion of previous occurrences includes historic data. Evaluation of the extent or severity of the hazard includes the measuring scale for a specific hazard. Locally identified areas of impact include maps showing the areas identified by the hazard whenever possible. The probability of future occurrences is based on the best available science and historic events using the hazard probability scale provided in **Table 4.2**.

For each natural hazard, the major vulnerability issues for four key sectors are summarized. The key sectors or categories of community assets include:

- Special populations and places (vulnerable populations and cultural assets)
- Built environment (municipal buildings and critical infrastructure)
- Natural environment
- Economy

Resources used to develop the natural hazard profiles are referenced as footnotes throughout the chapter.

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As this is a multi-jurisdictional plan, unique hazard and risk information for each community is addressed in the annex plans for each of the 20 participating jurisdictions.

4.3 Hydrologic Hazards

4.3 HYDROLOGIC HAZARDS

Floods are the most frequent and costly natural hazards in New York State in terms of human hardship and economic loss, particularly to communities that lie within flood prone areas or floodplains of a major water source. Flood hazard includes inland flooding as the direct result of heavy rains, ice jams, beavers, snow melt, dam failure, and flash flooding. Coastal flooding does not impact this inland community. At the other end of the spectrum, drought impacts are included as a hydrologic hazard for Montgomery County, primarily based on the negative impacts to water supplies and agriculture.

4.3.1 Inland Flooding

As defined in the 2019 NYS HMP, a flood is an overflow of water from oceans, rivers, groundwater, or rainfall that submerges areas that are usually dry. New York State identified the following types of floods that cause loss of life and damage to property, infrastructure, agriculture, and the environment:

- Riverine overbank flooding;
- Flash floods;
- Alluvial fan floods;
- Mudflows or debris floods;
- Dam- and levee-break floods;
- Local draining or high groundwater levels;
- Fluctuating lake levels;
- Ice-jams;
- Coastal flooding; and
- Urban flooding

For this HMP and as deemed appropriate by the Montgomery County Planning Committee, heavy rain, ice jams, beavers, snow melt, dam failure, and flash flooding are the main flood types of concern for the County. These types of floods are further discussed below.

4.3.1.1 FEMA Flood Hazard Areas

Areas at risk of flooding are mapped by FEMA as part of the National Flood Insurance Program (NFIP) established in 1968 to reduce the nation's flood losses via local floodplain management practices. A floodplain is defined by the NFIP as any land area susceptible to being inundated by floodwaters from any source[17]. FEMA's flood maps, the Flood Insurance Rate Maps (FIRM) delineate flood zones that are defined according to varying risk of, or potential for, flooding due to the land area's characteristics (proximity to a waterbody, topography/slope) and current waterbody conditions (water levels, historic storm experience).

The frequency and severity of flooding are measured based on the probability that a certain river discharge (flow) will be equaled or exceeded in a given year. Flood studies use historical records to determine the

[17] https://www.fema.gov/national-flood-insurance-program/definitions

probability of occurrence for the different flooding levels. For example, the 100-year flood has a 1-percent chance of being equaled or exceeded in any given year. The 100-year flood, or 1% chance annual flood is **not** inherently a flood that will occur once every 100 years.

The 100-year flood is used by the NFIP to guide floodplain management and determine the need for flood insurance. The term "500-year flood" or 0.2% annual chance flood, is the flood that has a 0.2-percent chance of being equaled or exceeded each year.

The 100- and 500- year floodplains and areas subject to flooding within Montgomery County were defined by the National Flood Insurance Program with an effective date of January 19, 2018. The flood areas for Western, Central and Eastern Montgomery County are included in Appendix E- Risk Assessment Mapping. **Table 4-3** describes the risk associated with each zone.

Table 4-3. Definitions of FEMA Flood Zones

Risk Type	Zone	Description
Low Risk	Unshaded X	Area of minimal flood hazard
Moderate Risk	X	0.2 % Annual Chance Flood
High Risk	A AE	1% Annual Chance Flood Inland floodplains without a base flood elevation (BFE)

4.3.1.2 Previous Occurrence and Extent of County-Wide Flooding (Inland)

Between 1971 and 2022, FEMA included Montgomery County in 15 flood-related major disaster (DR), or emergency (EM) declarations classified as one or a combination of the following disaster types: severe storms, flooding, hurricane, heavy rains, and Nor'easters.

Smaller flood events from 2012 to 2022 are summarized in Table 4-4. Between 8/1/1950 and 8/31/2022 140 notable events were posted on the NOAA NCDC Storm Events database for Montgomery County. Please see Section 6 Vulnerability Analysis for detailed information regarding impacts and losses to each municipality. It is worth noting that 12 of the 16 flood events in table 4.4 have occurred since 2016.

Table 4-4. Historic Flood Events and Local Impacts for Montgomery County (2012-2022)

Date	Type of Event	Local Impacts	Source
May 8, 2012	Flood	More than 100-mile stretch of the New York State Erie Canal System from Lock E-2 Waterford to Lock E-22 New London was closed due to high water and excessive flow	NOAA-NCDC

Date	Type of Event	Local Impacts	Source
October 27-28, 2012	Flooding (Hurricane Sandy)	In preparation for the imminent landfall of Hurricane Sandy, New York counties including Montgomery received federal aid. Though rain was heavy at times over the Mohawk Valley, the brunt of the storm hit in the southeastern part of the state.	FEMA
July 12, 2013	Severe Storms / Flooding	Persistent rains damaged houses, closed roads, and forced people to evacuate their homes in the Mohawk Valley. Widespread flooding was experienced throughout Montgomery County.	FEMA, The Daily Gazette
August 20-22, 2014	Heavy Rain and Flash Flood	Flash flooding occurred across west-central Montgomery County and northern Schoharie County. At least 15 roads were closed in Montgomery County, including an onramp for the New York State Thruway. A state of emergency was issued due to the flooding. The flooding caused sewage treatment plants to be inundated and a boil water advisory was issued for several days. In some parts of the County, residents had to evacuate their homes. Rainfall totals in the County ranged from 2.41 inches in Hessville to 4.35 inches in Fonda.	NOAA-NCDC, NWS
February 25, 2016	Flood	State Route 5 was closed between Fonda and Palatine Bridge due to flooding from heavy rainfall occurring over a frozen ground.	NOAA-NCDC
January 24, 2019	Flood	Flooding was reported in Midway Alley, Broadway, and West Main Street in Fonda.	NOAA-NCDC

Date	Type of Event	Local Impacts	Source
October 17, 2019	Flood	Riverfront Park was flooded near the Canajoharie Creek and Mohawk River.	NOAA-NCDC
October 31, 2019	Flood	Route 5 had all lanes closed at Truax Road due to flooding.	NOAA-NCDC
November 1, 2019	Flood	Route 5 had all lanes closed at Truax Road, Groff Road, and Staley Road due to flooding. State Route 5S was closed between Pattersonville Road and Bulls Head Road, and between Route 80 and Rouse Road due to flooding. Amtrak service was suspended on some routes between Albany and Syracuse, and some inbound passengers were transferred to buses. The high water also resulted in the closure of the Mohawk Valley Welcome Center in Fultonville along the New York State Thruway.	NOAA-NCDC
July 19-20, 2021	Flood	Multiple roads remained closed in the Village of Fonda due to a combination of water and mud on the roads. Many roads reopened early the next day.	NOAA-NCDC
July 23, 2021	Flood	Broadway between Route 5 and Wemple Avenue was closed due to flash flooding after an unnamed creek overflowed its banks north of town.	NOAA-NCDC
September 15, 2021	Flood	At least 6 inches of water was reported on the corner of Route 5 and Evelyn Street, and several inches of standing water was reported on the roadway. Parking lots with vehicles in high water reported. East Street and Park Street were closed due to flooding.	NOAA-NCDC

Date	Type of Event	Local Impacts	Source
February 18, 2022	Flood	The westbound lane of State Highway 5 (West Main Street) between Water Street and Budnick Road was closed due to flooding. All lanes along Route 5 between McKinley Road and Reservoir Road along the Mohawk River between Palatine Bridge and Fonda were blocked due to flooding.	NOAA-NCDC
February 22-23, 2022	Flood	Standing water and minor flooding was reported around Hickory Hill Road and Route 5 near the Village of Mohawk.	NOAA-NCDC
March 19, 2022	Flood	Montgomery County Sheriff reported minor flooding on roadways due to nearby creeks overflowing their banks. This included Millers Corners Road near Mill Point and Logtown Road near the town of Glen.	NOAA-NCDC
May 7-8, 2022	Flood	Several roads throughout Montgomery County were closed due to flooding, some of which included the villages of Hagaman and Fultonville and the towns of Palatine, Canajoharie, Root, Charleston, and Glen. Overall, the county experienced 21 road closures, 2 damaged road culverts, 2 mudslides, 1 foundational collapse of a home and 3 motor vehicle accidents.	NOAA-NCDC

4.3.1.3 Locally Identified Areas of Impact

Areas of severe or high risk of flooding in Montgomery County are located where major tributaries merge with the Mohawk River. This is a result of two major factors: flood-susceptible waterways in these locations and lower ground surface elevations relative to base flood elevation. In the 2014 Montgomery County NY Rising Countywide Resiliency (NYRCR) Plan, nine communities within Montgomery County were identified as having a historic pattern of repetitive flooding impacts during extreme storm events, typical storms events,

and the spring thaw. These communities include: The Towns of Minden and St. Johnsville, the Villages of St. Johnsville, Fort Plain, Canajoharie, Fort Johnson, Fonda, and Fultonville; and the Hamlet of Burtonsville. Table 4-5 details the major sources of flooding for each of these communities.

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Table 4-5. Locally Identified Areas of Flooding in Montgomery County

Location	Major Source of Flooding	FEMA Preliminary Flood Zone
Town of St. Johnsville	Mohawk River and East Canada Creek	The length of the two waterways and low-lying areas adjacent to the waterways
Village of St. Johnsville	Northern shore of Mohawk River	Low-lying areas along the river
Village of St. Johnsville	Zimmerman Creek	Low-lying Areas, Route 5 Bridge on Main Street
Town of Minden	Otsquago Creek	The length of the creek and low-lying areas adjacent to the waterway
Village of Fort Plain	The confluence of Otsquago Creek and Mohawk River	Low-lying areas along the banks of both the creek and river
Village of Canajoharie	Southern bank of Mohawk River	Low-lying areas along the banks of the river
Village of Ames	Brimstone Creek	DPW located on Route 10? adjacent to Brimstone Creek which overflows banks
Village of Fonda	The confluence of Mohawk River's northern bank and Cayadutta Creek	Low-lying areas along the banks of both the creek and river
Village of Fultonville	Southern bank of Mohawk River, across the river from the Village of Fonda	The length of the river and low-lying areas along its banks
Village of Fort Johnson	The confluence of Kayaderosseras Creek and Mohawk River	Low-lying areas along the banks of both the creek and river
Hamlet of Burtonville	Schoharie Creek	Along the Creek and areas of low elevation in its immediate vicinity
Village of Nelliston	Tributary Creek	Dygert Road
Town of Amsterdam	North Chuctanunda Creek	Flooding and stormwater runoff Harrower District
Kanatsiohareke Mohawk Community Fonda	Knauderack Creek and Mohawk River	Kanatsiohareke Community flooding

4.3.1.4 Repetitive Loss Structures

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The frequency and locations of flood hazard events in Montgomery County can be estimated based on the reported loss occurrences for repetitive loss properties and from local knowledge of flood hazard areas.

As defined by the Community Rating System (CRS) of the NFIP, a repetitive loss property[18] is any property which the NFIP has paid two or more flood claims of $1,000 or more in any given 10-year period since 1978. A severe repetitive loss property is any NFIP-insured property that has met at least one of the following paid flood loss criteria since 1978, regardless of ownership:

- Four or more separate claim payments of more than $5,000 each (including building and contents payments); or
- Two or more separate claim payments (building payments only) where the total of the payments exceeds the current value of the property.

Montgomery County has 193 NFIP policies in force as of March 31, 2023. There are 40 repetitive loss structures in Montgomery County according to claims data as of February 23, 2023. According to the FEMA data there are four commercial/ non-residential repetitive loss properties, twenty-six single family properties and ten 2-4-family properties. Twenty-four structures are in the 100-year flood zone, four are located in the 500-year flood and the remaining are in other areas that have experienced repetitive losses due to flooding. A total of 89 claims have been paid between the years of 1978 and 2023, for a total of $3,518,381 including $2,699,665 in building damages and $817,716 in contents losses. There are no severe repetitive loss properties under NFIP defined criteria.

4.3.1.5 Probability of Future Occurrence

Flooding is one of the most common hazards in Montgomery County. Looking back on the number (16) of flood events that have occurred in the region since 2012*, there is an approximately 63% chance that in any given year an area within Montgomery County will experience some type of flooding event.* The potential effects of climate change significantly impact inland flooding due to the increased frequency of severe storm events including nor'easters and hurricanes. Global climate change models suggest that Montgomery County may experience an increase of precipitation frequency and duration by 2100[19]. The Planning Team has determined that it is **HIGHLY LIKELY** that flooding will impact Montgomery County in the future. The County and its participating jurisdictions have implemented both structural and non-structural measures to withstand floods from heavy rain, ice jams, beaver dams, snow melt and dam/culvert failure. The County and its participating jurisdictions are enforcing the State Code in flood prone areas (100-year floodplain as shown on the FIRM) for buildings and structures. Therefore, it is in the best interests of the Town and residents to understand how areas of future flooding impact each community.

Despite these best efforts, a storm with sufficient magnitude could result in damages far greater than any the community has known, impacting the people, economy, natural resources, and/or cultural and historic assets requiring proactive planning to adapt or mitigate these impacts.

[18] For more information on repetitive losses see https://www.fema.gov/txt/rebuild/repetitive_loss_faqs.txt#:~:text=A%3A%20A%20Repetitive%20Loss%20(RL,currently%20insured%20by%20the%20NFIP

[19] https://nysclimateimpacts.org/explore-the-assessment/new-york-states-changing-climate/nysc-precipitation/

4.3.1.6 Inland Flooding with Climate Change

Precipitation and temperature changes due to climate change are key factors that will impact inland flooding in the future. The climate projections suggest that the frequency of high-intensity or extreme rainfall events will trend upward. As shown in **Figure 4.1**, the amount of precipitation released by storms in the northeast has increased by 71% from the baseline level (recorded 1901-1960) and present-day levels (measured 2001-2012), [20].

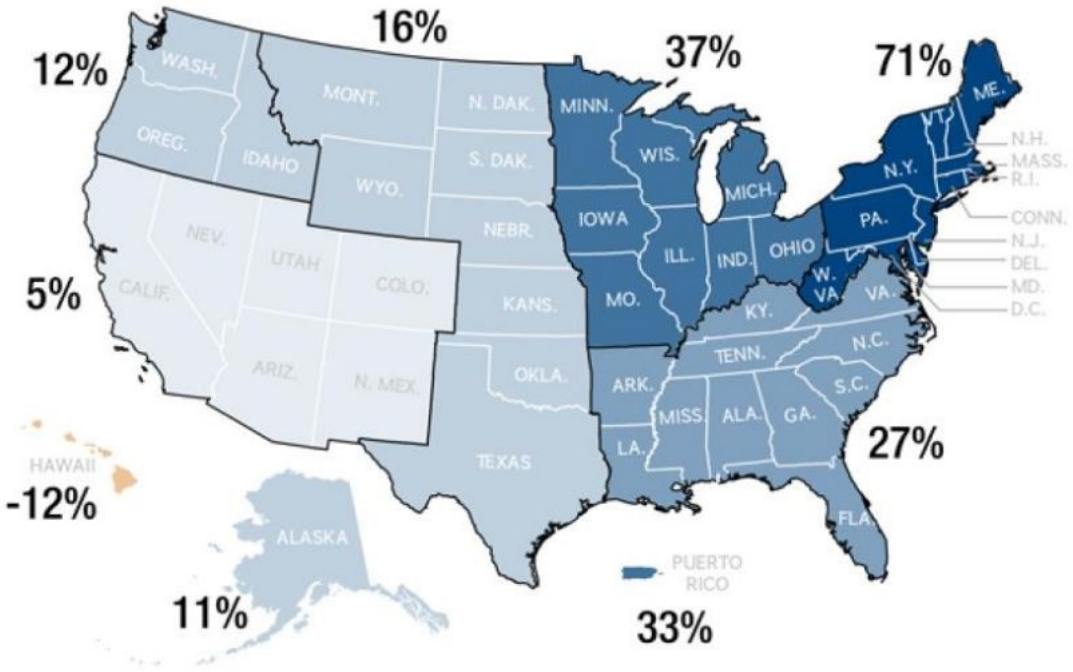

Figure 4.1: Nationwide comparison of increase in extreme precipitation

Overall, it is anticipated that the severity of flood-inducing weather events and storms will increase, with events that produce sufficient precipitation to present a risk of flooding increasing. A single intense downpour can cause flooding and widespread damage to property and critical infrastructure.

These changes have the potential to modify the current floodplain, impacting areas of Montgomery County that have not flooded in the past. Future annual precipitation statistics for the Mohawk River Valley Watershed from NYCCSC database (**Table 4.6**) show an increase from the current 47.09 inches to as much as 47.56 inches per year by the 2030s (almost 6 inches higher), and as much as 50.04 inches per year (two and one-half feet) by 2090 under a high global emissions scenario[21].

[20] National Climate Assessment (NCA) (2014), https://nca2014.globalchange.gov/
[21] New York Climate Change Science Center https://www.priweb.org/science-education-programs-and-resources/climate-change-clearinghouses

Table 4-6 Projected Change in Total Precipitation by Season[22]

Season	Baseline (inches)	Scenario	2030s	2050s	2070s	2090s
Annual	47.09	High Low	+0.47 +0.21	+1.82 +0.86	+2.62 +1.65	+3.95 +1.5
Fall	12.20	High Low	-0.28 -0.41	+0.14 -0.12	-0.37 +0.05	+0.02 -0.5
Spring	11.78	High Low	+0.53 +0.48	+0.95 +0.73	+1.62 +0.83	+1.85 +0.89
Summer	12.72	High Low	-0.5 -0.6	-0.61 -0.56	-0.52 -0.56	-0.42 -0.42
Winter	10.40	High Low	+0.72 +0.74	+1.33 +0.81	+1.89 +1.33	+2.5 +1.54

The number of days each year with extreme precipitation over one inch are variable for Montgomery County, fluctuating between loss and gain of days (**Table 4-7**).

Table 4-7 Projected Change in Number of Days of Future Extreme Precipitation Events in the Montgomery County[23]

	Scenario	2030s	2050	2070	2100
Annual Number of Days >1" precipitation	High	0	+0.5	+0.8	+1.4
	Low	0	+0.2	+0.4	+0.4
Annual Number of Days >2" precipitation	High	-0.03	-0.01	+0.01	+0.06
	Low	-0.07	-0.05	-0.04	0
Annual Number of Days >3" precipitation	High	+0.002	+0.004	+0.007	+0.011
	Low	+0.002	+0.004	+0.001	+0.007

Source: New York Climate Change Science Clearinghouse

4.3.1.7 Extreme Precipitation Impact on Engineering Design

Estimating changes in the expected intensity of future rainfall events is constantly evolving, with technological advancements, increases in available precipitation records, and climate change models. Utilizing rainfall values that reflect the changing climate are important in engineering design. Accounting for extreme precipitation is necessary to design adequate capacity in drainage systems and provide sufficient structural elevations to avoid flooding.

[22] New York Climate Change Science Center https://www.priweb.org/science-education-programs-and-resources/climate-change-clearinghouses
[23] New York Climate Change Science Center https://www.priweb.org/science-education-programs-and-resources/climate-change-clearinghouses

There are a variety of opinions on the definition of "extreme precipitation," and which precipitation metric to compare over time. Rainfall can be compared using statistical thresholds (e.g., 95th percentile), absolute thresholds (e.g., greater than 1 inch) and return intervals (e.g., 100-year storm), all of which can be applied over a range of time scales from minutes to years.

The "design storm" approach is a practical way to compare extreme precipitation amounts that is consistent with values used for engineering design. Rainfall amounts are compared over time periods based on storms of a similar size and duration called recurrence intervals or "return period," typically ranging from a 2-year to 100-year storm event. For example, a 2-year storm event has a 1 in 2 chance of occurring in a given year or a 50% probability. A 100-year storm event has a 1 in 100 chance of occurrence in a given year, or a 1% probability. A "design storm" is based on the historical precipitation records for a particular return interval and duration of the storm event such as a 2-year, 24-hour storm.

To assist the County in planning for climate change, methods to calculate future design storm events for a variety of recurrence intervals were reviewed. Available data included a review of data from the National Oceanic and Atmosphere Administration (NOAA) Atlas 14[24] and the Northeast Regional Climate Center (NRCC) data[25]. The NOAA Atlas 14 dataset has been used for a number of years as an improved source of extreme precipitation. The Atlas was completed in 2016 and is the most current rainfall intensity dataset in Massachusetts. The NRCC or Cornell data is a second commonly used source for extreme precipitation. **Table 4.8** shows the 24-hour rainfall depths for Montgomery County (Amsterdam Lock) using both NOAA Atlas 14 and NRCC data.

Table 4.8. Montgomery County 24-hour Rainfall Depth Estimates – NOAA Atlas 14 and NRCC Extreme Precipitation Tables

Recurrence Interval Storm Event	NOAA 24-hour Rainfall Depth for Montgomery County (inch)	NRCC Extreme Precipitation for Montgomery County
2-year	2.50	2.48
10-year	3.53	3.49
25-year	4.17	4.25
50-year	4.65	4.94
100-year	5.16	5.74

4.3.1.8 Implications for Inland Flooding with Climate Change

Rainfall is expected to increase in spring and winter months, with increasing consecutive dry days in summer and fall. More total rainfall can have an impact on the frequency of minor but disruptive flooding events, especially in areas where storm water infrastructure has not been adequately sized to accommodate higher levels.

[24] NOAA Precipitation Frequency Data Server (PFDS), "NOAA Atlas 14 Point Precipitation Frequency Estimates: MA": https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ma

[25] NRCC, "Extreme Precipitation Tables for Montgomery County, NY": https://precip.eas.cornell.edu/#/data_and_products

More intense downpours often lead to inland flooding as soil becomes saturated and stop absorbing more water, river flows rise, and the capacity of storm water systems is exceeded. Flooding may occur as a result of heavy rainfall, snowmelt, ice, or dam failure, but precipitation is the strongest driver of flooding in Montgomery County. Winter flooding is also common in the state, particularly when the ground is frozen. Montgomery County experienced 16 flood-related events from 2012 to 2021 with many of these falling in winter, or early spring.

Montgomery County jurisdiction have current FEMA Flood Insurance Maps which provide an important baseline for gaging the extent of future flood condition, however it is important to note that FEMA defined floodplain areas are based on historic and existing conditions; but do not include future or projected climate conditions. This floodplain will expand in the future as extreme precipitation impacts inland flood levels.

4.3.1.9 Flooding Impacts on Montgomery County Key Sectors

Inland Flood Exposure and Vulnerability by Key Sector[26]	
Built Environment	Flooding can also wash out sections of roadways and bridges, as well as cause extensive damage to public utilities and disruptions to the delivery of services.
Natural Resources and Environment	Severe floods cause a wide range of environmental impacts. Animals can lose their habitats if habitat elements are swept away or destroyed. Riverbank and soil erosion transform existing habitats and deposit sediment in downstream areas. If high levels of nutrients are present in the soil, this can also lead to eutrophication in downstream ecosystems.
Economy	Economic losses due to a flood include but are not limited to damages to buildings (and their contents) and infrastructure, agricultural losses, business interruption (including loss of wages), impacts on tourism, and tax base.
Vulnerable Populations	Populations that are particularly vulnerable to this hazard include the economically disadvantaged, who may face greater difficulty in evacuating, and individuals with medical needs who may have not been able to receive required medical care either during evacuation or if isolated by flooded infrastructure.

4.3.2 Ice Jams

An ice jam occurs when pieces of floating ice are carried with a stream's current and accumulate behind any obstruction to the stream flow. Obstructions may include river bends, mouths of tributaries, points where the river slope decreases, as well as dams and bridges. The water held back by this obstruction can cause flooding upstream, and if the obstruction suddenly breaks, flash flooding can occur as well (NWS & NOAA 2011). The formation of ice jams depends on the weather and physical condition of the river and stream channels. They are most likely to occur where the channel slope naturally decreases, in culverts, and along shallows where channels may freeze solid. Ice jams and resulting floods can occur during at different times of the year: fall freeze-up from the formation of frazil ice; mid-winter periods when stream channels freeze solid, forming anchor ice; and spring breakup when rising water levels from snowmelt or rainfall break existing ice cover into pieces that accumulate at bridges or other types of obstructions (NYS DHSES 2014).

[26] MEMA (2018), "SHMCAP"

There are two main types of ice jams: freeze-up and breakup. Freeze-up jams occur when floating ice may slow or stop due to a change in water slope as it reaches an obstruction to movement. Breakup jams occur during periods of thaw, in late winter and early spring. The ice cover breakup is usually associated with a rapid increase in runoff and corresponding river discharge due to heavy rainfall, snowmelt, or warmer temperatures (USACE 2002; NYS DHSES 2014).

Ice jams are common in the northeast U.S. and New York is not an exception. In fact, according to the USACE, New York State ranks second in the U.S. for total number of ice jam events, with over 1,500 incidents documented between 1848 and 2010. Areas of New York State that include characteristics lending to ice jam flooding include the northern counties of the Finger Lakes region and far western New York, the Mohawk Valley of central and eastern New York State, and the North Country (NYS DHSES, 2014).

4.3.2.1 Previous Occurrence and Extent

According to the Ice Jam Database maintained by the US Army Corps of Engineers Cold Regions Research Lab, only three ice jams that caused known flooding occurred on the Mohawk River between 2012 and 2022. In 2015 and 2018, a break-up released around the town of Schenectady, and on February 10th, 2022, a freeze-up caused minor flooding of lowlands near the Stockade Historic District of Schenectady. Additionally, according to the National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, minor flooding caused by an ice jam along Canajoharie Creek led to minor road closures in the Town of Canajoharie.

4.3.2.2 Locally Identified Areas of Impact

Heavy snow fall and frigid temperatures throughout the Northeast increase the chance of flooding from snowmelt and ice jams. When river ice piles up at shallow areas, bends, and islands it blocks the flow of water and may cause flooding of nearby homes and businesses. Ice jams that become lodged within the abutment of bridges can threaten the integrity of the structures. Heavy equipment, such as cranes with wrecking balls and explosives may have to be used to break up ice jams to reduce potential property and structural damages and losses.

4.3.2.3 Probability of Future Occurrence

The Planning Team has determined that it is **HIGHLY LIKELY** that ice jams will impact Montgomery County in the future. Based on climatic conditions in the area, ice jams may occur in the future causing damage to bridges, roads, and buildings within the Mohawk River floodplain. To minimize ice jams, special consideration should be made during reconstruction of any bridges or dams which tend to be where ice jams are more likely to occur.

4.3.3 Beavers

Beavers often build their dams in areas where there is increased residential development, roads, and agricultural use of the land. Flooding that results from beaver dams can cause serious public and private property damage, often threatening homes, septic systems, low-lying roadways, and other public infrastructure. These hazards relate directly to other hazards such as rainstorms, hurricanes, floods, and winter related storms.

4.3.3.1 Previous Occurrence and Extent[27]

Beavers are New York State's official mammal and have a long-standing history dating back to the early 1600's on Manhattan Island. The animal was an important element in Native American culture before the Dutch renamed the island to New Amsterdam and built a wall along today's Wall Street to keep out the Native Americans. Once the thirteen colonies became the United States, New Amsterdam became New York and home of the John Jacob Astor's Manhattan-based American Fur Company. The company dominated the fur trade, and the North American beaver was rendered all but extinct in New York City in the pursuit of fashion and finance. Over the next two decades, trapping, deforestation, and habitat loss caused by New York's rapid growth heavily contributed to the sharp decline in local beaver populations. It was not until the early 1900's when conservationists reintroduced the beaver to New York State's Adirondack Park that beaver populations began thriving again. Over time, beavers slowly found their way downstate. In 2007 a beaver lodge was seen as far south as the Bronx River. With the forests regrowth and more stringent trapping regulations, the beaver was able to return as an important component of New York State's native ecosystem. However, beavers returned to a landscape that was altered by people.

4.3.3.2 Locally Identified Areas of Impact

Conflicts have emerged between human land use and beaver activities due to their abundance in some parts of Montgomery County. Although beavers can have positive effects on water quality and the creation of wetland habitat, the animal is known to be a nuisance throughout the region. In residential areas near homes, beavers have been found to construct dams and cause flooding of low-lying areas and damage backyard trees. According to the NOAA Storm Events Database, a beaver dam along Currytown Road may have been responsible for severe flash flooding on June 13, 2014.

4.3.3.3 Probability of Future Occurrence

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Beaver activity is likely to persist throughout Montgomery County, as the factors that have allowed them to expand their range (increase in suitable habitat, wetland protection, and a decrease in hunting and trapping) are expected to remain constant over the next decade. The Planning Team has determined that it is **POSSIBLE** that beaver activity will impact Montgomery County in the future.

4.3.4 Snow Melt

Snow melt has the potential to cause significant flooding throughout Montgomery County. New York State exhibits persistent and sustained cold weather conditions which can result in large amounts of lake effect snowfall. This snowfall is directly related to an increased threat of spring floods due to snow melt. The flood hazard is further affected by increased precipitation from storm systems. This can be a serious problem for areas that receive large amounts of snow throughout the winter season. When temperatures rapidly increase, so does the rate at which snow melts; frozen soil also increases the risk of flood as water from melting snow is not able to seep into the ground.

Snowmelt flooding occurs when the major source of water involved in a flood is caused by melting snow. Unlike rainfall that can reach the soil almost immediately, the snowpack can store the water for an extended

[27] https://www.nyc.gov/site/wildlifenyc/animals/beavers.page#:~:text=In%20the%201600s%2C%20European%20demand,time%20here%20in%20recent%20years

amount of time until temperatures rise above freezing and the snow melts. This frozen storage delays the arrival of water to the soil for days, weeks, or even months. Once it begins to melt and does reach the soil, water from snowmelt behaves much as it would if it had come from rain instead of snow by either infiltrating into the soil, running off, or both. Flooding can occur when there is more water than the soil can absorb or can be contained in storage capacities in the soil, rivers, lakes, and reservoirs.

4.3.4.1 Previous Occurrence and Extent

Since 2012, Montgomery County has averaged about 1-2 severe winter storms per winter (with the exception of 2015 and 2016), which can cause flooding during times when temperatures can increase, particularly in the spring. The most recent event occurred in January 2019, when flooding followed a heavy snowfall over much of eastern New York. The combination of an unseasonably warm airmass and steady rainfall on January 24 caused snowmelt resulting in flooding in urban areas with poor drainage.

4.3.4.2 Locally Identified Areas of Impact

Montgomery County is vulnerable to snow melt; heavy snow fall, frigid temperatures followed by a sudden transition to warmer temperatures potentially causing flood related damage to homes and businesses, roads, and buildings, particularly within the Mohawk River floodplain.

4.3.4.3 Probability of Future Occurrence

With the climatic conditions that occur in Montgomery County including an average of 1-2 severe winter storms per year, snow melt will continue cause flooding during times when temperatures can increase, particularly in the spring. The Planning Team has determined that it is **LIKELY** that snowmelt will impact Montgomery County in the future.

4.3.5 Man-made Dams and Culvert Failure

4.3.5.1 Dams

A dam is an artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water (FEMA, 2010). Dams are man-made structures built across a stream or river that impound water and reduce the flow downstream (FEMA, 2003). They are built for the purpose of power production, agriculture, water supply, recreation, and flood protection. Dam failure is any malfunction or abnormality outside of the design that adversely affect a dam's primary function of impounding water (FEMA, 2011). Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam (inadequate spillway capacity);
- Prolonged periods of rainfall and flooding;
- Deliberate acts of sabotage (terrorism);
- Structural failure of materials used in dam construction;
- Movement and/or failure of the foundation supporting the dam;
- Settlement and cracking of concrete or embankment dams;
- Piping and internal erosion of soil in embankment dams;
- Inadequate or negligent operation, maintenance, and upkeep;
- Failure of upstream dams on the same waterway; or
- Earthquake (liquefaction / landslides) (FEMA, 2010).

A break in a dam can produce extremely dangerous flood situations because of the high velocities and large volumes of water released by such a break. Sometimes they can occur with little to no warning. Breaching of dams often occurs within hours after the first visible sign of dam failure, leaving little or no time for evacuation (FEMA 2006).

According to the NYSDEC Division of Water Bureau of Flood Protection and Dam Safety, the hazard classification of a dam is assigned according to the potential impacts of a dam failure pursuant to 6 NYCRR Part 673.3 (NYSDEC, 2009). Dams are classified in terms of potential for downstream damage if the dam were to fail. These hazard classifications are identified and defined below:

- *Low Hazard (Class A)* is a dam located in an area where failure will damage nothing more than isolated buildings, undeveloped lands, or township or county roads and/or will cause no significant economic loss or serious environmental damage. Failure or mis-operation would result in no probable loss of human life. Losses are principally limited to the owner's property.

- *Intermediate Hazard (Class B)* is a dam located in an area where failure may damage isolated homes, main highways, minor railroads, interrupt the use of important public utilities, and/or will cause significant economic loss or serious environmental damage. Failure or mis-operation would result in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams are often located in rural or agricultural areas but could be located in areas with population and significant infrastructure.

- *High Hazard (Class C)* is a dam located in an area where failure may cause loss of human life, serious damage to homes, industrial or commercial buildings, important public utilities, main highways, or railroads and/or will cause extensive economic loss. This is a downstream hazard classification for dams in which excessive economic loss (urban area including extensive community, industry, agriculture, or outstanding natural resources) would occur as a direct result of dam failure.

- *Negligible or No Hazard (Class D)* is a dam that has been breached or removed, or has failed or otherwise no longer materially impounds waters, or a dam that was planned but never constructed. Class "D" dams are considered to be defunct dams posing negligible or no hazard. The department may retain pertinent records regarding such dams.

4.3.5.2 Culverts

A culvert is defined as a structural opening under a roadway that allows water to pass from one side of a roadway to the other. A culvert can impound water similar to a dam under certain flood conditions, and if conditions are extreme, culverts can fail, causing road and property damage. A culvert can fail under the following conditions:

- Clogged with debris and sediment, invasive species, and other vegetation
- Buildup of flood water or on the upstream side of the culvert exceeding the capacity of the culvert
- Loss of structural integrity
- Culvert and road are washed out during a heavy rain or from snowmelt

- Soil around the culvert erodes, and without support, the culvert will buckle, or sag and the culvert will collapse

4.3.5.3 Previous Occurrence and Extent

Historically, dam failure has had a low occurrence in New York State with only eight failures listed in the Dam Incident Database provided by the Association of State Dam Safety Officials[28]. Although none of the historic dam failures occurred in Montgomery County, many of the dams within the County are more than 100 years old, which increases the possibility of dam failure. Inadequately sized culverts are a major problem across Montgomery County, as undersized culverts exacerbate storm drainage issues in many jurisdictions. Throughout the County, culverts are frequently overwhelmed by flood water during major storm events that result in severe damage or failure of the culvert.

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4.3.5.4 Locally Identified Areas of Impact[29]

The National Inventory of Dams database lists 12 dams within Montgomery County, three of which are High Hazard Dams and 9 are Intermediate Hazard Dams.[30][31]

High Hazard Dams

High hazard dams are those where failure or mis-operation will probably cause the loss of human life. [32]

Brookside Reservoir Dam- Owned by the City of Amsterdam. This dam was constructed in 1882 for water supply purposes and is located along Bunn Creek near the city of Amsterdam. The dam is an earthen dam with an uncontrolled spillway. The dam was assessed in 2018 and determined to be in satisfactory condition with no existing or potential safety deficiencies. The dam is listed as a high hazard dam and an Emergency Action Plan (EAP) was prepared to minimize property damage and loss of life. The dam is slated for removal in the next 5 years.

Harrower Pond Dam- This dam is privately owned and was completed in 1870 for the purpose of recreation. It is located at North Chuctanunda Creek near the neighborhood of Harrower in the Village of Amsterdam. The dam is primarily constructed of masonry with an uncontrolled spillway. The dam was assessed in 2016 and determined to be in poor condition with safety deficiencies recognized during normal operating conditions. The dam is listed as a high hazard dam and does not have an EAP prepared.

East Canada Lake Dam, also known as Beardslee Falls Dam- This dam is privately owned and located in the Town of St. Johnsville, on East Canada Creek on the border of Montgomery and Herkimer County's. The dam was built in 1924 for Hydroelectric Power and last inspected in December 2020 and found to be in poor condition. The dam is listed as a high hazard dam and has an EAP prepared.

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[28] https://damsafety.org/incidents

[29] https://gisservices.dec.ny.gov/gis/dil/
https://www.dec.ny.gov/lands/4991.html

[30] https://nid.sec.usace.army.mil/#/

[31] http://wwe1.osc.state.ny.us/localgov/dams/damsalldata.cfm

[32] https://damsafety.org/new-york

Significant (Intermediate) Hazard Dams

Fonda Reservoir Dam- This dam is owned by the Village of Fonda for public water supply. As of 3/4/2021 the conditions was not rated, but based on downstream populations it is considered a signification hazard. The Fonda Reservoir Dam does not have an EAP prepared.

Smeallie Dam- This dam is owned by the City of Amsterdam for irrigation purposes. As of March 2018, its condition is rated as poor, and based on downstream populations it is considered a signification hazard. Smeallie Dam does not have an EAP prepared.

Harrower Lower Dam- This dam is private owner and used for recreational purposes located in the Village of Hagaman As of May 2016, its condition is rated as poor, and based on downstream populations it is considered a signification hazard. Harrower Lower Dam does not have an EAP prepared.

Low Hazard Dams

Geroge Vosburgh Pond- This Low Hazard dam is privately owned for recreation no EAP is required.

Lock E-10 Dam at Cranesville, Lock E-11 Dam at Amsterdam, Lock E-12 Dam at Tribes Hill, Lock E-14 Dam at Canajoharie, Lock E-15 Dam at Fort Plain and Lock E13 Dam at Randall (Fonda Fultonville) are all owned by the New York State Canal Corporation for Hydroelectric Power. These locks are considered dams with Low potential Hazard. No EAPs are required for these structures.

County owned culverts that occur at road and stream crossings on county roads were inventoried and inspected during the fall of 2022. Additional information about culverts is provided in the Community Asset Inventory in Section 5 and Vulnerability Risk Section 6 and Appendix C.

County owned culverts that were found to be in poor condition are provided in Table 4.9.

Table 4.9. Montgomery County – Poor condition road and stream crossing culverts

Culvert Id	Town	Road	Structure Material
MC-MO-30-250	Town of Mohawk	Old Trail Road	Metal
MC-CJ-92-349	Town of Canajoharie	Mapletown Road	Plastic
MC-MO-33-233	Town of Mohawk	Hickory Hill Road	Metal
MC-G-110-143	Town of Glen	Logtown Road	Concrete
MC-CJ-90-57	Town of Canajoharie	Old Sharon Road	Metal
MC-FL-151-118	Town of Florida	Pattersonville Road	Metal
MC-CH-162-101	Town of Charleston	Green Road (North)	Plastic
MC-CJ-80-65	Town of Canajoharie	Clinton Road	Metal
MC-FL-145-126	Town of Florida	Fort Hunter Road	Metal
MC-G-164-151	Town of Glen	Noeltner Road	Plastic
MC-MO-33-229	Town of Mohawk	Hickory Hill Road	Concrete

Culvert Id	Town	Road	Structure Material
MC-R-96-314	Town of Root	Hiltop Road	Metal

4.3.5.5 Probability of Future Occurrence

The Planning Team has determined that it is **LIKELY** that dam failure will impact Montgomery County in the future. Climate change is likely to increase the severity of extreme precipitation events, increasing the probability that culverts may exceed their capacity. The Planning Team did not rate the probability for future occurrence of culvert failure but are including culverts in the community assets for vulnerability analysis.

4.3.5.6 Dam Failure Impacts on Montgomery County's Key Sectors

Dam and Culvert Failure Exposure and Vulnerability by Key Sector[33]	
Built Environment	Flood water from dam and culvert failure may potentially cut off evacuation routes, limit emergency access, and create isolation issues. Utilities such as overhead power lines, cable and phone lines in the inundation zone are also vulnerable.
Natural Resources and Environment	Following a dam failure, the impounded reservoir would experience a reduction in water levels, displacing aquatic organisms and exposing the benthic community to air. Downstream, habitat impacts would include direct mortality of flora and fauna, toppling of trees and removal of soil and inhibition of plant respiration in areas that remain flooded for long periods of time.
Economy	In addition to buildings and infrastructure in the inundation area, any habitat or agricultural operations in the area would also be exposed to this hazard, which could cause extensive economic damage if crops were ruined.
Vulnerable Populations	Given the short warning time associated with dam failure, culvert or tide gate failure, any population that is exposed to inundation and cannot rapidly evacuate would be considered vulnerable. This population includes households without vehicles, the elderly and young children who may be unable to get themselves out of the inundation area.

4.3.6 Flash Flooding

Flash floods are "a rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within six hours of the causative event (e.g., intense rainfall, dam failure, ice jam). However, the actual time threshold may vary in different parts of the country. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters" (National Weather Service [NWS] 2009).

[33] MEMA (2018), "SHMCAP"

4.3.6.1 Previous Occurrence and Extent

Table 4.10. Historic Flash Flooding Events and Local Impacts in Montgomery County

Date	Location	Local Impacts	Source
May 22, 2013	Scotch Bush	Flash flooding on Sulphur Springs Road in Florida due to heavy rainfall from showers and thunderstorms. One and a half feet of water swept through a home and caused significant damage to the home.	NOAA NCDC
June 14, 2013	Sprakers	Several roads were closed near Flat Creek due to flash flooding.	NOAA NCDC
June 28, 2013	Canajoharie, St. Johnsville, Fort Plain	Interstate 90 (The New York State Thruway) was closed between exits 29 and 29A. Fifty to one hundred people were trapped in homes and water rescues were needed. Media reported up to two hundred homes were damaged or destroyed by flooding. Every road within Fort Plain was under water and some bridges were damaged or destroyed. One fatality occurred as flood waters swept a woman away from a trailer. A state of emergency was declared.	NOAA NCDC
June 30, 2013	Canajoharie	Roads were washed out and closed because of the flooding.	NOAA NCDC
July 1-2, 2013	Fort Plain and Canajoharie	The Otsquago Creek rose over its banks and impacted a section of Route 80. Multiple roads were washed out and closed and evacuations took place, as homes were impacted by the flood waters. A large section of New York State Route 5 was closed.	NOAA NCDC
June 13, 2014	Fonda, Sprakers, Randall, Tribes Hill	Residents from five homes along Argersinger Road had to be evacuated due to rising flood waters. Currytown Road was closed, and several nearby homes had water in their basements. Media reported that Lusso Road and Borden Road were closed. A mudslide occurred along McDonald Drive, and one home along Noonan	NOAA NCDC

Date	Location	Local Impacts	Source
		Road in Fort Johnson partially collapsed due to flooding and the residents had to be evacuated.	
August 21-22, 2014	Canajoharie, Stone Arabia, Ames, Sprakers, Fort Johnson	Slow moving thunderstorms produced two to four inches of rain across the Mohawk Valley and Sacandaga Region on August 20th. Another batch of thunderstorms on August 21st brought several inches of rain across the central Mohawk Valley, causing small streams to overflow their banks. This led to flash flooding across parts of west-central Montgomery County and northern Schoharie County. At least 15 roads were closed in Montgomery County, including an onramp for the New York State Thruway. A state of emergency was issued due to the flooding. The flooding caused sewage treatment plants to be inundated and a boil water advisory was issued for several days. In some parts of the County, residents had to evacuate their homes. Rainfall totals in the County ranged from 2.41 inches in Hessville to 4.35 inches in Fonda.	NOAA NCDC, NWS
July 19, 2015	Hagaman	Route 30 between Amsterdam and Perth was partially closed due to flood waters.	NOAA NCDC
July 12, 2017	Ames	Heavy rainfall resulted in approximately 6 inches of flowing water over all lanes of Route 10 near the Montgomery/Schoharie County border.	NOAA NCDC
August 4, 2020	Minaville	State Hwy 30 south of Amsterdam from Fuller Road to State Hwy 161 in the town of Florida was closed due to flooding.	NOAA NCDC
July 19, 2021	Fonda	A small creek north of Fonda overflowed its banks causing 6 to 8 inches of water and mud to	NOAA NCDC

Date	Location	Local Impacts	Source
		flow down Broadway (Route 30A) to Main Street (Route 5), causing multiple roads to be closed. The Interstate 90 off-ramps were closed at Exit 28 in the village of Fultonville.	
September 15, 2021	Fort Johnson, Sprakers	Dove Creek was reported out of its bank impacting an area in the vicinity of St. Mary Healthcare, and a trained spotter reported a road closure due to flooding near Route 5S and Sprakers Hill Road.	NOAA NCDC

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4.3.6.2 Locally Identified Areas of Impact

Low-lying areas previously identified in Table 4-5 are all subject to flash floods.

4.3.6.3 Probability of Future Occurrence

The Planning Team has determined that it is **LIKELY** that flash flooding will impact Montgomery County in the future.

4.3.7 Drought

Drought is a period characterized by long durations of below normal precipitation. Drought is a temporary irregularity and differs from aridity since the latter is restricted to low rainfall regions and is a permanent feature of climate. Drought conditions occur in all climatic zones, yet its characteristics vary significantly from one region to another, since it is relative to the normal precipitation in that region. Drought can affect agriculture, water supply, aquatic ecology, wildlife, and plant life. There are four different ways that drought can be defined or grouped:

- ***Meteorological*** drought is a measure of departure of precipitation from normal. It is defined solely by the relative degree of dryness. Due to climatic differences, what might be considered a drought in one location of the country may not be a drought in another location.
- ***Agricultural*** drought links various characteristics of meteorological (or hydrological) drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, reduced ground water or reservoir levels, and other parameters. It occurs when there is not enough water available for a particular crop to grow at a particular time. Agricultural drought is defined in terms of soil moisture deficiencies relative to water demands of plant life, primarily crops.
- ***Hydrological*** drought is associated with the effects of periods of precipitation shortfalls (including snowfall) on surface or subsurface water supply. It occurs when these water supplies are below normal. It is related to the effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.

- ***Socioeconomic*** drought is associated with the supply and demand of an economic good with elements of meteorological, hydrological, and agricultural drought. This differs from the types of drought because its occurrence depends on the time and space processes of supply and demand to identify or classify droughts. The supply of many economic goods depends on weather (for example water, forage, food grains, fish, and hydroelectric power). Socioeconomic drought occurs when the demand for an economic good exceeds supply because of a weather-related shortfall in water supply (National Drought Mitigation Center 2023).

The severity of a drought depends on the degree of moisture deficiency, the duration, and the size and location of the affected area. The longer the duration of the drought and the larger the area impacted, the more severe the potential impacts. The New York State Department of Environmental Conservation (NYSDEC) and the New York State Drought Management Task Force identifies droughts in the following four stages:

- ***Normal*** is considered the standard moisture soil levels found throughout New York State
- ***Drought Watch*** is the first stage of drought. This stage was declared by the NYSDEC and is intended to give advance notice of a developing drought. At this stage, the public is urged to conserve water. Public water purveyors and industries are urged to update and begin to implement individual drought contingency plans.
- ***Drought Warning*** is the second stage of drought. This stage is also declared by the NYSDEC and is a notice of impending and imminent severe drought conditions. A warning declaration includes stepping up public awareness and increasing voluntary conservation. Public water supply purveyors and industries are urged to continue to implement local drought contingency plans. Federal, state, and local water resources agencies are notified to prepare for emergency response measures.
- ***Drought Emergency*** is the third stage of drought. This stage is declared by the NYSDHSES, based upon recommendation of the Task Force. It is a notice of existing severe and persistent drought conditions. An emergency declaration is a notice for local water resources agencies to mandate conservation and implement other emergency response measures. A continuing and worsening drought emergency may result in the New York State governor declaring a drought disaster. It is a notice of the most severe and persistent drought conditions. At this stage, a significant proportion of communities in the impacted area likely are unable to respond adequately.

New York State uses two methodologies to determine the various drought stages. The Palmer Drought Index (PDI) is a commonly used drought indicator and is primarily based on soil conditions. These are typically the first indicators that a moisture deficit is present. These values range from -1 to +5 with positive values indicating wetter conditions and negative values representing drier conditions (NYS DHSES 2014).

The second methodology used by New York State was developed by the NYSDEC and is referred to as the State Drought Index (SDI)[34]. The SDI evaluates drought conditions on a more comprehensive basis by measuring whether numerous indicators reach dire thresholds. The data collected is compared against critical threshold

[34] https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NY

values to show a normal or changeable drought condition. The indicators are weighted on a regional basis to reflect the unique circumstances of each drought management region (NYS DHSES 2014).

Previous Occurrence and Extent

Between 2016 and 2022, New York State has been included in 25 drought-related USDA declarations. The most intense drought for New York occurred in September of 2016 when 10% of New York State was impacted by a D3 (Extreme Drought) level drought. The longest duration drought for New York State was between June 23, 2020, to September 7, 2021, a period of 64 weeks. The most recent Statewide drought declaration was from August to October of 2022, including Montgomery County.

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4.3.7.1 Locally Identified Areas of Impact

New York is divided into nine drought management regions based on watershed and county lines. Montgomery County is included in Drought Region IV Mohawk/ Upper Hudson (Figure 4.2). The entire planning area can be affected by drought, impacting local water resources often requiring voluntary or required restrictions on water use. The New York Drought Management Plan, as part of the New York State Comprehensive Emergency Management Plan[35] was updated in September 2016 because of 2016 drought conditions in New York State. This documents the methodology and coordination process for drought monitoring, response, and recovery.

Input from local communities identified severe drought impacts in the Village of Ames where most residents have dug wells as their water source. Many wells went dry in 2017 forcing residents to drill deeper wells.

[35] NYS Disaster Preparedness Commission (2016), "New Your State Comprehensive Emergency management Plan- Drought Management Coordination Annex ": https://drought.unl.edu/archive/plans/drought/state/NY_2016.pdf

Many jurisdictions within Montgomery County obtains a significant portion of their water supply from groundwater including private and public water supply wells. The New York Water Science Center of the USGS provides local data to monitor streamflow and drought conditions across New York. The USGS maintains the statistics and streamflow information on their Water Watch website,[36] and the DEC Division of Water issues monthly reports of hydrologic conditions, as illustrated by the example in Figure 4.2[37].

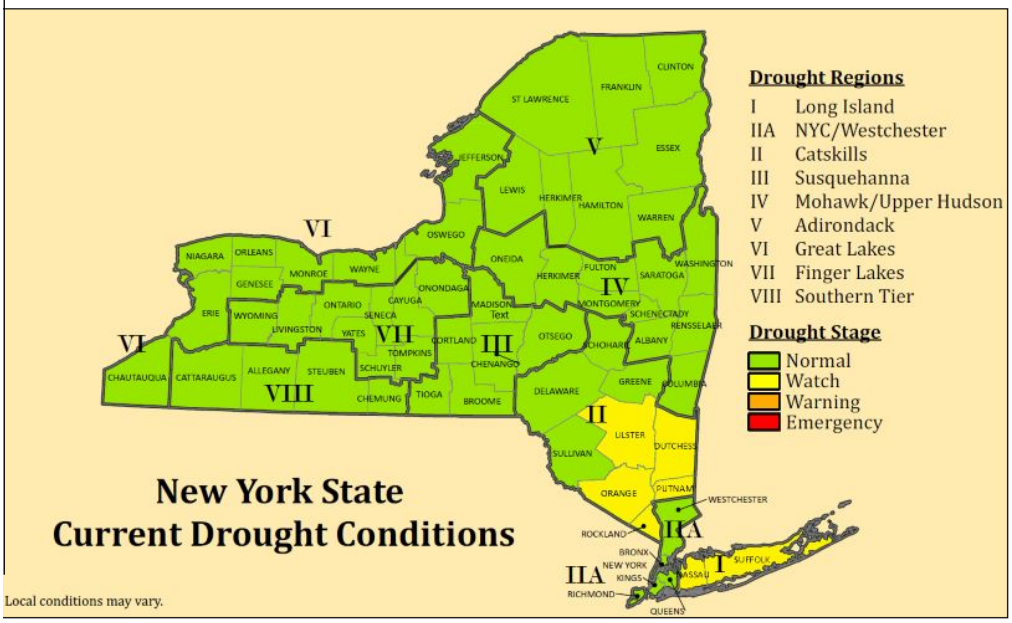

Figure 4.2 New York State Current Drought Conditions- December 2022

Streamflow data obtained from USGS stream gauges on Schoharie Creek at Burtonsville, the Mohawk River at Amsterdam NY and above Fonda, NY , Otsquago Creek at Fort Plain NY, and Canajoharie Creek near Canajoharie[38] provide information on local conditions for Montgomery County that are interpreted in conjunction with data on precipitation, lake and reservoir levels and groundwater by the USGS and NYSDEC to establish the local water conditions.

4.3.7.2 Probability of Future Occurrence

Based on data going back to the year 2000, the probability of each drought level, as identified by the U.S. Drought Monitor for Montgomery County, is shown in **Table 4.11.**

Table 4.11. Frequency of Drought Events

Drought Level	Frequency Since 2000	Probability of Occurrence in each Month
Emergency Drought	0 occurrences	0% chance

[36] http://newengland.water.usgs.gov/drought/index.html
[37] https://www.dec.ny.gov/lands/5011.html#Conditions
[38] https://waterwatch.usgs.gov/index.php?r=ny&m=real

Drought Warning	33 occurrences	2% chance
Drought Watch	243 occurrences	20% chance

The Northeast Drought Early Warning System (DEWS) at the Northeast Regional Climate Center is part of the National Integrated Drought Information System. The Northeast DEWS Dashboard offers an analysis using multiple data sources for a comprehensive look at drought indications and drought early warning updates.[39] As part of this system, drought status updates provide drought tendency outlooks for future monthly and seasonal periods to better prepare northeast partners for future conditions.

4.3.7.3 Drought with Climate Change

Although climate change research suggests that the overall amount of precipitation is likely to increase under future scenarios (Section 4.3), the length of time between rain events is also expected to increase. Increasing summertime temperatures (section 4.4) coupled with little change in summer rainfall are projected to increase the frequency of short term (one-three month) drought.[40] Prolonged dry periods increase the probability of drought conditions.

Climate Central[41] provides a summary of state vulnerability to drought based on the 2018 National Climate Assessment and defined by exposure, sensitivity, and adaptive capacity. *In the States at Risk Summary, the severity of widespread summer drought in New York is projected to more than double by 2050 and triple by 2080.*

The Planning Team determined that based on history of drought events and climate change data provided by the New York Climate Change Science Clearinghouse and other resources, it is **LIKELY** that drought will impact the planning area in the future.

4.3.7.4 Drought Impacts on Montgomery County's Key Sectors

Drought Exposure and Vulnerability by Key Sector[42]	
Built Environment	Drought impacts on elements of the built environment are limited, except to the extent that drought conditions increase the risk of wildfires.
Natural Resources and Environment	Prolonged droughts can have severe impacts on ecosystems and natural resources, as most organisms require water throughout their life cycle. Forests managed for timber or other economic uses could experience reduced growth rates or mortality during periods of drought.
Economy	The economic impacts of drought can be significant in the agriculture, recreation, forestry, and energy sectors. Crop failure can also result in an increase in food prices, placing economic stress on a broader portion of the economy.

[39] http://nedews.nrcc.cornell.edu/

[40] Northeast Climate Impacts Assessment (NECIA, 2007). Confronting Climate Change in the US Northeast- New York

[41] https://www.climatecentral.org/climate-matters/vulnerability-to-drought

[42] MEMA (2018), "SHMCAP"

Drought Exposure and Vulnerability by Key Sector[42]	
Vulnerable Populations	Citizens with a private water supply, such as a well, are more vulnerable to drought than those who receive water through a public provider. Drought can also increase the concentration of airborne pollutants, presenting a health hazard for those with respiratory health conditions like asthma.

4.4 Atmospheric Hazards

4.4 ATMOSPHERIC HAZARDS

4.4.1 Severe Weather-Wind Related Hazards

Severe weather wind related hazards include hurricanes, tropical storms, and tornadoes as well as high winds during severe rainstorms and thunderstorms. The typical wind speed in Montgomery County (Albany data) ranges from 8-11 miles per hours over the course of the year, with peak gusts over 77 mph.[43]

The prevailing wind direction is south and the highest wind speeds occur in June and July. **Figure 4.3** shows the Wind Zones in the United States.[44] The Northeast United States, including Montgomery County, have some of the highest average wind speeds in the contiguous US.

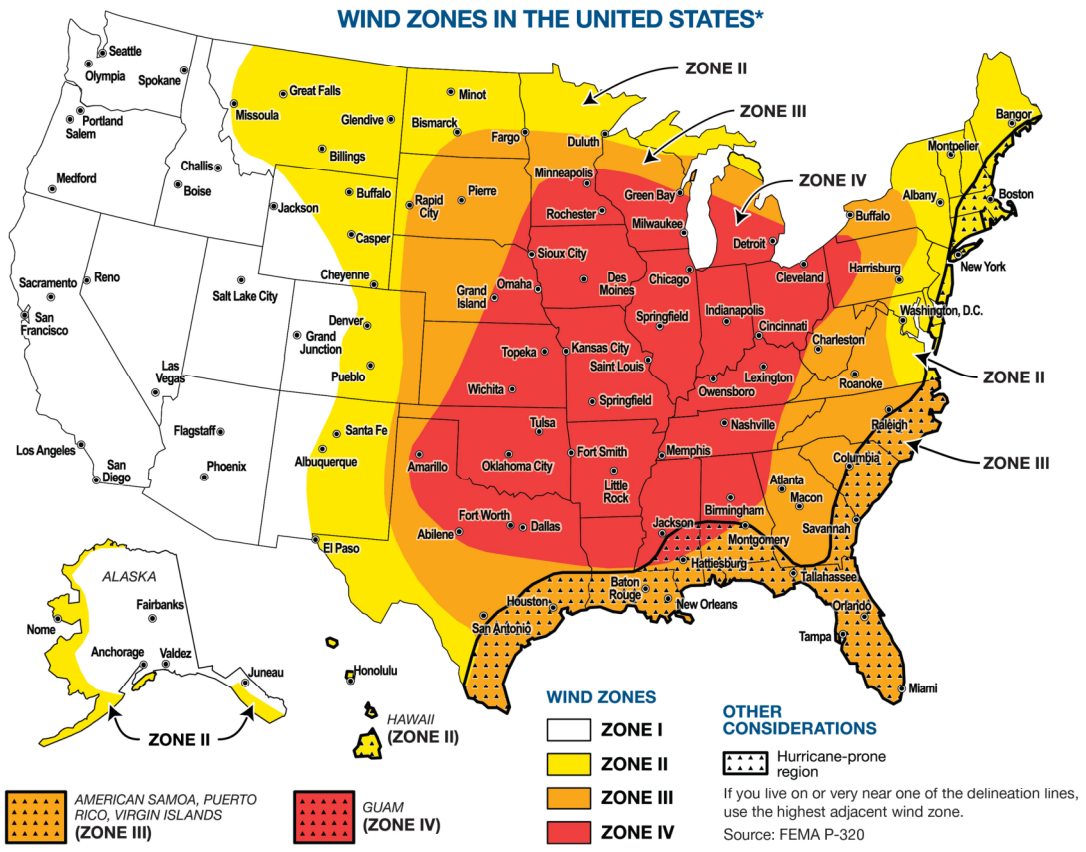

Figure 4.3: Wind Zones in the United States

High winds can occur as an isolated event or accompany other weather events such as:

[43] https://www.ncei.noaa.gov/sites/default/files/2021-09/wind1996.pdf
[44] https://www.ncei.noaa.gov/access/monitoring/wind/

- Before and after frontal systems
- Hurricanes and tropical storms
- Severe thunder and lightning storms
- Tornadoes
- Nor'easters

National wind zone designations were developed by FEMA based on 40 years of tornado history and 100 years of hurricane history. As shown in **Figure 4.3**, Montgomery County lies within Zone II with maximum winds of 160 mph. Montgomery County is in the Hurricane Susceptible Region, which extends along the entire coast from Maine to Florida, the Gulf Coast, and Hawaii.

Table 4.12 includes the high wind warning categories issued by the NWS for both non-tropical and tropical events. Winds measuring under 30 mph are not considered to be hazardous under most conditions.[45]

Table 4.12
NWS High Wind Warning Categories

Type of Warning	Wind Speeds
Non-tropical event over land	
Wind Advisory	Sustained winds of 31-39 mph for at least 1 hour, or any gust 46 to 57 mph
High Wind Warning	Sustained winds 40+ mph or any gust 58+ mph
Non-tropical event over water	
Small Craft Advisory	Sustained winds 25-33 knots
Gale Warning	Sustained winds 24-47 knots
Storm Warning	Sustained winds 48 to 63 knots
Hurricane Force Winds	Sustained winds 64+ knots
Tropical storm events (inland or coastal)	
Tropical Storm Warning	Sustained winds 39 to 73 mph
Hurricane warning	Sustained winds of 74+ mph

Effects from high winds can include downed trees and/or power lines, damage to structures, etc. This is especially true after periods of heavy snow, rain, or prolonged drought due to the weakening of tree branches and roots. High winds can cause scattered power outages and are a hazard for the boating, shipping, and aviation industry sectors. A more specific discussion on severe weather and high wind events impacting Montgomery County follows.

[45] MEMA (2018), "SHMCAP"

4.4.2 Hurricanes/ Tropical Storms

A tropical cyclone is a rotating, organized system of clouds and thunderstorms that originate over tropical or subtropical water. The 4 types of tropical cyclones are classified as follows:

- **Tropical Depression:** A tropical cyclone with maximum sustained winds of 38 mph (33 knots) or less.
- **Tropical Storm:** A tropical cyclone with maximum sustained winds of 39 to 73 mph (34 to 63 knots).
- **Hurricane:** A tropical cyclone with maximum sustained winds of 74 mph (64 knots) or higher.
- **Major Hurricane:** A tropical cyclone with maximum sustained winds of 111 mph (96 knots) or higher, corresponding to Category 3, 4 or 5 on the Saffir-Simpson Hurricane Wind Scale.

Hurricanes are characterized by high winds and extratropical moisture resulting in torrential rainfall, especially if the storm is slow moving. The rotational nature of hurricanes often results in winds changing direction as the storm passes, altering wave generation and surge setup.

A hurricane is strongest as it travels over the ocean and is particularly destructive to coastal property as storms hit the land. In the Atlantic Basin, the hurricane season runs from June 1 to November 30 with peak activity occurring in early to mid-September.[46]

Hurricanes are classified by the Saffir-Simson Scale, which categorizes intensity linearly based upon maximum sustained winds, barometric pressure, and storm surge potential. **Table 4-13** shows the wind speeds, surges, and range of damage caused by different hurricane categories:

Table 4-13. Saffir/Simson Scale to Measure Hurricane Intensity

Scale No. (Category)	Winds (mph)	Surge (ft.)	Potential Damage
1	74-95	4-5	Minimal
2	96-110	6-8	Moderate
3	111-130	9-12	Extensive
4	131-155	13-18	Extreme
5	>155	>18	Catastrophic

4.4.2.1 Previous Occurrence and Extent

Since 1842, Montgomery County has encountered two Tropical Storms (David – August 1979 and Unnamed Tropical Storm/Tropical Depression – September 1929) and one Extratropical Storm (Unnamed – September 1876) according to NOAA's Historical Hurricane Tracks database[47]. Figure 4.4 displays tropical cyclone tracks for Montgomery County that tracked within 60 nautical miles between 1842 and 2021.

[46] National Hurricane Center Educational Resources http://www.nhc.noaa.gov/climo/

[47] https://coast.noaa.gov/hurricanes/#map=4/32/-80

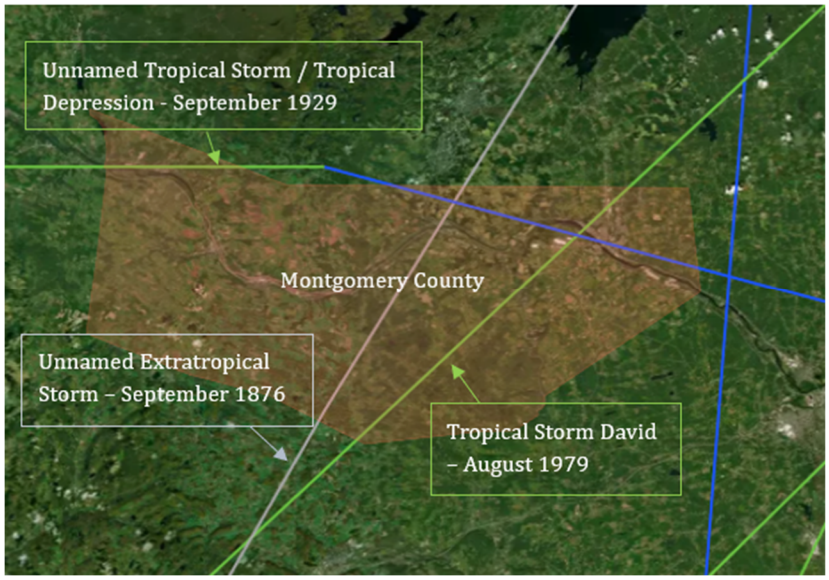

Figure 4.4 Historical Tropical Storm and Hurricane Tracks 1842 to 2021

New York State has a long history of tropical cyclones with direct and indirect hits felt along the coast and areas of New York City and Long Island. However, the entire state can be affected by these storms. Historically, the 1938 New England Hurricane, a Category 3 Hurricane, was the strongest storm to have affected Long Island[48]. More recently, Hurricanes Isabel (2003), Frances (2004), Bill (2009), Irene (2011), and Sandy (2012) have caused the most severe effects throughout the state resulting in large economic losses, tens of thousands of homes being destroyed, tens of millions of people to lose power, extensive damage to infrastructure, significant coastal erosion, and over 70 deaths.

While historic records include 127 tropical storms and hurricanes for New York, only five events have resulted in FEMA hurricane-related disasters for Montgomery County as listed in Table 4.14.

Table 4.14. FEMA Hurricane-Related Declared Disasters Impacting Montgomery County

FEMA Disaster #	Name	Date	Category
EM-3262	Hurricane Katrina Evacuation	August 29 – October 1, 2005	Cat 5
DR-4020	Hurricane Irene	August 26 – September 5, 2011	Cat 3
EM-3341	Remnants of Tropical Storm Lee	September 7 – 11, 2011	Tropical Storm
EM-3351	Hurricane Sandy	October 27 – November 8, 2021	Cat 3
EM-3565	Hurricane Henri	August 21 – 24, 2021	Cat 1

[48] 2019 NYSHMP

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4.4.2.2 Locally Identified Areas of Impact

The three storm events that significantly impacted Montgomery County were Hurricane Sandy, Hurricane Irene, and Tropical Storm Lee. Severe flooding from heavy rain in Mohawk Valley because of Hurricane Irene closely followed by Tropical Storm Lee, displaced over 150 people, and caused widespread damage. Critical infrastructure was rendered inaccessible due to power outages and washed-out roads and bridges. Additionally, storm sewers were overwhelmed with clogged debris. Based on history, the Planning Team determined the entire planning area is at risk for impacts due to hurricanes and tropical storms.

4.4.2.3 Probability of Future Occurrence

The Northeast averages about one hurricane per decade, but there is some evidence that more and stronger hurricanes occur when Atlantic Sea-Surface-Temperatures are warm. While the science of global warming and hurricanes is evolving, present research calls for slightly stronger and wetter storms, but changes in frequency are unknown. Based on the past regional and local history of tropical cyclones, the Planning Team determined that it is **LIKELY** that a hurricane or tropical storm will impact the area in the future**.**

4.4.2.4 Hurricane Impacts on Montgomery County's Key Sectors

Hurricane Exposure and Vulnerability by Key Sector[49]	
Built Environment	Hurricane flooding can also wash out sections of roadways and bridges, as well as cause extensive damage to public utilities and disruptions to the delivery of services. Hurricane wind can down trees and powerlines and damage buildings.
Natural Resources and Environment	As the storm is occurring, flooding, or wind – or water-borne detritus can cause mortality in animals if it strikes them or transports them to a non-suitable habitat. In the longer term, environmental impacts can occur because of riverbed scour, fallen trees, or contamination of ecosystems by transported pollutants.
Economy	Hurricanes and severe winter storms, can impact the economy, including loss of business function (e.g., tourism, recreation), damage to inventory, relocation costs, wage loss, road repair, and rental loss due to the repair/replacement of buildings.
Vulnerable Populations	Of the population exposed, the most vulnerable include the economically disadvantaged and population over the age of 65. Economically disadvantaged populations are more likely to evaluate the economic impact of evacuating, and individuals over 65 are more likely to face physical challenges in evacuating or to require medical care while evacuated.

4.4.3 Severe Winter Storms: Snow and Ice

Severe Winter Weather includes snowstorms, blizzards, and ice storms. A winter storm occurs when there is significant precipitation during periods of low temperatures. Winter storms are a combination of hazards because they often involve wind, ice, and heavy snow fall.

[49] MEMA (2018), "SHMCAP"

Winter storms can occur from early autumn to late spring and include any of the following events:[50]

- Blizzards
- Blowing snow
- Snow squalls
- Ice pellets and sleet
- Icing
- Coastal flooding
- Snow showers and flurries
- Snow melt
- Ice jams and flow

Impacts from winter weather – in addition to non-passable streets and sidewalks – include downed power lines causing loss of electric power service, catch basins being buried and sometimes clogged, water service pipes bursting and shut-off valves being buried (more common when cold and windy), fire hydrants being buried by snow, older water mains bursting, and dangerous icicles forming on buildings. Snow can also block building ventilation, increasing the risk of indoor carbon monoxide poisoning and place a heavy load on roofs.

4.4.3.1 Previous Occurrence and Extent

Snow and other forms of winter precipitation occur frequently in Montgomery County, with a normal 30-year average between 60-100 inches per year as shown in **Figure 4.5**.[51]

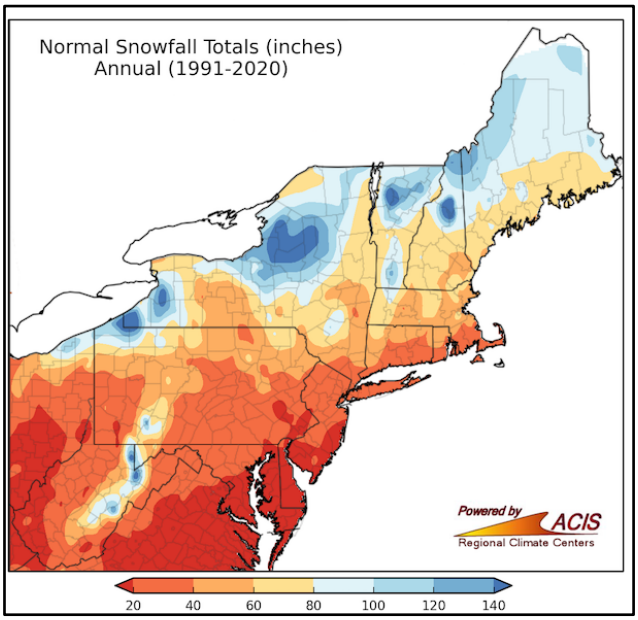


Figure 4.5: Normal Annual Snow Totals

According to the NOAA Storm Event Database, Montgomery County has encountered the following winter storm events in the last decade:

- 9 days of heavy snow,
- 1 ice storm,
- 13 winter storms, and
- 44 days of winter weather.

Between 1954 and 2022, FEMA included New York State in 24 winter storm-related major disaster (DR), or emergency (EM) declarations classified as one or a combination of the following disaster types: severe winter storm, snowstorm, snow, ice storm, winter storm, blizzard, and flooding. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. Montgomery County was included in three of these declarations as listed in **Table 4.15**.

[50] http://www.nws.noaa.gov/om/winter/index.shtml
[51] http://www.nrcc.cornell.edu/regional/climatenorms/climatenorms.html

Table 4.15. FEMA Winter Storm-Related Declared Disasters Impacting Montgomery County

FEMA disaster #	Hazard	Date(s)	Description
EM-3107	Severe Blizzard	March 13 – 17, 1993	Nicknamed as the "Storm of the Century," a severe blizzard set record cold, snow, and wind along the Eastern Seaboard.
EM-3173	Snowstorm	December 25 – January, 2003	A severe nor'easter that produced heavy snowfall and was amongst the largest early-season winter storms on record to affect the East Coast.
EM-4322	Severe Winter Storm and Snowstorm	March 14 – March 15, 2017	A severe nor'easter caused heavy snow to spread across central New York and Pennsylvania along with lake effect snow bands.

4.4.3.2 Locally Identified Areas of Impact

Winter storms represent a high frequency, serious severity hazard for Montgomery County. Based on its annual total snowfall, there is an approximately 15% chance of a winter storm event occurring annually. Winter storms are dangerous to the entire population, as the accumulation of snow and ice along with high winds can impact public safety as well as the local economy by disrupting transportation and commercial activities. The buildup of snow and ice on roadways also makes for dangerous travelling conditions. The accumulation of snow and ice on trees and power lines can cause them to sag and break, potentially closing roadways and cutting off electricity to homeowners and businesses. The accumulation of heavy snow over a long period of time can affect structures with flat roofs, as the weight of heavy snow can cause them to collapse. The entire community is vulnerable to the impacts of winter storms.

4.4.3.3 Probability of Future Occurrence

According to NESIS data, 86 winter storms rated as "notable" or higher have occurred since 1956[52]. Therefore, although there is significant interannual variability in the frequency and severity of winter storms, this hazard should be expected to occur every winter. [53] Severe winter storms are of significant concern to Montgomery County because of the frequency and magnitude of these events in the region, the direct and indirect costs associated with these events, delays caused by the storms, and impacts on the people and facilities of the region related to snow and ice removal, health problems, cascade effects such as utility failure (power outages) and traffic accidents, and stress on community resources. Climate change impacts are predicted to increase the severity of winter storms because changing circulation patterns and warming ocean water allowing additional moisture to fuel the storm to greater intensity. Based on the past record, the Planning Team concludes that it is **HIGHLY LIKELY** that severe winter weather will impact Montgomery County in the future.

[52] https://www.ncei.noaa.gov/access/monitoring/rsi/nesis

4.4.3.4 Severe Winter Storm Impacts on Montgomery County's Key Sectors

Severe Winter Storm Exposure and Vulnerability by Key Sector[54]	
Built Environment	All elements of the built environment in Montgomery County are exposed to the severe winter weather hazard.
Natural Resources and Environment	Winter storms are a natural part of the New York climate, and native ecosystems and species are well-adapted to these events. However, more extreme winter storms can result in direct mortality, habitat modification, and flooding when snow and ice melt, especially in areas with high road salt applications.
Economy	Potential impacts from winter storms include loss of utilities, interruption of transportation corridors, loss of business function and loss of income during business closures. The cost of snow and ice removal and repair of roads from the freeze/thaw process can also strain local financial resources.
Vulnerable Populations	Populations over 65 are considered most susceptible due to their increased risk of injury and death from falls and overexertion and/or hypothermia from attempts to clear snow and ice or related to power failures. Residents with low incomes may not have access to housing or their housing may be less able to withstand cold temperatures (e.g., homes with poor insulation and heating supply).

4.4.4 Extreme Temperatures

4.4.4.1 Cold Wave

Extreme cold events are when temperatures drop well below normal in an area. In regions unaccustomed to winter weather, near freezing temperatures are considered "extreme cold." Extreme cold temperatures are characterized by the ambient air temperature dropping to approximately 0 degrees Fahrenheit (ºF) or below (National Weather Service [NWS] 2011). Extensive exposure to extreme cold temperatures can cause frostbite or hypothermia and can become life-threatening. Infants and the elderly are most susceptible to the effects of extreme changes in temperatures. Extreme cold also can cause emergencies in susceptible populations, such as those without shelter, those who are stranded, or those who live in a home that is poorly insulated or without heat (such as mobile homes). Infants and the elderly are particularly at risk, but anyone can be affected (Centers of Disease Control and Prevention [CDC] 2007). In New York State, extreme cold days are defined to reflect the State's regional climate variations. Extreme cold days in the State are individual days with minimum temperatures at or below 32° F or 0° C (NYSERDA 2011).

There are several health hazards related to extreme cold temperatures and include wind chill, frostbite, and hypothermia.

[54] MEMA (2018), "SHMCAP"

- Wind chill is not the actual temperature but rather how wind and cold feel on exposed skin. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature.
- Frostbite is damage to body tissue caused by extreme cold. A wind chill of -20°F will cause frostbite in just 30 minutes. Frostbite can cause a loss of feeling and a white or pale appearance in extremities.
- Hypothermia is a condition brought on when the body temperature drops to less than 95°F and it can be deadly. Warning signs of hypothermia include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion.

4.4.4.2 Heat Wave

Extreme heat is defined as temperatures which hover 10 degrees or more above the average high temperature for a region and that last for several weeks (CDC 2009). Humid or muggy conditions occur when a 'dome' of high atmospheric pressure traps hazy, damp air near the ground. An extended period of extreme heat of three or more consecutive days is typically called a heat wave and is often accompanied by high humidity (NWS 2013). In New York State, high temperatures and heat waves are defined in several ways to reflect the diversity of conditions experienced across the State. Extreme hot days in New York State are defined as individual days with maximum temperatures at or above 90° F or at or above 95° F. Heat waves are defined as three consecutive days with maximum temperatures above 90° F (NYSERDA 2011).

Depending on severity, duration and location; extreme heat events can create or provoke secondary hazards including, but not limited to, dust storms, droughts, wildfires, water shortages and power outages (CDC 2009). This could result in a broad and far-reaching set of impacts throughout a local area or entire region. Impacts could include significant loss of life and illness; economic costs in transportation, agriculture, production, energy, and infrastructure; and losses of ecosystems, wildlife habitats and water resources (Adams Date Unknown; Meehl and Tebaldi 2004; CDC 2009; NYS DHSES 2014).

4.4.4.3 Previous Occurrence and Extent

The extent (severity or magnitude) of extreme cold temperatures can be measured through the Wind Chill Temperature Index (**Figure 4.6**). Wind Chill Temperature is based on the rate of heat loss from exposed skin by the effects of wind and cold. As the wind increases, the body loses heat at a faster rate, causing the skin's temperature to drop.

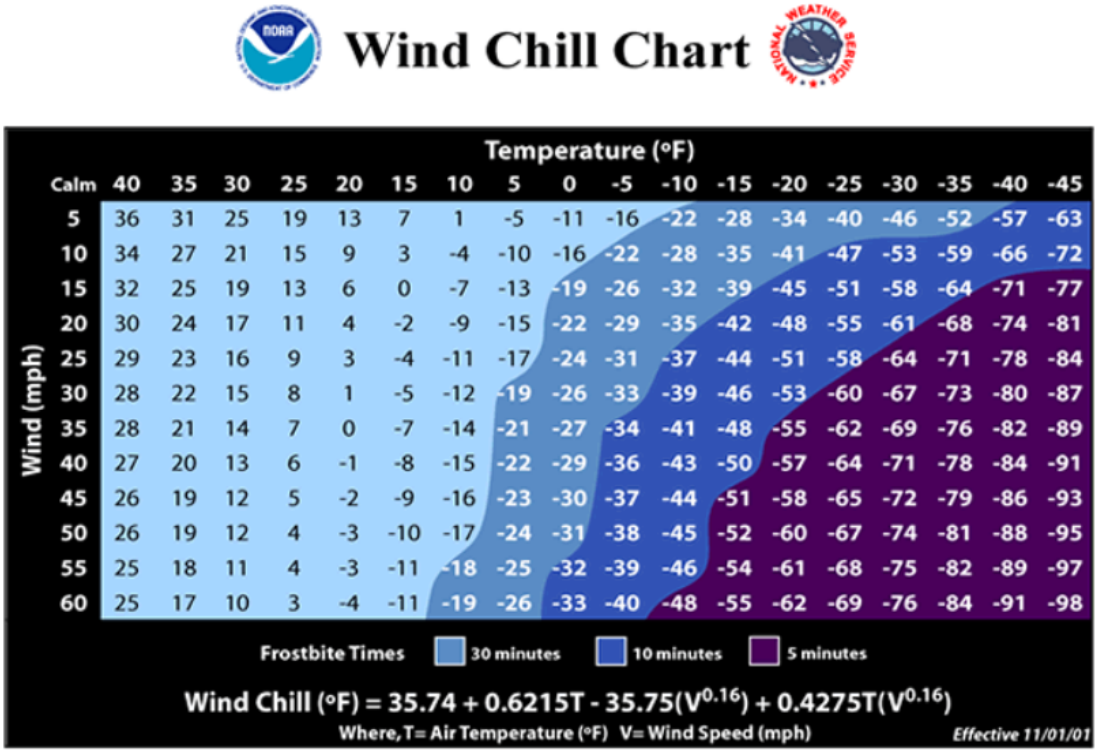


Figure 4.6: NOAA Wind Chill Index[55]

When winter temperatures drop significantly below normal, staying warm and safe can become a challenge. Extremely cold temperatures often accompany a winter storm, which may also cause power failures, icy roads and freezing ice in rivers, streams, and lakes.

Cold weather also can present hazards indoors. Many homes will be too cold, either due to a power failure or because the heating system is not adequate for the weather. Exposure to cold temperatures, whether indoors or outside, can cause other serious or life-threatening health problems. The use of space heaters and fireplaces to stay warm, and/or the use of generators and candles in power outages, increases the risks of residential fires and carbon monoxide poisoning.

The extent of extreme heat is documented by the National Weather Service (NWS) Heat Index. The NWS issues a Heat Advisory when the Heat Index is forecast to reach 100-104°F for 2 or more hours. The NWS issues an Excessive Heat Warning if the Heat Index is forecast to reach 105+ °F for 2 or more hours. The Heat Index describes a temperature that the body feels and is based both on temperature and relative humidity (**Figure 4.7**). A heat wave is defined as 3 or more days of temperatures 90°F or above.

[55] NOAA Wind Chill Index: http://www.nws.noaa.gov/om/cold/wind_chill.shtml

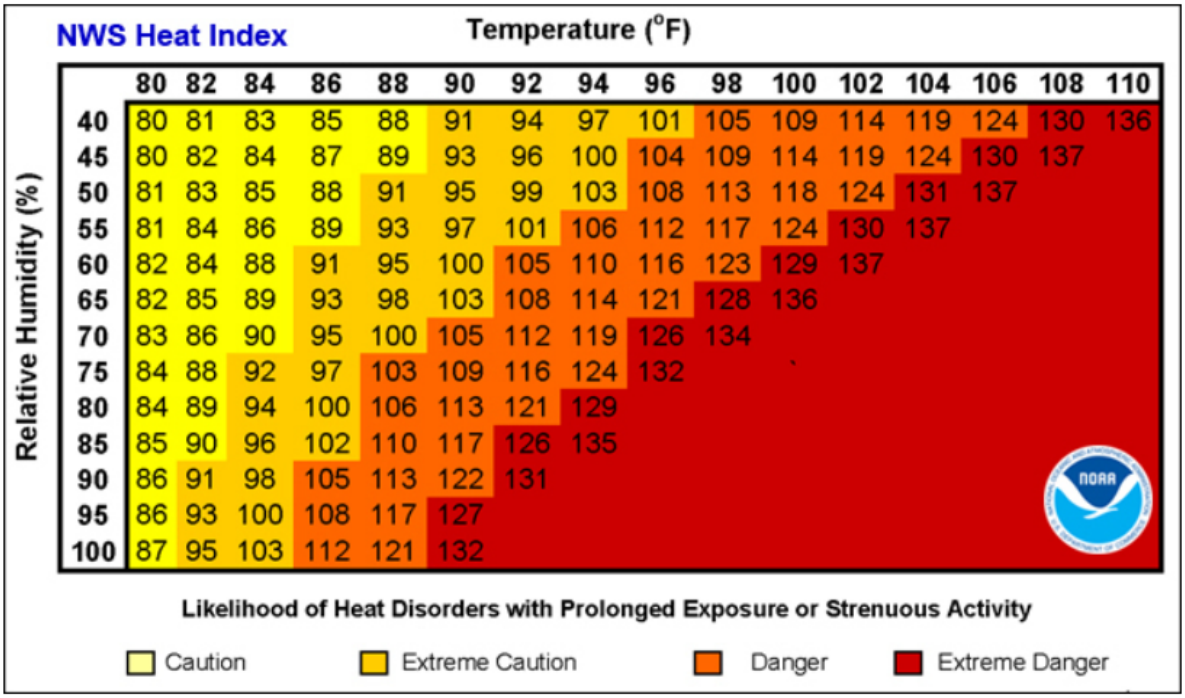


Figure 4.7: NOAA Heat Index[56]

Extreme heat is currently the leading weather-related cause of death in the United States.[57] Prolonged exposure to high temperatures can cause heat-related illnesses, such as heat cramps, heat syncope, heat exhaustion, heat stroke, and death. Heat exhaustion is the most common heat-related illness and if untreated, it may progress to heat stroke. Additionally, heat is expected to contribute to the exacerbation of chronic health conditions.[58] In particular, hyperthermia—elevated body temperature due to failed thermoregulation can be caused by heat stroke — is a contributing factor to cardiovascular, metabolic, and other causes of death.[59]

Those at particularly high risk of adverse health effects from extreme heat exposure are older adults, children, those living alone and/or with chronic illnesses, urban residents, minorities, lower income families, people with less education, and people without access to air conditioning. In addition, people with chronic mental disorders or pre-existing medical conditions (e.g., cardiovascular disease, obesity, diabetes, neurologic or psychiatric disease), and those participating in outdoor manual labor or sports in hot weather also are at increased risk for heat-related illness.[60] Extreme heat adversely impacts utility companies that may struggle

[56] NOAA Heat Index: http://www.nws.noaa.gov/om/heat/heat_index.shtml
[57] Luber, G., & McGeehin, M. (2008b), "Climate change and extreme heat events." American Journal of Preventive Medicine, 35(5), 429–435. http://doi.org/10.1016/j.amepre.2008.08.021
[58] Kravchenko, J., Abernethy, A. P., Fawzy, M., & Lyerly, H. K. (2013). "Minimization of heat wave morbidity and mortality." American Journal of Preventive Medicine, 44(3), 274–282. http://doi.org/10.1016/j.amepre.2012.11.015
[59] O'Neill, M. S., & Ebi, K. L. (2009). "Temperature Extremes and Health: Impacts of Climate Variability and Change in the United States." Journal of Occupational and Environmental Medicine, 51(1), 13–25. https://pubmed.ncbi.nlm.nih.gov/19136869/
[60] Holstein, J., Canouï-Poitrine, F., Neumann, A., Lepage, E., & Spira, A. (2005), "Were less disabled patients the most affected by 2003 heat wave in nursing homes in Paris, France?" Journal of Public Health (Oxford, England), 27(4), 359–365.

meet the extra demand created by operation of air conditioners. Brown outs may result in secondary impacts to vulnerable populations.

According to NOAA National Centers for Environmental Information (NCEI) data, the entire area is vulnerable to extreme temperatures. For the past decade, New York has been reporting up to 4ºF warmer than the 20th Century Average[61]. Figure 4.8 and Figure 4.9 depict the trend of annual maximum and minimum temperatures from 1895 to 2022 for Montgomery County.

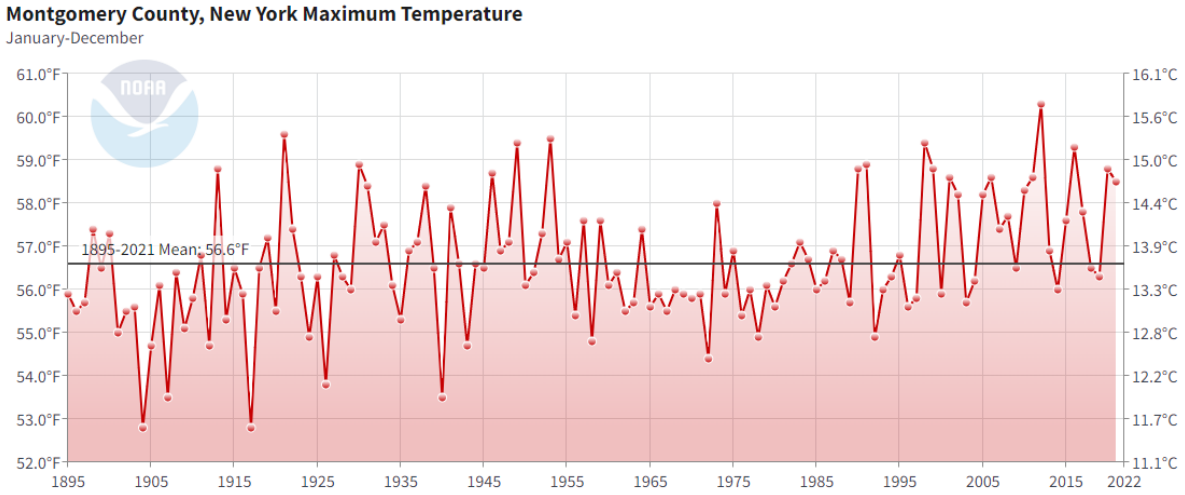


Figure 4.8.: Annual Maximum Temperatures for Montgomery County, New York (1895 – 2022)[62]

[61] https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series/NY-057/tmax/ann/10/1895-2022?base_prd=true&begbaseyear=1895&endbaseyear=2022

[62] NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published November 2022, retrieved on November 14, 2022 from https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series

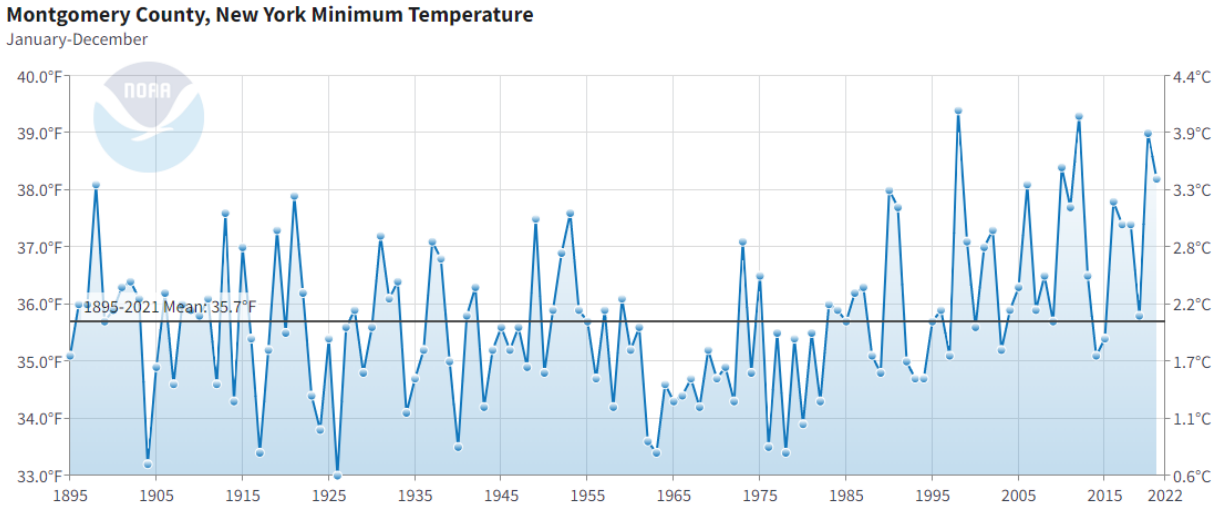


Figure 4.9.: Annual Minimum Temperatures for Montgomery County, New York (1895 – 2022)

According to the Northeast Regional Climate Center at Cornell University, 2012 was the warmest year in the US to date, and the third hottest summer. Extreme heat for Montgomery County is most common in July with the record high of 88.7ºF set in July 1955. Extreme cold temperatures are most common in January-February with the lowest recorded temperatures being –4.8ºF in February 1934.

Table 4.16 shows the recent history of extreme temperatures for Montgomery County from the New York Climate Change Science Clearinghouse[63]. A total of 9.3 days were reported with temperatures above 90 ºF with no days above 100 ºF. A total of 437 days were reported with temperatures less than 32 ºF with 33.2 days less than 0 ºF.

Table 4.16. Annual Extreme Temperatures for Montgomery County 1990s – 2010s

Year	Number of days > 90°F	Number of days > 100°F	Number of days < 32°F	Number of days < 0 °F
1990s	3	0	147	12.3
2000s	2.1	0	145.1	11.9
2010s	4.2	0	144.9	9.0

4.4.4.4 Locally Identified Areas of Impact

Extreme heat has occurred in Montgomery County. The entire planning area is at risk for impacts due to extreme temperatures.

[63] https://climate.earthathome.org/other-resources/ny-climate-change-science-clearinghouse/

4.4.4.5 Probability of Future Occurrence

The IPCC forecasts temperatures continuing to increase worldwide during the 21st century due to the current GHG emissions trajectory. The latest scenarios from the 2015 United Nations Paris Climate Summit for average temperature changes across all RCP greenhouse gas emissions scenarios show a continuation of increased global temperatures. The average annual temperature in New York has warmed 3 degrees Fahrenheit (°F) since 1970 which is 0.6°F per decade. The state's average temperature is projected to increase 4.1-6.8°F by the 2050s and 5.3-10.1°F by the 2080s according to New York's Responding to Climate Change in New York State (ClimAID) report (2011, 2014)[64]. The greatest warming is projected to be in the northern parts of the state with summers becoming warmer and winters milder.

The more recent New York Statewide Climate Projections shown in **Table 4.17** are consistent with these findings. Montgomery County is expected to experience increased average temperatures throughout the 21st century[65]. Maximum and minimum temperatures are also expected to increase throughout the end of the century. These increased temperature trends are expected for annual and seasonal projections.

Table 4.17. Seasonal and Annual Temperature Projections for Montgomery County

Montgomery County		Observed Baseline 1980-2009 (°F)	Projected Change in 2030s (°F)	Mid-Century Projected Change in 2050s (°F)	Projected Change in 2070s (°F)	End of Century Projected Change in 2090s (°F)
Average Temperature	Annual	46.8	+3 to +3.2	+4.3 to +5.4	+5.3 to +8	+5.9 to +10.4
	Winter	24.3	+3 to +3.2	+4.3 to +5.5	+5.4 to +8.2	+6.1 to +10.6
	Spring	45.0	+2.3 to +2.4	+3.6 to +4.5	+4.5 to +6.7	+5.1 to +9
	Summer	68.0	+3.2 to +3.6	+4.6 to +5.8	+5.8 to +8.7	+6.2 to +11.3
	Fall	49.6	+3.4 to +3.7	+4.7 to +5.7	+5.6 to +8.2	+6.1 to +10.6
Maximum Temperature	Annual	56.9	+2.9 to +3.1	+4.2 to +5.3	+5.2 to +7.9	+5.8 to +10.2
	Winter	33.1	+2.3 to +2.5	+3.5 to +4.5	+4.5 to +7	+5.1 to +9.1
	Spring	55.8	+2 to +2.1	+3.4 to +4.3	+4.3 to +6.6	+5 to +8.8
	Summer	78.8	+3.7 to +4.1	+5.2 to +6.5	+6.5 to +9.5	+6.9 to +12.2
	Fall	59.5	+3.4 to +3.7	+4.8 to +5.8	+5.6 to +8.5	+6.2 to +10.7
Minimum Temperature	Annual	36.7	+3.1 to +3.3	+4.4 to +5.5	+5.4 to +8.1	+5.9 to +10.5
	Winter	15.5	+3.6 to +3.9	+5.2 to +6.5	+6.4 to +9.4	+7.1 to +12.1
	Spring	34.2	+2.5 to +2.6	+3.7 to +4.7	+4.6 to +6.9	+5.2 to +9.2
	Summer	57.2	+2.7 to +3.1	+4 to +5.1	+5.1 to +7.9	+5.5 to +10.5
	Fall	39.6	+3.3 to +3.7	+4.7 to +5.6	+5.6 to +8	+5.9 to +10.4

[64] https://www.nyserda.ny.gov/climaid

[65] https://climate.earthathome.org/other-resources/ny-climate-change-science-clearinghouse/

Seasonally, maximum summer and fall temperatures are expected to see the highest projected increase throughout the 21st century.

- Summer mid-century increase of 5.2 °F to 6.5 °F (6.5 – 8% increase); end of century increase of 6.9 °F to 12.2 °F (9-15% increase).
- Fall mid-century increase of 4.8°F to 5.8°F (8% - 10% increase); end of century increase of 6.2°F to 10.7°F (10% - 18% increase).

Seasonally, minimum winter and fall temperatures are expected to see increases throughout the 21st century.

- Winter mid-century increase of 5.2°F to 6.5°F (34% - 42% increase), end of century increase of 7.1°F to 12.1°F (46% - 78% increase).
- Fall mid-century increase of 4.7°F to 5.6°F (12% - 14% increase), end of century increase of 5.9°F to 10.4°F (15% - 26% increase).

Based on historic data and local projections, the Planning Team determined that it is **HIGHLY LIKELY** that extreme temperatures will impact the planning area.

4.4.4.6 Extreme Temperature Impacts on Montgomery County's Key Sectors

Average and Extreme Temperature Exposure and Vulnerability by Key Sector[66]	
Built Environment	Extreme heat events can sometimes cause short periods of utility failure due to increased usage of air conditioners and other appliances. Heavy snowfall and ice storms, associated with extreme cold temperature events, can also cause power interruption. Backup power is recommended for critical facilities and infrastructure.
Natural Resources and Environment	Because the species that exist in a given area are designed to survive within a specific temperature range, extreme temperatures events can place significant stress both on individual species and ecosystems. Warming temperatures across the globe force species poleward, or upward in elevation, while species that cannot relocate fast enough face local extinction.
Economy	Extreme temperature events can have significant economic impacts, including loss of business function and damage/loss of inventory. The agricultural industry is the industry most at risk in terms of economic impact and damage due to extreme temperature and drought events.
Vulnerable Populations	Populations that are most at risk to extreme cold and heat events include individuals aged over 65, infants and young children, individuals who are physically ill, low-income individuals who cannot afford proper heating and cooling, and those whose jobs involve exposure to extreme temperature events.

4.4.5 Hail

Hail forms inside a thunderstorm where there are strong updrafts of warm air and downdrafts of cold water. If a water droplet is picked up by the updrafts, it can be carried well above the freezing level. Water droplets

[66] MEMA (2018), "SHMCAP"

freeze when temperatures reach 32°F or colder. As the frozen droplet begins to fall, it may thaw as it moves into warmer air toward the bottom of the thunderstorm. However, the droplet may be picked up again by another updraft and carried back into the cold air and re-freeze. With each trip above and below the freezing level, the frozen droplet adds another layer of ice. The frozen droplet, with many layers of ice, falls to the ground as hail. Most hail is small and typically less than two inches in diameter (NOAA and NWS, Date Unknown).

4.4.5.1

The severity of hail is measured by duration, hail size, and geographic extent. All of these factors are directly related to thunderstorms, which creates hail. There is wide potential variation in these severity components. The most significant impact of hail is damage to crops. Hail also has the potential to damage structures and vehicles during hailstorms.

Hail can be produced from many different types of storms. Typically, hail occurs with thunderstorm events. The size of hail is estimated by comparing it to a known object. Most hailstorms are made up of a variety of sizes, and only the very largest hail stones pose serious risk to people, when exposed. **Table 4.18** shows the different sizes of hail and the comparison to real-world objects.

Table 4.18. Relational Dimensions of Hail

Size	Inches in Diameter
Pea	0.25 inch
Marble / Mothball	0.50 inch
Dime / Penny	0.75 inch
Nickle	0.875 inch
Quarter	1.0 inch
Ping-Pong Ball	1.5 inches
Golf Ball	1.75 inches
Tennis Ball	2.5 inches
Baseball	2.75 inches
Teacup	3.0 inches
Grapefruit	4.0 inches
Softball	4.5 inches

Source: NOAA and NWS, Date Unknown; NYS DHSES 2014

Previous Occurrence and Extent

In New York State, hailstorms can occur anywhere within the State independently or during a tornado, thunderstorm, or lightning event.

According to the NOAA NCEI Storm Events Database, 7 days of hailstorm event have been reported in Montgomery County since 2012 (**Table 4.19**). The magnitude of the event is the reported estimated size in diameter of hailstones, which ranged between 0.75 inches and 4 inches in the last ten years.

Table 4.19
Location and Magnitude of Hail Events in Montgomery County

Location	Date	Magnitude (inches)
Fonda, Fultonville, Glen	September 23, 2012	0.88 to 2.50
Hagaman, Amsterdam, Fort Johnson, South Amsterdam, Scotch Bush	May 22, 2014	1.00 to 4.00
Saint Johnsville	July 3, 2014	1.00
Saint Johnsville	May 18, 2017	1.50
Hagaman	October 7, 2020	0.75
Canajoharie	August 13, 2021	0.88
Fultonville	September 15, 2021	0.88 to 1.00

4.4.5.2 Locally Identified Areas of Impact

Hail events have occurred in Montgomery County. The entire planning area is at risk of impacts due to hail.

4.4.5.3 Probability of Future Occurrence

The Planning Team has determined that it is **LIKELY** that hailstorms will impact Montgomery County in the future.

4.4.6

4.4.7 Tornadoes, High Winds and Thunderstorms

4.4.7.1 Tornadoes

A tornado is a violently rotating column of air extending from a cumuliform cloud, such as a thunderstorm, to the ground. Tornadoes are not always visible as funnel clouds because they may appear transparent until they pick up dust and debris. The average tornado moves from southwest to northeast, but they can move in any direction and can suddenly change direction. The average speed of a tornado is 30 mph, but they can be stationary or move as fast as 70 mph. The strongest tornadoes have rotating winds of more than 200 mph.[67] **Table 4.20** shows the Enhanced Fujita Tornado Damage Scale developed by T. Theodore Fujita.[68]

Table 4.20. Enhanced Fujita Scale Levels and Description of Damage

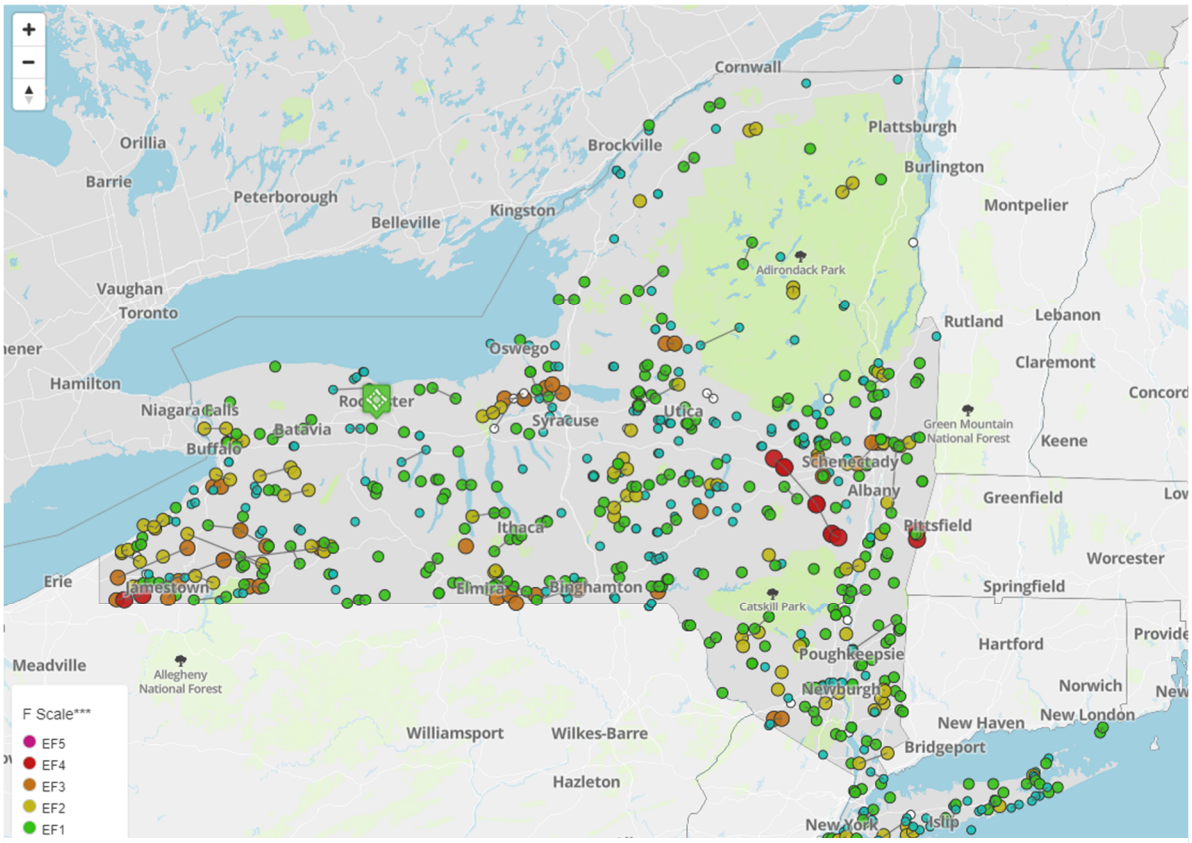
EF-Scale Number	Intensity Phrase	3-Second Gust (MPH)	Type of Damage Done
EF0	Gale	65-85	Some damage to chimneys; breaks branches off trees; shallow rooted trees pushed over; sign boards damaged
EF1	Moderate	86-110	Peels surfaces off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.

[67] Thunderstorms, Tornadoes, Lightning: Nature's Past Violent Storms, A Preparedness Guide, US Department of Commerce, NOAA, and the National Weather Service
[68] http://www.spc.noaa.gov/efscale/

EF-Scale Number	Intensity Phrase	3-Second Gust (MPH)	Type of Damage Done
EF2	Significant	111-135	Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
EF3	Severe	136-165	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
EF4	Devastating	166-200	Well-constructed houses leveled; structures with weak foundations blown off some distances; cars thrown, and large missiles generated.

4.4.7.2 Previous Occurrence and Extent

Montgomery County has not been as severely impacted by tornados compared to other counties in New York. Since 1950, there have been 10 tornados in Montgomery County with the most recent event in 2020 (**Figure 4.10**). Four were rated as F0 on the Fujita Tornado scale, five were F1, and one was F4. The most severe tornado in the county occurred in Sprakers, a hamlet in the Town of Root, in July 1989. A tornado was confirmed to have touched down in the Cranesville area of Amsterdam on September 5, 2011, rating as an EF1. The tornado caused significant damage to 25 to 30 property and homes and several thousand customers lost power. The most recent tornado occurred in Fort Plain in October 2020 when a high-end severe weather



4.10: Tornado Occurrences (1950-2022)

event unfolded across the Northeast with a line of thunderstorms causing widespread damage. Wind gusts of 50 to 60 mph were recorded down the Mohawk Valley and a brief F0 tornado occurred in Canajoharie. The tornado caused approximately $15,000 in damage, as it nearly destroyed a private barn and toppled trees. As a result of this storm, 160,000 power outages occurred across the region.

4.4.7.3 Locally Identified Areas of Impact

Most of the tornadoes that have occurred in the region were low in intensity, with most being an EF-0 or EF-1 on the Enhanced Fujita Scale. Additionally, most of the tornadoes only lasted for a short period of time before they dissipated, limiting the amount of damage they caused[69]. Based on historical events, future tornadoes in Montgomery County will also likely be EF-0 or EF-1 tornadoes. As it is impossible to predict the exact locations of future tornadoes, the entire community is vulnerable to the impacts.

4.4.7.4 Probability of Future Occurrence

Based on historical data, there is an approximately 13.8% chance that a tornado could strike in any given year within the county. Based on the past record, the Planning Team concludes that it is LIKELY that tornadoes will impact Montgomery County in the future.

4.4.7.5 Tornado Impacts on Montgomery County's Key Sectors

Tornado Exposure and Vulnerability by Key Sector[70]	
Natural Resources and Environment	Direct impacts may occur to flora and fauna small enough to be transported by the tornado. Even if the winds are not sufficient to transport trees and other large plants, they may still uproot them. Material transported by tornados can also cause environmental havoc in surrounding areas, particularly of contaminating materials are introduced into the atmosphere or local water supplies.
Economy	Tornado events are typically localized; however, in those areas, economic impacts can be significant. Types of impacts may include loss of business function, water supply system damage, damage to inventory, relocation costs, wage loss, and rental loss due to the repair/replacement of buildings. Recovery and clean-up can also be costly.
Vulnerable Populations	Vulnerable populations include all those who may have difficulty evacuating, including car-free households, individuals over 65, and households with young children. Individuals with limited internet or phone access may not be aware of impending tornado warnings. The potential insufficiency of older or less stable housing to offer adequate shelter from tornados is also a concern.

4.4.7.6 Thunderstorms

A thunderstorm is a storm with lightning and thunder produced by a cumulonimbus cloud, usually producing gusty winds, heavy rain, and sometimes hail. The NWS classifies a thunderstorm as 'severe' when it produces

[69] https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Tornado&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=11&endDate_dd=15&endDate_yyyy=2022&county=MONTGOMERY%3A57&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=36%2CNEW+YORK

[70] MEMA (2018), "SHMCAP"

damaging wind gusts more than 58 mph (50 knots), hail that is 1 inch in diameter or larger (quarter size), or a tornado.[71]

Three basic ingredients are required for a thunderstorm to form: moisture to form clouds and rain, rising unstable air warm air that can rise rapidly, and lift- caused by cold or warm fronts, sea breezes, mountains, or the sun's heat. While less severe than other types of storms, a thunderstorm can lead to localized damage and represents a hazard risk for all communities in New York. An average thunderstorm is 15 miles across and lasts 30 minutes; severe thunderstorms can be much larger and longer. The area of New York where Montgomery County is located experiences 18 to 27 days per year with severe thunderstorms (**Figure 4.11**).[72]

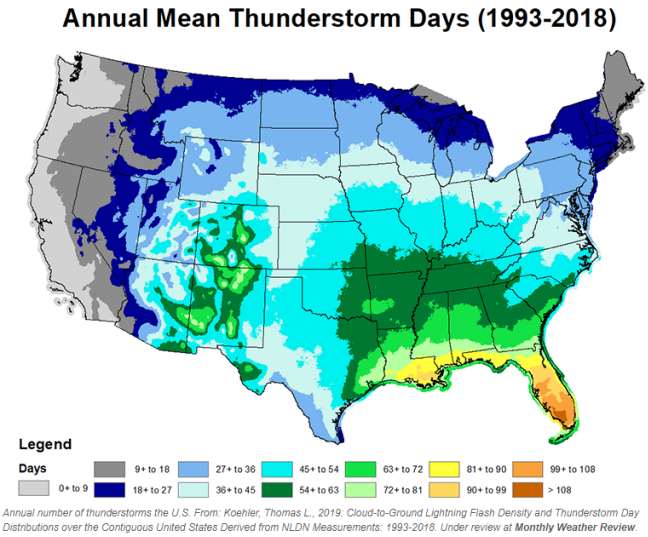


Figure 4.11: Annual Average Number of Thunderstorm Days in the U.S.

Thunderstorms have masses of air, an updraft (rising air), and a downdraft (sinking air). A strong downdraft, also known as a downburst, can cause tremendous wind damage like a tornado. Damage from hail and lightning are secondary impacts to thunderstorms. Hail can cause damage to vehicles and crops especially when the hail stones are large in diameter.

4.4.7.7 Previous Occurrence and Extent

Research on the NOAA Storm Event Database[73] from 1950 to 2021 indicates there were 253 severe wind-related storms in Montgomery County including thunderstorms, tornadoes, lightning, hail, and strong winds, averaging 3.6 wind related storms per year. 147 thunderstorms events occurred in Montgomery County over the 71-year period, or 2.1 per year and 32 hail events over the same period, or 0.5 events per year.

[71] NWS, Severe Weather Definitions: https://www.weather.gov/bgm/severedefinitions

[72] NWS, Introduction to Thunderstorms: https://www.weather.gov/jetstream/tstorms_intro

[73] https://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=36%2CNEW+YORK

According to the NOAA National Climatic Data Center (NCDC), Montgomery County experienced the following events between January 1, 1950, and December 31, 2021:

- 9 days with reported Tornado (EF0-F4 magnitude, $25.365 M property damage)
- 7 days with reported Lightning (1 injury, $68.00 K property damage)
- 32 days with reported Hail (0.75-4.00-inch diameter, $6.00 K property damage)
- 58 days of reported High/Strong Wind (up to 64 knots, $421.00 K property damage)
- 147 days of reported Thunderstorm Wind (up to 87 knots, 1 injury, $2.454 M property damage

4.4.7.8 Locally Identified Areas of Impact

Based on local experience and NOAA weather records, the entire planning area has experienced severe weather events due to wind, including lightning, hail, strong winds, thunderstorms, and tornadoes.

4.4.7.9 Probability of Future Occurrence

Based on the past regional and local history of severe weather wind events, the Planning Team determined that it is **HIGHLY LIKELY** that a weather event due to wind, including lightning, hail, strong winds, and thunderstorms will impact the area in the future**.** The planning team thinks that it is **LIKELY** that a weather event due to tornadoes will impact the area in the future

4.5 Geologic Hazards

4.5 GEOLOGIC HAZARDS

4.5.1 Earthquake

An earthquake is the movement or trembling of the ground produced by a sudden displacement of rock in the Earth's crust. The theory of plate tectonics is commonly used to explain much of the earthquake activity in the world. The plates over the Earth are in constant slow motion and this movement can cause earthquakes, most frequently at the boundary of the plates.[74]

In general, magnitude measures the size of an earthquake, while intensity measures the effects, which vary according to how far you are from the earthquake and the soils you are on.[4] Two scales are frequently used to measure earthquakes: The Richter Scale measures the amount of energy released by an earthquake, or its magnitude. The Richter Scale ranges from 3.5 to 8.0, where 3.4 may be felt but does not cause damage, to an 8 which includes Great Earthquakes, and serious damage over extremely large areas. The Modified Mercalli Intensity (MMI) Scale measures the intensity or impact of an earthquake on people and the built environment, and the Scale ranges from a Level I, where the earthquake is not felt except by very few under especially favorable circumstances to a XII, with total damage: where all works of construction are damaged or destroyed, lines of sight and level are distorted, and objects are thrown into the air.[4]

Earthquake hazards have multiple impacts beyond the obvious building collapse. Buildings may suffer structural damage that may or may not be readily apparent. Earthquakes can cause major damage to roadways, making emergency response difficult. Water lines and gas lines can break, causing flooding and fires. Another potential vulnerability is equipment within structures. For example, a hospital may be structurally engineered to withstand an earthquake, but if the equipment inside the building is not properly secured, the operations at the hospital could be severely impacted during an earthquake. Earthquakes can also trigger landslides.

4.5.1.1 Previous Occurrence and Extent

According to the 2019 NYSHMP, New York has had over 550 earthquakes centered within its state boundaries between 1737 and 2016, averaging 2 earthquakes per year. Most of the earthquakes in New York have taken place in the greater New York City area, in the Adirondack Mountains region, and in the western part of the state. According to the USGS Earthquake database[75], only 2 of New York's historic earthquakes had a magnitude of greater than 4.5.

- October 7, 1983: An earthquake with a magnitude of 5.1 epicentered near Newcomb in northeastern New York. Maximum observed intensity of VI on the MMI Scale. At Blue Mountain Lake, one old chimney collapsed, 20 tombstones slid or rotated, and some minor cracks in plaster walls. Several other towns in the area experienced light damage such as cracked chimneys, broken dishes, and glassware, and overturned or fallen objects. Additionally, several landslides were reported.

[74] Earthquake Causes and Characteristics, FEMA Emergency Management Institute Training Guide, https://training.fema.gov/emiweb/is/is8a/is8a-unit3.pdf

[75] https://earthquake.usgs.gov/earthquakes/search/

- April 20, 2022: An earthquake with a magnitude of 5.3 was epicentered near Au Sable Forks in northeastern New York. Maximum observed intensity of VII on the MMI Scale. This area of New York experiences infrequent, yet moderate-sized seismic activity. Roads, bridges, chimneys, and water lines were left damaged across Clinton and Essex Counties. Many buildings had cracked walls and foundations, broken windows, and overturned or fallen objects. This event was New York's only FEMA declared disaster to date.

The April 20, 2002, earthquake was New York's only FEMA declared disaster to date and did not include Montgomery County in the declaration. There has been only one recorded earthquake epicenter in Montgomery County. On August 23, 2014, an earthquake with a magnitude of 2.1 epicentered near the town of Fonda but no significant damage was reported. FEMA has published maps with seismic design categories (SDCs) for building design and construction professionals. Montgomery County, and most of the northeast, is classified as SDC "B," as areas that could experience shaking of moderate intensity.[76]

4.5.1.2 Locally Identified Areas of Impact

Based on mapping by FEMA, the entire planning area is at risk from impacts due to earthquakes.

4.5.1.3 Probability of Future Occurrence

Earthquakes cannot be predicted and may occur at any time of the day and any time of the year. However, for the purpose of this Plan, the USGS 2014 Seismic Hazard Map[77] was used to review the probability of future occurrence as shown in **Figure 4.12**.

[76] https://www.fema.gov/earthquake-hazard-maps

[77] https://www.usgs.gov/media/images/2014-seismic-hazard-map-new-york

The data is derived from seismic hazard curves and depict probabilistic ground motions with a 2% probability of exceedance in 50 years. For Montgomery County, moderate peak gravity acceleration from 10-14% is

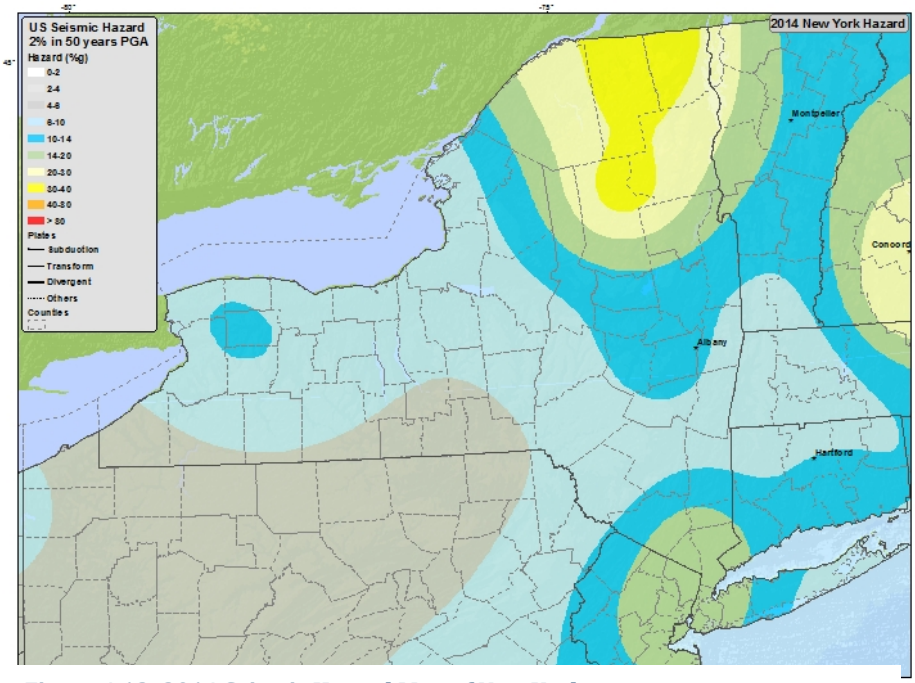


Figure 4.12: 2014 Seismic Hazard Map of New York

predicted. Montgomery County has a higher probability of an earthquake than most counties in New York. Although earthquakes are not common in the area, counties to the north have a higher probability of an earthquake, and the effects of one could be felt in Montgomery County. The Planning Team determined that it is **POSSIBLE** that an earthquake will impact Montgomery County in the future and therefore are including it in the Natural Hazard Mitigation Plan.

4.5.1.4 Earthquake Impacts on West Montgomery County's Key Sectors

Earthquake Exposure and Vulnerability by Key Sector[78]	
Built Environment	In addition to direct impacts, earthquakes also present a risk associated with hazardous materials releases, which have the potential to impact a production or storage facility during transportation, or a result of pipeline damage. These events could cause widespread interruption of services, as well as air and water contamination.
Natural Resources and Environment	If strong shaking occurs in a forest, trees may fall – resulting not only in environmental impacts but also potential impact to any industries relying on that forest. If shaking occurs in a mountainous environment, cliffs may crumble, and caves may collapse. Disrupting the physical foundation of the ecosystem can cause species displacement and modify the species balance in that ecosystem and leave the area more vulnerable to the spread of invasive species.

[78] MEMA (2018), "SHMCAP"

Earthquake Exposure and Vulnerability by Key Sector[78]	
Economy	Earthquake losses can include structural and non-structural damage to buildings (which could include damage to architectural components like ceilings and lights, or power systems), loss of business function, damage to inventory, relocation costs, wage loss, and rental loss due to the repair/replacement of buildings.
Vulnerable Populations	Socially vulnerable populations are the most likely groups to be affected by this hazard based on a number of factors, including their physical and financial ability to react or respond during a hazard, the location and construction quality of their housing, and the ability to be self-sustaining after an incident due to limited ability to stockpile supplies.

4.5.2 Landslide

Landslides are composed of natural rock, soil, artificial fil, or a combination and encompass a wide variety of ground movements under the effect of gravity including rock falls, slope failures, and shallow debris flows. They flow rapidly and grow as they pick up trees, cars, boulders, and other materials in their path. Most of the New York State soil is strong enough to resist landslide tendency; however, Mohawk River Valley has a high risk of landslide susceptibility.

4.5.2.1 Previous Occurrence and Extent

Landslides tend to coincide with other natural disasters such as earthquakes and floods that exacerbate relief and reconstruction efforts. As a result, landslide frequency is related to the frequency of other hazards. Landslide incidence is the number of landslides that have occurred in each geographic area. High incidence means greater than 15 percent of a given area has been involved in a landslide, medium incidence means 1.5 to 15 percent of an area has been involved, and low incidence means that less than 1.5 percent of an area has been involved. Montgomery County has a low incidence of landslides[79]. There have been zero FEMA declared landslide disasters from 1954 to 2022. According to the FEMA National Risk Assessment for Montgomery County, only 1 landslide event has occurred in the region between 2010 and 2019.

4.5.2.2 Locally Identified Areas of Impact

The National Risk Index created by FEMA rates communities' relative risk for landslides compared to the rest of the United States. Montgomery County was rated as having a moderate risk of landslides.

4.5.2.3 Probability of Future Occurrence

Due to the low incidences of historic landslides and moderate risk of landslides, the Planning Team determined that it is **UNLIKELY** that landslides will impact Montgomery County in the future. Potential effects from climate change could increase the likelihood of landslides due to slope saturation with more frequent

[79] https://geology.com/usgs/landslides/

and intense storms, and reduced vegetation cover due to the increased frequency of drought events or increased urbanization.

4.5.2.4 Landslide Impacts on Montgomery County's Key Sectors

Landslide Exposure and Vulnerability by Key Sector[80]	
Built Environment	Landslides can cause damage to elements of the built environment and can interfere with travel if large enough to block or damage roads.
Natural Resources and Environment	Landslides can affect many facets of the environment, including the landscape itself, water quality, and habitat health. Transported soil may harm aquatic habitats, and mass movement of sediment may result in stripping of forests and other vegetated systems.
Economy	Direct costs include the actual damage sustained by buildings, property, and infrastructure. Indirect costs from a large landslide event could include clean-up costs, business interruption, loss of tax revenues, reduced property values, and loss of productivity.
Vulnerable Populations	Populations who rely on potentially impacted roads for vital transportation needs are particularly vulnerable to this hazard.

4.6 OTHER HAZARDS

4.6.1 Wildfire

Fire needs the right combination of heat source, fuel, and oxygen to ignite and thrive. Availability of fuel, weather conditions, and terrain all dictate how a fire will behave. Fires are classified as disasters when they affect people or developed areas. Fires can start from a variety of natural or anthropogenic causes. Urban fires occur in developed landscapes, where a fire has the potential to spread from one structure to another.

Wildfire is any non-structural fire that occurs in vegetative wildlands. The 3 major classes of wildfires are surface, ground, and crown fires. A surface fire creeps slowly on the forest floor, while killing or damaging trees. Often occurring during droughts, ground fires burn organic ground cover below the forest floor. Rapidly spreading due to wind, crown fires quickly jump along the treetops.

Major urban and wildfires often result from other hazards, such as storms, earthquakes, gas leaks, transportation accidents, hazardous material spills, criminal activity, or terrorism. In contrast, small structural fires occur frequently from mundane events.

4.6.1.1 Previous Occurrence and Extent

Records from the New York State Forest Ranger force indicate that rangers have suppressed 5,423 wildfires that burned a total of 52,580 acres between 1993 and 2017[81]. Over 25 years, this averages 217 fires and 2,103 acres burned per year. New York State does not have a consistent wildfire season, however, most of the wildfires during the 25-year period burned in the month of April followed by May. Acreage is used as a direct

[80] MEMA (2018), "SHMCAP"

[81] https://www.dec.ny.gov/lands/4975.html

measurement as there is no universal scale for wildfire magnitude. Historically, only one wildfire has impacted Montgomery County, which occurred on July 5 through July 7, 2002, and the summer of 2023[82]. Several forest fires originating in northern Quebec were sparked by exceptionally hot and dry weather and resulted in heavy smoke being transported south across eastern New York. The smoke obscured the sky and reduced surface visibilities to as low as one mile. No major impacts were reported to the National Weather Service, but advisories cautioned people with respiratory problems to remain indoors and all individuals to cease outdoor activities. New York State has not encountered any wildfire-related FEMA declared disasters to date.

4.6.1.2 Locally Identified Areas of Impact

Wildfires represent a medium frequency, extensive severity hazard for Montgomery County. The United States Department of Agriculture (USDA) Forest Service determine wildfire risk based off vegetation and fuels from LANDFIRE, weather from the National Weather Service, and community data from the U.S Census Bureau[83]. The data only reflects wildfires and disturbances prior to 2014. As shown in Figure 4.13, most of Montgomery County is mapped as having medium to high wildfire risk compared to the rest of New York. Populated areas in Montgomery County have on average greater risk than 70% of counties in New York. When compared to the rest of the nation, as shown in Figure 4.14, Montgomery County has a low wildfire risk.

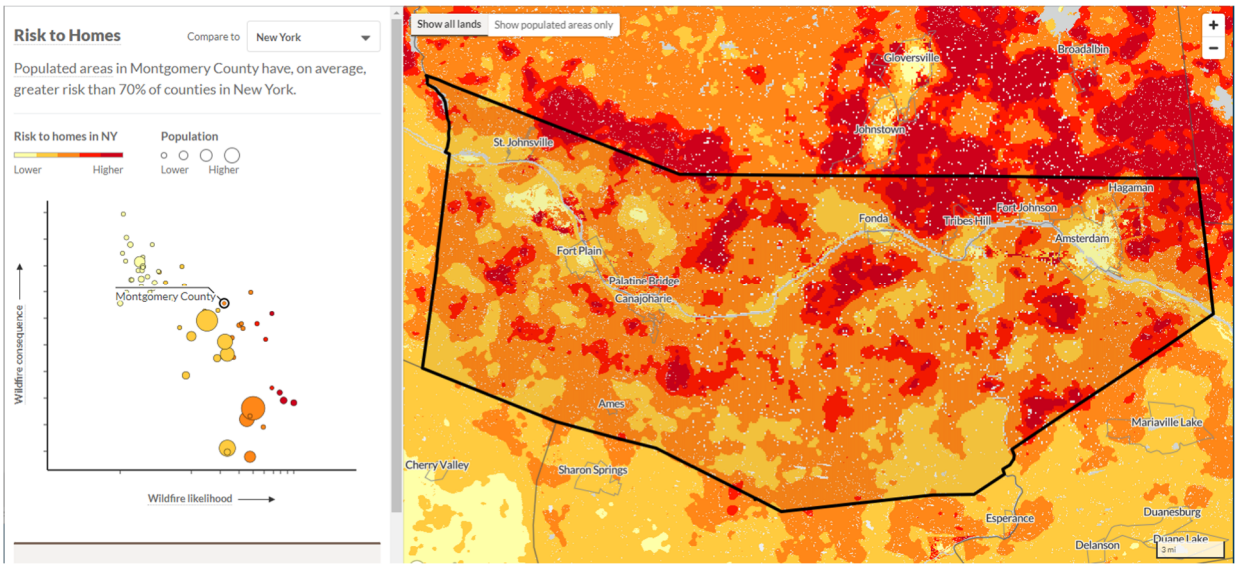


Figure 4.13 Wildfire Risk of Montgomery County Compared to New York State

[82] https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=5309234

[83] https://wildfirerisk.org/

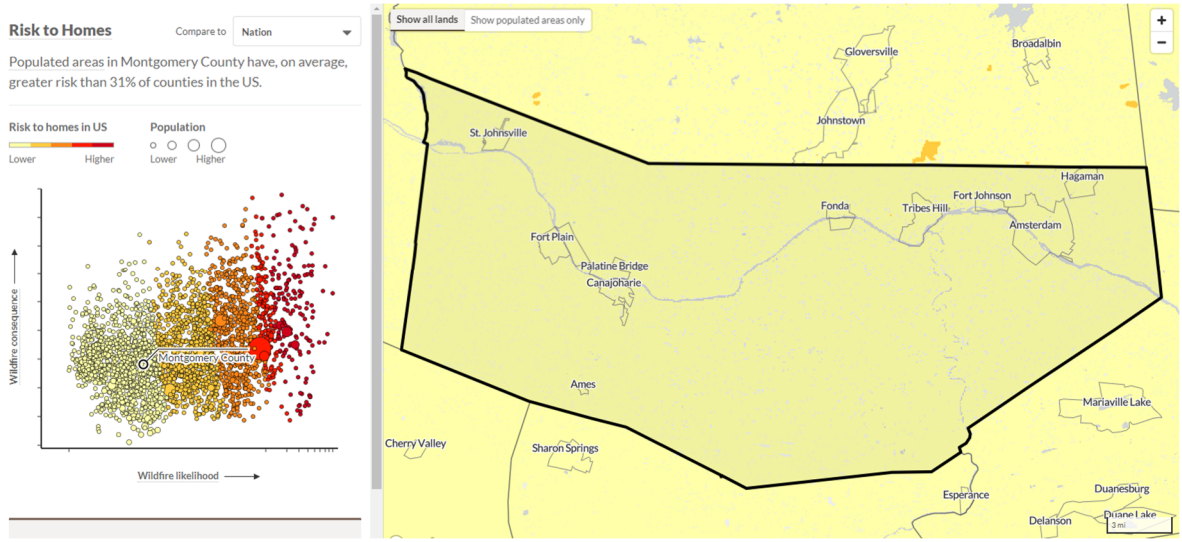


Figure 4.14 Wildfire Risk of Montgomery County Compared to the U.S.

4.6.1.3 Probability of Future Occurrence

It is difficult to predict the likelihood of wildfires given the complexity of predicting the factors leading to fires. Fires will continue to present a risk, and that risk is likely to increase with potential drought impacts of climate change. Periods of hot, dry weather and more frequent lighting strikes may increase wildfires. Research has found that the frequency of lightning strikes could increase by approximately 12 percent for every degree Celsius of warming. The Planning Team determined that it is **LIKELY** that a wildfire will impact the planning area based on the medium to high risk of wildfires for Montgomery County.

4.6.1.4 Wildfire Impacts on Montgomery County's Key Sectors

Wildfire Exposure and Vulnerability by Key Sector[84]	
Built Environment	Fires can create conditions that block or prevent access and can isolate residents and emergency service providers. They can also damage infrastructure elements such as power and communication lines.
Natural Resources and Environment	Fire serves important ecological purposes; however, it can also cause environmental impacts. In addition to direct mortality, wildfires, and the ash they generate can distort the flow of nutrients through an ecosystem, reducing the biodiversity that can be supported.
Economy	Wildfire events can have major economic impacts on a community, both from the initial loss of structures and the subsequent loss of revenue from destroyed business and decrease in tourism. Additionally, wildfires can require thousands of taxpayer dollars in fire response efforts.
Vulnerable Populations	All residents whose homes are in wildfire hazard areas are vulnerable to this hazard. Smoke and air pollution from the wildfires can also be a severe health hazard, especially for sensitive populations, including children, the elderly, and those with respiratory and cardiovascular diseases.

[84] MEMA (2018), "SHMCAP"

5 Asset Inventory

Section 5 provides an inventory of the community assets that are important to Montgomery County and its jurisdiction. This Section is broken up into three parts: a discussion of current and future land use trends, a description of the community asset categories used, and the results of the Montgomery County Community Assets Inventory organized by the three geographical planning areas within the County. Identifying community assets allows the County to investigate how they will be impacted by the different natural hazards.

5.1 LAND USE TRENDS

E1-a

Land use regulatory authority is vested in New York State's towns, villages, and cities. However, many development and preservation issues transcend political boundaries. DMA 2000 requires that communities consider land use trends, which can impact the need for, and priority of, mitigation options over time. Land use trends significantly impact exposure and vulnerability to various hazards. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

This Plan provides a general overview of land use and types of development occurring within the study area. An understanding of these development trends can assist in planning for further development and ensuring that appropriate mitigation, planning, and preparedness measures are in place to protect human health and community infrastructure.

Table 5-1 shows the acreage and percentage of total land in Montgomery County based on a comparison of 2015 and 2022 Assessor's data. There has been little change in land use between 2015 and 2022 with approximately 50% of the land in agriculture, and 25% being used as residential areas. The next largest categories of land use is vacant land, conservation and public parks.

Table 5-1. Change in Land Use Distribution 2015-2022

D1-a

Land Use Type	2015		2022
	Square Miles	%	%
Agriculture	209.62	50	**50**
Residential	107.63	26	**24**
Vacant	51.58	12	**15**
Conservation & Public Parks	23.59	6	**5**
Public Services	7.13	2	**2**
Community Services	5.75	1	**1**
Commercial	5.34	1	**1**
Industrial	2.75	1	**1**
Recreation & Entertainment	**1.89**	**1**	**1**

Source: Montgomery County Department of Economic Development and Planning 2015, updated 2023

ASSET INVENTORY

According to the 2017 Census of Agriculture, Montgomery County had 564 farms with 114,990 acres of land in farms. The average size of farms in the County was 204 acres. The market value of products sold in the County was over $75 million, of which over $18 million was in crop sales and over $57 million in livestock sales. The 2020 Census also indicated that 186 people work in farming, fishing, or forestry related occupations as their primary occupation.

Between 2012 and 2017, the County saw a decrease in the number of farms and size of farms. Table 5-2 shows the number of farms and land use in Montgomery County since 1940. Data from the 2020 Census was not available on the Department of Agriculture website at the time of this HMP update.

Table 5-2. Farms in Montgomery County, New York[85]

Year	Number of Farms	Land in Farms (acres)	Total Cropland (acres)	Permanent Pasture (acres)	Total Woodland (acres)	Other Land (acres)
1940	1,813	209,521	N/A	N/A	21,281	**N/A**
1950	1,473	204,612	144,395	29,980	22,020	**8,217**
1959	1074	192,037	127,466	31,300	22,032	**11,536**
1969	735	161,303	118,122	N/A	18,035	**N/A**
1978	668	165,573	125,214	12,604	18,232	**9,432**
1982	657	164,000	122,675	10,532	19,536	**11,257**
1987	685	169,400	131,600	10,700	18,700	**8,400**
1992	630	152,600	112,900	9,000	19,300	**11,400**
1997	650	145,000	110,400	10,000	15,400	**9,200**
1998	645	144,000	100,700	9,800	15,000	**8,500**
1999	655	139,800	110,700	9,400	14,700	**5,000**
2000	640	138,400	N/A	N/A	N/A	**N/A**
2001	630	139,300	N/A	N/A	N/A	**N/A**
2002	620	152,000	111,982	10,925	19,532	**9,541**
2003	620	151,800	N/A	N/A	N/A	**N/A**
2007	604	124,556	84,091	13,701	17,936	**8,819**
2012	659	131,386	N/A	N/A	N/A	**N/A**
2017	**564**	**114,990**	**84,494**	**N/A**	**N/A**	**N/A**

Anticipated Future Development

An understanding of population and development trends can assist in planning for future development and ensuring that appropriate mitigation, planning, and preparedness measures are in place to protect human health and community infrastructure. DMA 2000 requires that communities consider land use trends, which can impact the need for, and priority of, mitigation options over time. Land use and development trends significantly impact exposure and vulnerability to various hazards. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

[85] https://www.nass.usda.gov/AgCensus/index.php

ASSET INVENTORY

Local zoning and planning authority is provided for under the New York State General Municipal Law, which gives municipalities zoning and planning authority. Refer to Section 7 for further details on the planning and regulatory capabilities for the County and each municipality.

Significant commercial and residential development is primarily limited to locations in the Eastern and Central portion of the County and specifically in the Towns of Amsterdam and Florida and Villages of Fort Plain and Canajoharie. Most of the anticipated developments are housing projects outside of the floodplain. In the Town of Florida, there is anticipated expansion of an existing distribution center in the vicinity of NY State Highway 5. In the Town of Amsterdam, three housing projects and one commercial project are proposed out of the flood zone. Village of Fort Plain and Canajoharie projects include a mixed-use redevelopment out of the flood zone and conversion of a commercial building to housing within a flood zone. Montgomery County has acquired the Beechnut Property located in the Town of Canajoharie within a flood zone. Redevelopment in the flood zone and must adhere to all flood zone building requirements.

Areas that are likely to be developed or redeveloped in the future, defined for the purposes of this plan as a ten-year time horizon, are shown in **Table 5-3**.

Table 5-3. Areas Slated for Future Development within 10-years

Future Development		
Name	**Description**	**Community**
Masonic Temple Building - Mohawk Street	Conversion to housing	Village of Fort Plain
Dollar General Cold Storage Facility - NY 5S	Expansion of existing distribution center	Town of Florida
Exit 29 Redevelopment	Mixed use redevelopment	Village of Canajoharie
The Gables at Log City Village - Log City Road	Housing Development	Town of Amsterdam
Starbucks - ST HWY 30	Coffee Shop	Town of Amsterdam
Golf Course Road Senior Living Facility	Senior Housing	Town of Amsterdam
Mannys Corner Road - Senior Living	Senior Housing	Town of Amsterdam
Beechnut Property	**Future Housing/ Business Redevelopment**	**Montgomery County**

COMMUNITY ASSET INVENTORY

FEMA defines a community asset as anything that is important to the character and function of a community. Community assets can be split up into four different categories: People or Societal, Economy, Built Environment or Infrastructure, and Natural Environment. The People category includes populations that are more vulnerable to a disaster (e.g., elderly, children, visiting populations), densely populated areas, and societal assets such as cultural and historical resources. Economy is included because economic drivers are a major part of disaster recovery. Community assets in the Economy category can include major employers, commercial centers, and locations providing food, medical supplies and building materials. The Built Environment is the largest category and includes existing structures, infrastructure (transportation and utilities) and critical facilities important for disaster response and evacuation (e.g., police, fire stations and medical facilities). The Natural Environment category is meant to capture any natural resources important to

the community's character, economy (tourism, recreation, and the protection of clean air and water), and ecosystem services (e.g., wetlands providing flood storage, coastal areas providing erosion control as a first line of defense from coastal storms).

Table 5.4 summarizes the community asset categories included in FEMA guidelines, relevant critical sectors within each category, and the general characteristics that describe why these assets are important to include in a hazard mitigation plan.

Table 5.4. Community Asset Categories and Characteristics

FEMA Community Asset Categories	Critical Sectors	Characteristics of Community Assets
People- Societal Assets	Schools, Vulnerable Populations, Cultural and Historical Facilities	Areas of greater population density, or population with unique vulnerabilities or less able to respond and recover during a disaster.
Built Environment- Infrastructural Assets	Critical Municipal Facilities, Water, Wastewater, Energy, Stormwater, Transportation	Critical facilities necessary for a community's response to and recovery from emergencies, infrastructure critical for public health and safety, economic viability, or for critical facilities to operate.
Economic Assets	Seaport, Business District, Food and Medical Supplies, Building Supplies	Major employers, primary economic sectors, and commercial centers where loss or inoperability would have severe impact on the community and ability to recover from a disaster.
Environmental Assets	Natural Resources	Areas that provide protective functions to reduce magnitude of hazard impact and increase resiliency. Areas of sensitive habitat that are vulnerable to hazard events, protection of areas that are important to community objectives, such as the protection of sensitive habitat, provide socio-economic benefits, etc.

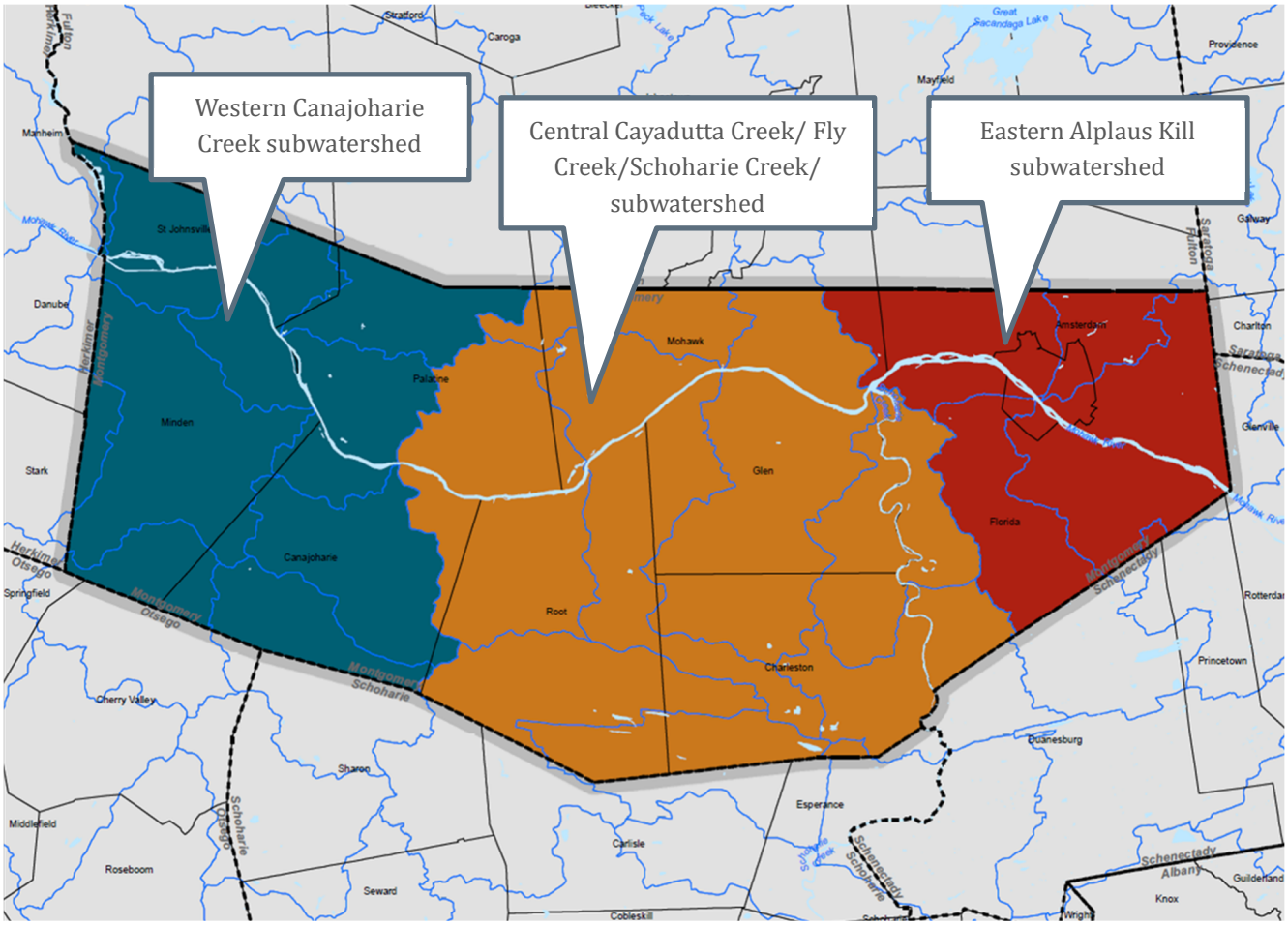
In total, 462 site-specific community assets were identified within the four FEMA categories including 197 societal assets, 176 infrastructure assets, 82 economic assets and only 7 environmental assets. Each Community Asset group was further subdivided into 48 subtypes (e.g., churches, schools, pharmacies) to provide a more comprehensive picture of resources. The most prevalent subtype identified were dams and locks (68), followed by churches (48), municipal buildings (38), historic sites (32) and an equal number of fueling sites, cemeteries, and schools (27 each).

Map 5. A, 5. B, and 5. C located in Appendix E- Risk Assessment Mapping shows the location of all selected community assets organized by geographic planning areas (see 5.1). **Section 6 Vulnerability Risk Assessment** provides a discussion on **natural hazards that may impact** community assets and their vulnerability. **Click here to access an interactive dashboard showing all the currently identified community assets and how they relate to different criteria used throughout plan.**

5.3 GEOGRAPHIC PLANNING AREAS

Three geographic planning areas were delineated for the HMP. For planning purposes, the Mohawk River watershed within Montgomery County has been subdivided into the three major sub basins[86] including western Canajoharie Creek subwatershed, central Cayadutta Creek/ Fly Creek/Schoharie Creek/ subwatershed, and the eastern Alplaus Kill subwatershed. The geographic areas serve as planning boundaries allowing areas to be compared, improving visual resolution for map graphics, and laying the foundation for mapping vulnerability and mitigation strategies. Each geographic planning area is described below including a summary of community assets for each area.

Figure 5-1: Watershed Based Geographic Planning Areas for Montgomery County



[86] USGS HUC 10 subwatershed naming conventions were applied to reference the three planning areas.

5.4 WESTERN CANAJOHARIE CREEK SUBWATERSHED COMMUNITY INVENTORY

5.4.1 Description

The western Canajoharie Creek subwatershed of the Mohawk River within Montgomery County covers the communities of Minden, St. Johnsville, and the majority of Canajoharie, and about half of Platine and a small portion of Root, including the villages of St Johnsville, Fort Plain, Nelliston and Ames. Major water bodies include:

- Canajoharie Creek
- Brimstone Creek
- Bowmans Creek
- Sprout Brook
- Otsquago Creek south of the Mohawk River
- East Canada Creek
- Timmerman Creek
- Zimmerman Creek
- Mother Creek
- Caroga Creek
- Mill Creek north of the Mohawk River

The name Canajoharie is a Mohawk language term meaning "the pot that washes itself," referring to the "Canajoharie Boiling Pot," a 20-foot wide and 10.0-foot-deep pothole in the Canajoharie Creek, just south of the village of Canajoharie.[87] The United States Geological Survey (USGS) maintains a gauge on Canajoharie Creek at McEwan Road. The station[88] had a record high maximum discharge of 5,850 cubic feet per second on August 28, 2011, as Hurricane Irene passed through the area.

The following tables are a comprehensive summary of important societal, infrastructural, and economic community assets that are found within the Western Canajoharie Creek Subwatershed within Montgomery County. No environmental assets were specifically identified for Western Montgomery County.

5.4.2 People

Table 5-5. Societal Community Assets in Western Canajoharie Creek Subwatershed

Town/Village	Name	Subtype
Canajoharie	Twin Mountain Amish School	School/ Private
Canajoharie	Sunset View Amish School	School/ Private
Canajoharie	Site of Central Asylum School for Deaf	Historic Site
Palatine	Dygert Road Amish School	School/ Private
Palatine	Stone Arabia Amish Parochial School	School/ Private

[87] https://en.wikipedia.org/wiki/Canajoharie_Creek

[88] https://waterdata.usgs.gov/monitoring-location/01349150/#parameterCode=00065&period=P7D

ASSET INVENTORY

Town/Village	Name	Subtype
Palatine	Stone Arabia Battlefield	Historic Site
Palatine	Stone Arabia Reformed Church	Historic Site
Palatine	Kilts Homestead of 1840	Historic Site
Palatine	Fort Wagner	Historic Site
St. Johnsville	Fort Haus	Historic Site
St. Johnsville	Inn by the Mill	Historic Site
St. Johnsville	1747 Nellis Tavern	Historic Site
St. Johnsville	Fort Klock	Historic Site
St. Johnsville	First Methodist Episcopal Church of St. Johnsville	Church
St. Johnsville	Nellis Cemetery	Cemetery
St. Johnsville	Klock Cemetery	Cemetery
St. Johnsville	Edwards Cemetery	Cemetery
St. Johnsville	Bellinger Cemetery	Cemetery
Village of Ames	Ames-Sprout Brook United Methodist Church	Church
Village of Canajoharie	Canajoharie Senior High School	School/ Public
Village of Canajoharie	Canajoharie East Hill / Middle School	School/ Public
Village of Canajoharie	Church of the Good Shepherd	Church
Village of Canajoharie	Community Bible Church	Church
Village of Canajoharie	Van Alstyne Homestead Museum	Historic Site
Village of Canajoharie	Arkell Museum	Historic Site
Village of Canajoharie	St. John's & St. Mark's Lutheran Church	Church
Village of Canajoharie	Faith Hope & Love Christian	Church
Village of Canajoharie	Canajoharie United Methodist Church	Church
Village of Canajoharie	Reformed Church	Church
Village of Canajoharie	Upstate Chapel	Church
Village of Canajoharie	Our Lady of Hope Church	Church
Village of Canajoharie	Canajoharie Library & Art Gallery	Library
Village of Canajoharie	New Dimensions in Living	Affordable Housing
Village of Canajoharie	Lenz & Betz Funeral Home	Mortuaries
Village of Canajoharie	St. Mary's Healthcare - Canajoharie Health Center	Medical Facility
Village of Canajoharie	Bassett Health Center Canajoharie	Medical Facility
Village of Fort Plain	Harry Hoag School	School/ Public
Village of Fort Plain	Fort Plain High School	School/ Public
Village of Fort Plain	The Fort Plain Museum & Historical Park	Historic Site
Village of Fort Plain	Victorious Life Church of RMI	Church
Village of Fort Plain	Grandview Baptist Church	Church
Village of Fort Plain	Fulmont Community Actin Agc	Food Pantry
Village of Fort Plain	Fort Plain Free Library	Library
Village of Fort Plain	Otsquago Aqueduct	Historic Site
Village of Fort Plain	Masonic Temple Building	Future Housing Complex

Town/Village	Name	Subtype
Village of Nelliston	Valley Alliance Church	Church
Village of Palatine Bridge	Palatine Nursing Home	Senior Services
Village of Palatine Bridge	Palatine Village Apartments	Senior Services
Village of Palatine Bridge	Fort Frey	Historic Site
Village of Palatine Bridge	Meals of Montgomery	Food Pantry
Village of Palatine Bridge	Lafayette Court	Affordable Housing
Village of Palatine Bridge	Hees Cemetery	Cemetery
Village of St. Johnsville	St. Johnsville Nursing Home	Senior Services
Village of St. Johnsville	The Community House	Historic Site
Village of St. Johnsville	St Paul's Lutheran Church	Church
Village of St. Johnsville	St John's Reformed Church	Church
Village of St. Johnsville	West St Johnsville Cemetery	Cemetery
Village of St. Johnsville	St. Johnsville Rehabilitation and Nursing Center, Inc.	Medical Facility
Village of St. Johnsville	Bassett Healthcare St Johnsville	Medical Facility
Village of St. Johnsville	Saint Johnsville High School	School/ Public
Village of St. Johnsville	Margaret Reaney Memorial Library and Museum	Historic Site
Village of St. Johnsville	Grace Christian Church	Church
Village of St. Johnsville	Seekers Fellowship	Church
Village of St. Johnsville	The Church of His Coming Resurrection	Church

5.4.3 Built Environment

Table 5-6. Infrastructural Community Assets in Western Canajoharie Creek Subwatershed

Town/Village	Name	Subtype
Canajoharie	(158-0443)	Dam
Canajoharie	Smith Dam #1	Dam
Canajoharie	(158-0458)	Dam
Canajoharie	(158-0461)	Dam
Canajoharie	(158-0505)	Dam
Canajoharie	Rattlesnake Hill #7 Marsh Dam	Dam
Canajoharie	Canajoharie Substation #1	Sub/Switching Station
Minden	South Minden Fire Dept	Municipal / Public Safety
Minden	Fisk Hill Road Water Storage Tank	PWS Tank
Minden	Hickory Acres	Airport / Helipad
Minden	Tomcat	Airport / Helipad
Minden	Walts Road Pond Dam	Dam
Minden	NEW CINGULAR WIRELESS PCS, LLC	Cell Tower
Minden	NEW CINGULAR WIRELESS PCS, LLC	Cell Tower
Minden	Cellco Partnership	Cell Tower
Palatine	Fort Plain Potable Water Facility	PWS Treatment

ASSET INVENTORY

Town/Village	Name	Subtype
Palatine	Canajoharie WTP	PWS Treatment
Palatine	Hiserts Airpark Inc.	Airport / Helipad
Palatine	Fort Plain Reservoir Dam	Dam
Palatine	Fort Plain Reservoir/Pump	Pump Station
Palatine	Canajoharie Water Supply Dam	Dam
Palatine	(158-0483)	Dam
Palatine	(158-0484)	Dam
Palatine	Phillip Mueller Wildlife Marsh Dam	Dam
Palatine	Leonard Logan Pond Dam	Dam
St. Johnsville	Lasselville Pump Station	PWS Treatment
St. Johnsville	(157-0515)	Dam
St. Johnsville	St Johnsville Reservoir Dam A	Dam
St. Johnsville	(157-0515d)	Dam
St. Johnsville	(157-0515e)	Dam
St. Johnsville	Village of St Johnsville	PWS Well
St. Johnsville	St. Johnsville Cell Tower	Communication Utilities
St. Johnsville	Electrical Communication Substation	Sub/Switching Station
Village of Ames	Ames Fire Dept	Municipal / Public Safety
Village of Canajoharie	USPS Canajoharie Office	Post Office
Village of Canajoharie	Canajoharie Fire Department	Municipal / Public Safety
Village of Canajoharie	Canajoharie Police Department	Municipal / Public Safety
Village of Canajoharie	Canajoharie Water Works	PWS Well
Village of Canajoharie	Smith Dam #2	Dam
Village of Fort Plain	Fort Plain Fire Dept.	Municipal / Public Safety
Village of Fort Plain	Fort Plain Police Headquarters	Municipal / Public Safety
Village of Fort Plain	USPS Fort Plain Office	Post Office
Village of Fort Plain	Clyde Street Water Storage Tank	PWS Tank
Village of Fort Plain	Willett St Sewer Pump Station	Pump Station
Village of Fort Plain	Rouse St Sewer Pump Station	Pump Station
Village of Fort Plain	Canal Street Pumping Station	Pump Station
Village of Fort Plain	Hancock Pumping Station	Pump Station
Village of Fort Plain	Fort Plain Pumping Station	Pump Station
Village of Fort Plain	Lock E-15 Dam at Fort Plain	Dam
Village of Fort Plain	Village of Fort Plain / Lincoln Wells	PWS Well
Village of Fort Plain	Garfield Street Water Storage Tank	PWS Tank
Village of Nelliston	USPS Nelliston Office	Post Office
Village of Nelliston	Montgomery CO SD#1 STP	WWTP
Village of Nelliston	Nelliston Pump Station	Pump Station
Village of Nelliston	Railroad Street Pump Station	Pump Station
Village of Palatine Bridge	USPS Palatine Bridge Office	Post Office

Town/Village	Name	Subtype
Village of Palatine Bridge	Lock E-14 Dam at Canajoharie	Dam
Village of Palatine Bridge	Village of Palatine Bridge Pump Station	Pump Station
Village of Palatine Bridge	Palatine Bridge Pumping Station	Pump Station
Village of Palatine Bridge	Spring Street Pumping Station	Pump Station
Village of St. Johnsville	USPS Saint Johnsville Office	Post Office
Village of St. Johnsville	St. Johnsville Police Department	Municipal / Public Safety
Village of St. Johnsville	St. Johnsville Fire Dept	Municipal / Public Safety
Village of St. Johnsville	Private Wastewater Treatment Plant	WWTP
Village of St. Johnsville	St. Johnsville Wastewater Treatment Plant	WWTP
Village of St. Johnsville	(157-0515b)	Dam
Village of St. Johnsville	(157-0515c)	Dam

5.4.4 Economy

Table 5-7. Economic Community Assets in Western Canajoharie Creek Subwatershed

Town/Village	Name	Subtype
St. Johnsville	Dollar General	Food/ Grocery
Village of Canajoharie	One Stop Shop Gas	Fuel
Village of Canajoharie	Sunoco Gas Station	Fuel
Village of Canajoharie	Richardson Brands	Major Employer
Village of Canajoharie	Canajoharie Central School District	Major Employer
Village of Fort Plain	Family Dollar	Food/ Grocery
Village of Fort Plain	Stewarts	Fuel
Village of Fort Plain	Stewarts	Fuel
Village of Fort Plain	Fort Plain True Value Hardware	Hardware
Village of Fort Plain	Fort Plain Central School District	Major Employer
Village of Nelliston	Sunoco Gas Station	Fuel
Village of Nelliston	Hatchet Hardware of Palatine Bridge	Hardware
Village of Nelliston	Cheese Factory	Food/ Grocery
Village of Nelliston	Fiehoffer's Bakery & Outlet	Food/ Grocery
Village of Nelliston	Eisenadler Brauhaus	Major Employer
Village of Nelliston/Palatine	Lee Publication	Major Employer
Village of Palatine Bridge	Price Chopper	Food/ Grocery
Village of Palatine Bridge	Dollar General	Food/ Grocery
Village of Palatine Bridge	Country Farms	Fuel
Village of Palatine Bridge	Stewarts	Fuel
Village of Palatine Bridge	Tractor Supply Co.	Hardware
Village of St. Johnsville	Stewarts	Fuel
Village of St. Johnsville	Gulf	Fuel

Village of St. Johnsville	Oppenheim-Ephratah-St. Johnsville Central School District	Major Employer

5.5 CENTRAL CAYADUTTA CREEK/ FLY CREEK/SCHOHARIE CREEK/ SUBWATERSHED COMMUNITY INVENTORY

5.5.1 Description

The Cayadutta Creek/ Fly Creek/Schoharie Creek/ subwatershed of the Mohawk River is found in central Montgomery County and includes portions of Palatine, Canajoharie, Florida, and Mohawk, most of Root, and all of Glen and Charleston including the villages of Fonda and Fultonville. The major water bodies include:

- Flat Creek
- Lashers Creek
- Yateville Creek
- Fly Creek
- Wilsey Creek
- Allston Creek
- Van Wie Creek
- Auries Creek
- Schoharie Creek to the south of the Mohawk River
- Damascara
- Kecks Center Creek
- Briggs Run
- Knauderack Creek north of the Mohawk River

The Native American meaning of Cayadutta is "rippling waters"[89]. The USGS maintains a stream gauge on Allston Creek near Randall and on Schoharie Creek at Burtonsville at the County Line. The maximum discharge for Schoharie Creek was 128,000 cubic feet per second measured on August 29, 2011.

The following tables are a comprehensive summary of important societal, infrastructural, economic, and environmental community assets that are found within the Central Cayadutta Creek/ Fly Creek/Schoharie Creek Subwatershed.

5.5.2 People

Table 5-8. Societal Community Assets in Cayadutta Creek/ Fly Creek/Schoharie Creek Subwatershed

Town/Village	Name	Subtype
Charleston	Charleston Baptist Church of 1797	Historic Site

[89] https://en.wikipedia.org/wiki/Cayadutta_Creek

ASSET INVENTORY

Town/Village	Name	Subtype
Charleston	1813 Charleston Four Corners Christian Church	Historic Site
Charleston	Burbine Forest Disc Golf	Recreational
Charleston	Town of Charleston Historical Society	Municipal/Historical
Charleston	Christian Church of Charleston Four Corners	Historic Site
Glen	Auriesville Shrine Museum	Historic Site
Glen	Our Lady of Martyrs Shrine	Church
Glen	Sunflower Safari Childcare	Childcare
Glen	Jesuit Cemetery	Cemetery
Glen	1831 Wycophite Church	Historic Site
Mohawk	Sacred Heart Church	Church
Mohawk	Fonda-Fultonville Senior High School	School/ Public
Mohawk	Fonda-Fultonville K-4 School	School/ Public
Mohawk	Fonda-Fultonville 5-8 School	School/ Public
Mohawk	Saint Kateri Tekakwitha Shrine	Cemetery
Mohawk	Evergreen Cemetery	Cemetery
Mohawk	Sammons Cemetery	Cemetery
Mohawk	St Cecelia Cemetery	Cemetery
Mohawk	Tribes Hill Heritage Center	Museum
Mohawk	NYSARC, In Mont Co Chapter	Special Needs
Mohawk	NYSARC, Inc Mont Co Chapter	Special Needs
Mohawk	Veterans Of Foreign Wars	Veterans Services
Mohawk	New Dimensions in Living Inc	Major Employer
Mohawk	VA Health Clinic / Johnson Property Mgmt	Medical Facility
Mohawk	Noah's Ark Animal Hospital	Animal Clinic
Mohawk	2nd Driveway LLC Mobile Home Park	Mobile Home Court
Mohawk	William Newkirk Manufacturing Housing Park	Mobile Home Court
Mohawk	Tribes Hill Recreational Park	Recreational
Mohawk	Camp Mohawk - Civil War Training Grounds	Historic Site
Mohawk	Sammons Estate	Historic Site
Palatine	McKinley Crossing Amish School	School/ Private
Root	River of Jubilee Church	Church
Root	Faith Bible Academy	School/ Private
Village of Canajoharie	Arkell Hall	Senior Services
Village of Fonda	1836 Montgomery County Courthouse	Historic Site
Village of Fonda	Frothingham Free Library	Library
Village of Fonda	Haven of Hope Farm and Residence	Shelters
Village of Fonda	Caughnawaga Reformed Church	Historic Site
Village of Fonda	St Cecilia Roman Catholic Church	Church
Village of Fonda	Food Bank	Food Pantry

Town/Village	Name	Subtype
Village of Fonda	Apartments/Mobile Home Park	Apartments/Mobile Home Park
Village of Fonda	Fonda Terrace Apartments	Senior Services
Village of Fonda	Fonda Cemetery	Cemetery
Village of Fonda	Nathan Littauer Hospital	Medical Facility
Village of Fonda	Robinhood Properties LLC	Apartments
Village of Fonda	CJT Properties, LLC	Apartments/Mobile Home Park
Village of Fonda	Montgomery County Agric Society	Fairgrounds/Racetrack
Village of Fultonville	Jackson & Betz Funeral Home	Mortuaries
Village of Palatine Bridge	Wee Care Daycare	Childcare
Village of Palatine Bridge	Palatine Bridge Cemetery	Cemetery

5.5.3 Built Environment

Table 5-9. Infrastructural Community Assets in Cayadutta Creek/ Fly Creek/Schoharie Creek Subwatershed

Town/Village	Name	Subtype
Charleston	Charleston Fire Dept	Municipal / Public Safety
Charleston	Burtonville Fire Dept	Municipal / Public Safety
Charleston	Charleston State Area Marsh Dam #2	Dam
Charleston	Charleston State Area Marsh Dam #1	Dam
Charleston	Charleston State Area Marsh Dam #3	Dam
Charleston	Charleston State Area Marsh Dam #4	Dam
Charleston	Charleston State Area Marsh Dam #5	Dam
Charleston	Charleston State Area Marsh Dam #6	Dam
Charleston	Charleston State Area Marsh Dam #7	Dam
Charleston	Charleston State Area Marsh Dam #9	Dam
Charleston	Charleston State Area Marsh Dam #8	Dam
Charleston	Charleston State Area Marsh Dam #10	Dam
Charleston	Herrick Fishpond Dam	Dam
Charleston	Frank Pond Dam	Dam
Florida	(173-0298)	Dam
Glen	Glen Volunteer Fire Dept	Municipal / Public Safety
Glen	New York State Police	Municipal / Public Safety
Glen	Montgomery County 911 Center	Municipal /DPW /Highway
Glen	Montgomery County Sherriff	Municipal / Public Safety
Glen	Montgomery County Building	Municipal /DPW /Highway
Glen	Lifenet (helipads)	Airport / Helipad
Glen	Fultonville Water Supply Dam	Dam
Glen	Vrooman Pond Dam	Dam
Mohawk	Town of Mohawk Fire Dept	Municipal / Public Safety

ASSET INVENTORY

Town/Village	Name	Subtype
Mohawk	Montgomery County EOC	Municipal /DPW /Highway
Mohawk	Hinkle-Pavlus Wildlife Marsh Dam	Dam
Mohawk	Barker Wildlife Marsh Dams A B & C	Dam
Mohawk	Fonda Reservoir Dam	Dam
Mohawk	Lock E-13 Dam at Fonda-Fultonville	Dam
Mohawk	Fonda Filtration Plant	PWS Well
Mohawk	Electrical Communication Substation	Sub/Switching Station
Mohawk	Village of Fonda Small Reservoir	Dam
Mohawk	AT&T Tower Property	Cell Tower
Mohawk	Montgomery County Fire Training Center	Government Office
Palatine	Beech-nut Dam	Dam
Palatine	New Cingular Wireless PCS, LLC	Cell Tower
Palatine	Cellco Partnership	Cell Tower
Root	Rural Grove Fire Dept.	Municipal / Public Safety
Root	USPS Sprakers Office	Post Office
Root	Root Highway Garage	Municipal /DPW /Highway
Root	Root Town Hall	Municipal /DPW /Highway
Root	Russel	Airport / Helipad
Root	Smith Wildlife Marsh Dam	Dam
Root	Young Wildlife Marsh Dam	Dam
Root	Klemme Farm Pond Dam	Dam
Root	Montgomery County Pond Dams A B & C	Dam
Root	Lou Bellinger Pond Dam	Dam
Root	George Vosburgh Pond Dam	Dam
Village of Canajoharie	Canajoharie Wastewater Treatment Plant	WWTP
Village of Fonda	Montgomery County Building	Municipal /DPW /Highway
Village of Fonda	Fonda Fultonville WWTP	WWTP
Village of Fonda	Montgomery County DPW Garage	Municipal /DPW /Highway
Village of Fonda	USPS Fonda Office	Post Office
Village of Fonda	Town of Mohawk Office Bldg/Highway Department	Municipal /DPW /Highway
Village of Fonda	Town of Mohawk DPW	Municipal /DPW /Highway
Village of Fonda	NYS Canal Corp	Government Office
Village of Fonda	Village of Fonda Canal Park	Municipal/ Park
Village of Fonda	SKT Realty Corporation	Bus/Truck Terminal
Village of Fonda	Montgomery County Court House	Government Office
Village of Fonda	Village of Fonda Office Bldg	Municipal / DPW / Highway
Village of Fonda	Village of Fonda DPW	Municipal / DPW / Highway
Village of Fonda	Frontier Switching Facility	Sub/Switching Station
Village of Fonda	Fulton Railroad Properties Inc	Rail
Village of Fultonville	Fultonville Fire Dept.	Municipal / Public Safety

Town/Village	Name	Subtype
Village of Fultonville	USPS Fultonville Office	Post Office
Village of Fultonville	Village of Fultonville Water Storage Tank	PWS Tank
Village of Fultonville	Village of Fultonville #1 under building	PWS Well
Village of Fultonville	Village of Fultonville #2 just east of property	PWS Well
Village of Palatine Bridge	Palatine Bridge Pumping Station	Pump Station

5.5.4 Economy

Table 5-10. Economic Community Assets in Cayadutta Creek/ Fly Creek/Schoharie Creek Subwatershed

Town/Village	Name	Subtype
Charleston	Saipua: The Farm at World's End	Homestead Working Farm
Charleston	Hummingbird Hills Winery	Winery
Charleston	Mulligan Creek Acres	Diversified Agriculture
Charleston	The Stockyard Public House	Restaurant
Glen	Pilot	Fuel
Mohawk	Fonda-Fultonville Central School District	Major Employer
Mohawk	Rode M-1 Industrial LLC	Major Employer
Mohawk	Varin Enterprises LLC	Equipment Supply
Mohawk	Regan Solar Farm	Energy
Mohawk	Grissom Solar Farm	Energy
Village of Canajoharie	Betty Beavers	Fuel
Village of Fonda	Dollar General	Food/ Grocery
Village of Fonda	Stewarts	Fuel
Village of Fonda	Cumberland Farms	Fuel
Village of Fonda	Mobil	Fuel
Village of Fonda	Kasson Keller Keymark	Major Employer
Village of Fonda	Montgomery County	Major Employer
Village of Fonda	Mancini Oil Depot	Fuel
Village of Fultonville	Betty Beavers	Fuel

5.5.5 Natural Resources

Table 5-11. Environmental Community Assets in Cayadutta Creek/ Fly Creek/Schoharie Creek Subwatershed

Town/Village	Name	Subtype
Charleston	Charleston State Forest	State Forest
Charleston	Lost Valley State Forest	State Forest
Charleston	Burbine Forest	Town Forest
Charleston	Mohawk Hudson Land Conservancy - Schoharie Creek Preserve	Land Conservancy

Charleston	Schoharie River Center & Nature Preserve	Land Conservancy
Charleston/Glen/Root	Rural Grove State Forest	State Forest
Root	Yatesville Falls State Forest	State Forest

5.6 EASTERN ALPLAUS KILL SUBWATERSHED COMMUNITY INVENTORY

5.6.1 Description

The Alplaus Kill subwatershed of the Mohawk River includes communities in the eastern section of Montgomery County including a small section of Mohawk, most of Florida, all of Amsterdam including the former village of Fort Johnson, incorporated into the Town of Amsterdam in 2023, Hagaman, and the City of Amsterdam.

The major water South of the Mohawk include:

- South Chuctanunda Creek
- Terwilleger Creek
- Waterbodies north of the Mohawk River include:
- Compaanen Kill
- Evas Kill
- Degraff Creek
- North Chuctanunda Creek
- Bunn Creek
- Dove Creek
- Fitzpatrick Creek
- Kayaderosseras Creek
- McQueen Creek
- Danascara Creek

Of interest is the origin of the term "Kill" for a creek, which is a term derived from Dutch *kil* , meaning "riverbed" or "water channel[90]. The origin of the native American word Chuctanuda means "Twin Steams." Its history and importance to the City of Amsterdam is captured in a 2018 article[91]. At least 13 dams spanned the creek between Harrowers north of Amsterdam and the Mohawk River to support industrial processes and power generation. During the peak of industrialization, the creek would be the color of whatever the carpets were that day. A four-mile recreational and educational North Chuctanunda Creek Trail now follows the stream ending at the historic Mohawk Carpet Upper Mill Powerhouse.

The following tables are a comprehensive summary of important community societal, infrastructural, and economic assets that are found within the Eastern Alplaus Kill Subwatershed. No environmental assets were specifically identified for Eastern Montgomery County.

5.6.2 People

Table 5-12. Societal Community Assets in Alplaus Kill Subwatershed

Town/City/Village	Name	Subtype
Amsterdam	Capstone	Senior Services

[90] https://en.wikipedia.org/wiki/Kill_(body_of_water)

ASSET INVENTORY

Town/City/Village	Name	Subtype
Amsterdam	Old Stone Methodist Church	Historic Site
Amsterdam	Mt Carmel Cemetery	Cemetery
Amsterdam	Amsterdam High School	School/ Public
Amsterdam	William B. Tecler Elementary School	School/ Public
Amsterdam	Fulmont Head Start	School/ Public
Amsterdam	Wilkinson Residential Health	Senior Services
Amsterdam	Amsterdam United Methodist Church	Church
Amsterdam	Cranesville Reformed Church	Church
Amsterdam	Marselis Cemetery	Cemetery
Amsterdam	Good Shepherd Cemetery Amsterdam	Cemetery
Amsterdam	St Casimir's Cemetery	Cemetery
Amsterdam	Old Saint Joseph's Cemetery	Cemetery
Amsterdam	St John's Cemetery	Cemetery
Amsterdam	Carondelet Regional Medical, Pc	Medical Facility
Amsterdam	Mohawk Valley Multi Specialty Medical Group Pllc	Medical Facility
City of Amsterdam	Marie Curie Middle School	School/ Public
City of Amsterdam	William Barkley School	School/ Public
City of Amsterdam	St. Mary's Church	Church
City of Amsterdam	Calvary Assembly of God Church	Church
City of Amsterdam	United Way-Montgomery County	Food Pantry
City of Amsterdam	St. Mary's Hospital	Medical Facility
City of Amsterdam	Saint Mary's Institute	School/ Private
City of Amsterdam	Montessori School of Amsterdam	School/ Private
City of Amsterdam	Clara S. Bacon School	School/ Public / Special Needs
City of Amsterdam	Lynch Middle School	School/ Public
City of Amsterdam	Raphael J. McNulty Elementary School	School/ Public
City of Amsterdam	Annex	School/ Public
City of Amsterdam	Central Administration Building (CAB)	School/ Public
City of Amsterdam	Walter Elwood Museum	Historic Site
City of Amsterdam	Guy Park Manor	Historic Site
City of Amsterdam	Love City Church	Church
City of Amsterdam	United Presbyterian Church	Church
City of Amsterdam	Crossroads Community Church	Church
City of Amsterdam	Trinity Evangelical Lutheran Church	Church
City of Amsterdam	Our Lady of Mt. Carmel Church	Church
City of Amsterdam	Covenant Presbyterian Church	Church
City of Amsterdam	Step of Faith Church	Church
City of Amsterdam	Lord of the Harvest Church	Church

[91] https://dailygazette.com/2018/12/14/cudmore-the-creek-that-helped-amsterdam-prosper/

ASSET INVENTORY

Town/City/Village	Name	Subtype
City of Amsterdam	Freedom Life Baptist Church	Church
City of Amsterdam	St Ann's Episcopal Church	Church
City of Amsterdam	Freedom Church	Church
City of Amsterdam	St Luke's Lutheran Church	Church
City of Amsterdam	Vast Church	Church
City of Amsterdam	Pilgrim Holiness Church	Church
City of Amsterdam	The Amsterdam Seventh-day Adventist Church	Church
City of Amsterdam	First Baptist Church	Church
City of Amsterdam	Catholic Charities - Montgomery - Food Distribution Center	Food Pantry
City of Amsterdam	Montgomery County Office for The Aging - Food Distribution Center	Food Pantry
City of Amsterdam	Fulmont Community Action - Food Distribution Center	Food Pantry
City of Amsterdam	AMEN Food Pantry - Food Distribution Center	Food Pantry
City of Amsterdam	Amsterdam Free Library	Library
City of Amsterdam	Mohawk Terrace Apartments	Affordable Housing
City of Amsterdam	Colonial Square I	Affordable Housing
City of Amsterdam	Amsterdam Rehabilitation	Affordable Housing
City of Amsterdam	New Amsterdam Apartments	Affordable Housing
City of Amsterdam	Rivercrest Commons	Affordable Housing
City of Amsterdam	Fairview Cemetery	Cemetery
City of Amsterdam	Amsterdam Funeral Chapel	Mortuaries
City of Amsterdam	Amsterdam Funeral Chapel	Mortuaries
City of Amsterdam	Rossi Vincent J Funeral Home	Mortuaries
City of Amsterdam	De Stefano Funeral Home	Mortuaries
City of Amsterdam	Betz, Rossi, Bellinger & Stewart Funeral Homes	Mortuaries
City of Amsterdam	Hometown Health Centers Amsterdam	Medical Facility
City of Amsterdam	Eastern Med, LLC.	Medical Facility
City of Amsterdam	St. Mary's Urology Health Center	Medical Facility
City of Amsterdam	Montgomery County ARC	Special Needs
City of Amsterdam	Henry Thomas House	Historic Site
Florida	Queen Anne's Parsonage	Historic Site
Florida	Fort Hunter Free Library	Library
Florida	Florida Reformed Church	Church
Florida	Family Bible Church	Church
Florida	Green Cemetery	Cemetery
Mohawk	Pine Grove Cemetery	Cemetery
Village of Fort Johnson*	Old Fort Johnson National Historic Landmark	Historic Site
Village of Fort Johnson*	St Mary's Cemetery	Cemetery
Village of Fort Johnson*	St Joseph's Cemetery	Cemetery

Town/City/Village	Name	Subtype
Village of Hagaman	Building Blocks	Childcare
Village of Hagaman	Sunshine Kids Corner	Childcare
Village of Hagaman	St. Stephen's Catholic Church	Church
Village of Hagaman	Lil' Firecrackers	Childcare
Village of Hagaman	Hagaman Mills Cemetery	Cemetery

5.6.3 Built Environment

Table 5-13. Infrastructural Community Assets in Alplaus Kill Subwatershed

Town/City/Village	Name	Subtype
Amsterdam	Cranesville Fire Dept.	Municipal / Public Safety
Amsterdam	USPS Tribes Hill Office	Post Office
Amsterdam	Amsterdam Airfield	Airport / Helipad
Amsterdam	Fort Johnson Fire CO	Municipal / Public Safety
Amsterdam	Rostowski Pond Dam	Dam
Amsterdam	Antlers Country Club Pond Dam	Dam
Amsterdam	Amsterdam Diversionary Dam	Dam
Amsterdam	Kellogg Reservoir Dam	Dam
Amsterdam	Harrower Pond Dam	Dam
Amsterdam	New Cingular Wireless PCS, LLC	Cell Tower
Amsterdam	Perth Rd/Route 30 Electrical Substation	Sub/Switching Station
Amsterdam	Wallins Corner Pump Station	Pump Station
Amsterdam	Country Ridge Pump Station	Pump Station
Amsterdam	Log City Pump Station	Pump Station
City of Amsterdam	Amsterdam Public Safety / Police Department	Municipal / Public Safety
City of Amsterdam	City of Amsterdam DPW	Municipal /DPW /Highway
City of Amsterdam	USPS Amsterdam Office	Post Office
City of Amsterdam	Amsterdam Fire Dept.	Municipal / Public Safety
City of Amsterdam	Amsterdam (CSX) / (AMS)	Rail
City of Amsterdam	Amsterdam Pump Station West Side	Pump Station
City of Amsterdam	Amsterdam Pump Station East Side	Pump Station
City of Amsterdam	Amsterdam Pump Station South Side	Pump Station
City of Amsterdam	Amsterdam Pump Station Main	Pump Station
City of Amsterdam	Church Street Electrical Substation	Sub/Switching Station
City of Amsterdam	Amsterdam WTP	PWS Treatment
City of Amsterdam	Amsterdam St. Mary's	Airport / Helipad
City of Amsterdam	Amsterdam Wastewater Treatment Plant	WWTP
City of Amsterdam	Smeallie Dam	Dam
City of Amsterdam	Mohasco Dam	Dam
City of Amsterdam	Harrower Mill Dam	Dam

City of Amsterdam	Amsterdam Ice Pond Dam	Dam
City of Amsterdam	(189-0270f)	Dam
City of Amsterdam	(189-0270g)	Dam
City of Amsterdam	Brookside Reservoir Dam	Dam
City of Amsterdam	Kellogg Dam	Dam
City of Amsterdam	Lock E-11 Dam at Amsterdam	Dam
City of Amsterdam	Amsterdam, City	PWS Well
City of Amsterdam	Locust Tank	PWS Tank
City of Amsterdam	Techler Tank	PWS Tank
Florida	Fort Hunter Fire Dept.	Municipal / Public Safety
Florida	Town of Florida Fire Dept.	Municipal / Public Safety
Florida	Florida Dept of Public Works	Municipal /DPW /Highway
Florida	Slezak Farm Pond Dam	Dam
Florida	Lock E-10 Dam at Cranesville	Dam
Florida	Amazon Sewer Pump Station	Pump Station
Florida	Broadway Ext Water Pump Station	Pump Station
Florida	Water Tower	PWS Tank
Mohawk	Tribes Hill Fire Dept.	Municipal / Public Safety
Mohawk	Lock E-12 Dam at Tribes Hill	Dam
Mohawk	Frontier Communications Building	Telecommunications
Village of Fort Johnson*	Fort Johnson Fire CO	Municipal / Public Safety
Village of Fort Johnson*	USPS Fort Johnson Office	Post Office
Village of Fort Johnson*	Brant St Wastewater Pump Station	Pump Station
Village of Fort Johnson*	Fort Johnson Rd Wastewater Pump Station	Pump Station
Village of Hagaman	Hagaman Fire Dept	Municipal / Public Safety
Village of Hagaman	USPS Hagaman Office	Post Office
Village of Hagaman	Harrower Dam #1	Dam
Village of Hagaman	Harrower Lower Dam	Dam

5.6.4 Economy

Table 5-14. Economic Community Assets in Alplaus Kill Subwatershed

Town/City/Village	Name	Subtype
Amsterdam	Market 32	Food/ Grocery
Amsterdam	Walmart	Food/ Grocery
Amsterdam	Hannaford	Food/ Grocery
Amsterdam	Sunoco Gas Station	Fuel
Amsterdam	Exxon	Fuel
Amsterdam	The Home Depot	Hardware
Amsterdam	Lowe's Home Improvement	Hardware
Amsterdam	Greater Amsterdam School District	Major Employer

Town/City/Village	Name	Subtype
Amsterdam	Amsterdam Printing & Litho (Holland USA)	Major Employer
Amsterdam	Power Pallet	Major Employer
Amsterdam	Harbor Freight	Hardware
City of Amsterdam	Dollar General	Food/ Grocery
City of Amsterdam	Dollar General	Food/ Grocery
City of Amsterdam	Stewarts	Fuel
City of Amsterdam	Mobil	Fuel
City of Amsterdam	Stewarts	Fuel
City of Amsterdam	Lucky Mini Mart	Fuel
City of Amsterdam	Exxon	Fuel
City of Amsterdam	Stewarts	Fuel
City of Amsterdam	Fastrac	Fuel
City of Amsterdam	Amsterdam Riverfront Hardware	Hardware
City of Amsterdam	Liberty Enterprises	Major Employer
City of Amsterdam	City of Amsterdam	Major Employer
City of Amsterdam	Breton Industries	Major Employer
Florida	Target DC	Major Employer
Florida	Dollar General	Major Employer
Florida	Beech Nut Nutrition	Major Employer
Florida	Hill & Markes	Major Employer
Florida	Alpin Haus	Major Employer
Mohawk	HFM BOCES	Major Employer
Mohawk	Fulton-Montgomery Community College	Major Employer
Village of Fort Johnson*	Stewarts	Fuel
Village of Hagaman	Rama — Home Helpers	Major Employer

* The Village of Fort Johnson was dissolved in 2023 and is now part of the Town of Amsterdam

5.7 MONTGOMERY COUNTY CRITICAL FACILITIES INVENTORY

A comprehensive inventory of critical facilities in Montgomery County was developed from various sources including the 2019 Hazard Mitigation Plan, input from the Planning Committees, direct communications with to specific facilities to update information for the 2024 HMP.

Critical Facilities are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard. As defined for this HMP, critical facilities include essential facilities, transportation systems, lifeline utility systems, high- potential loss facilities, and hazardous material facilities.

Essential facilities are a subset of critical facilities that include those facilities that are important to ensure a full recovery following the occurrence of a hazard event. For the County risk assessment, this category was defined to include police, fire, EMS, schools/colleges, shelters, senior facilities, and medical facilities.

5.8 ESSENTIAL FACILITIES

This section provides information on emergency facilities, hospital and medical facilities, shelters, schools, and senior care and living facilities.

5.8.1 Emergency Facilities

For the purposes of this Plan, emergency facilities include emergency operations centers (EOC), police, fire, and emergency medical services (EMS). Table 5-15 provide an inventory of emergency operations centers, police stations, fire stations and EMS, hospital facilities in Montgomery County**. Maps 5 A, B and C** display the location of these facilities based on the community asset inventory data and input from the Planning Committee.

Table 5-15. Emergency Facility Centers in Montgomery County[92]

Facility Name	Address	Jurisdiction	Cost (Structural Value) *	Bldg. Type	Backup Power
Amsterdam Public Safety	1 Guy Park Ave	Amsterdam (C)	$15,000,000	Concrete	Yes
Montgomery County Building	64 Broadway	Fonda	$1,000,000	Concrete	Yes
Amsterdam Police Department	1 Guy Park Avenue	Amsterdam (C)	$15,000,000	Concrete	Yes
Canajoharie Police Department	75 Erie Boulevard	Canajoharie (V)	$1,652,000	Concrete	Yes
Fort Plain Police Headquarters	168 Canal Street	Fort Plain	$1,652,000	Concrete	Yes
Montgomery County Sherriff	200 Clark Drive	Glen	$1,652,000	Concrete	Yes
St. Johnsville Police Department	16 Washington St	St. Johnsville (V)	$1,652,000	Concrete	Yes
New York State Police	3003 NY-5S	Fultonville		Concrete	Yes
St. Mary's Hospital		Amsterdam (C)	$8,260,000	Concrete	Yes
Amsterdam Fire Dept	2 Guy Park Ave Ext.	Amsterdam (C)	$15,000,000	Concrete	Yes
Cranesville Fire Dept	167 Riverview Rd	Amsterdam (T)	$708,000	Concrete	Yes
Fort Johnson Fire CO	Golf Course Rd	Amsterdam (C)	$708,000	Concrete	Yes
Ames Fire Dept	595 Latimer Hill Rd	Ames	$708,000	Concrete	Yes
Canajoharie Fire Dept	75 Erie Blvd	Canajoharie (V)	$708,000	Concrete	Yes
Burtonville Fire Dept	2052 Burtonville Rd	Esperance	$708,000	Concrete	Yes
Charleston Fire Dept	1412 East Lykers Rd	Sprakers	$708,000	Concrete	Yes
Town Of Mohawk Fire District	2553 State Highway 30A	Fonda	$708,000	Concrete	Yes
Fort Johnson Fire CO	4 Ft Johnson Ave	Fort Johnson	$708,000	Concrete	Yes

[92] *Source: Montgomery County GIS;*

Facility Name	Address	Jurisdiction	Cost (Structural Value) *	Bldg. Type	Backup Power
Glen Volunteer Fire Dept	134 Auriesville Rd	Glen	$708,000	Concrete	Yes
Hagaman Fire Dept	126 S Pawling St	Hagaman	$708,000	Concrete	Yes
South Minden Fire Dept	1029 State Highway 163	Fort Plain	$708,000	Concrete	Yes
Rural Grove Fire Dept.	1192 State Highway 162	Root	$708,000	Concrete	No
St. Johnsville Fire Dept	6 West Main Street	St. Johnsville (V)	$708,000	Concrete	Yes
Fort Hunter Fire Dept.	351 Main St.	Fort Hunter	$708,000	Concrete	Yes
Fort Plain Fire Dept.	168 Canal St.	Fort Plain	$708,000	Concrete	Yes
Fultonville Fire Dept.	10 Erie St.	Fultonville	$708,000	Concrete	No
Town of Florida Fire Dept.	6252 State Highway 30	Amsterdam	$708,000	Concrete	Yes
Tribes Hill Fire Dept.	280 Mohawk Dr.	Tribes Hill	$708,000	Concrete	Yes

Source(s): Montgomery County Planning Committee
Note: The structural value includes the building structure, but not the building content.

5.8.2 Schools and Shelters

Table 5-16 lists schools and shelters in the County.

Table 5-16. Schools and Shelters in Montgomery County

Facility Name	Address	Area	Enroll	Designated Shelter
Saint Mary's Institute	10 Kopernick Blvd	Amsterdam (C)	351	No
Montessori School of Amsterdam	74 Locust Ave	Amsterdam (C)	46	Yes
Amsterdam High School	140 Saratoga Ave	Amsterdam (T)	1145	Yes
Clara S. Bacon School	40 Henrietta Blvd	Amsterdam (C)	250	Yes
Lynch Middle School	53 Brandt Place	Amsterdam (C)	844	Yes
Marie Curie Middle School	9 Brice St	Amsterdam (C)	391	Yes
Raphael J. McNulty Elementary School	60 Brandt Place	Amsterdam (C)	406	Yes
William B. Tecler Elementary School	210 Northern Blvd	Amsterdam (T)	370	Yes
William Barkley School	66 De Stefano St	Amsterdam (C)	211	Yes
CAB	11 Liberty Street	Amsterdam		Yes
Canajoharie Senior High School	136 Scholastic Way	Canajoharie (V)	404	Yes
Canajoharie East Hill / Middle School	25 School District Rd	Canajoharie (V)	414	Yes
Faith Bible Academy	106 Crosby Road	Sprakers	31	No

Twin Mountain Amish School	163 Buel Road	Canajoharie (V)		Unknown
Facility Name	Address	Area	Enroll	Designated Shelter
Sunset View Amish School	184 Blaine Road	Canajoharie (V)		Unknown
McKinley Crossing Amish School	Corner of McKinley and Oswegatchie Road	Palatine Bridge		Unknown
Dygert Road Amish School	Dygert Road, near the corner of Gerhartz Road	Palatine Bridge		Unknown
Fonda-Fultonville Senior High School	112 Old Johnstown Rd	Mohawk	556	Yes
Fonda-Fultonville K-4 School	112 Old Johnstown Rd	Mohawk	578	Yes
Fonda-Fultonville 5-8 School	112 Old Johnstown Rd	Mohawk	517	Yes
Stone Arabia Amish Parochial School	RD #2 Stone Arabia Rd	Minden	23	Unknown
Harry Hoag School	25 High St	Fort Plain	648	Yes
Fort Plain High School	1 West St	Fort Plain	317	Yes
Saint Johnsville High School	44 Center Street	St Johnsville (V)		Yes

Source(s): Montgomery County Planning Committee; = Grade Schools (Primary and High Schools

5.8.3 Senior Care and Senior Living Facilities

Table 5-17 provides an inventory of senior facilities in the County.

Table 5-17
Senior Facilities in Montgomery County

Facility Name	Address	Area	Capacity	Backup Power
Capstone	302 Swart Hill Rd	Amsterdam (T		Yes
Arkell Hall	55 Montgomery St	Canajoharie (V)	24	Yes
Palatine Nursing Home	154 Lafayette St	Palatine Bridge	70	Yes
Palatine Village Apartments	Mary St	Palatine Bridge		No
St. Johnsville Nursing Home	Timmerman Ave	St. Johnsville (V)	120	Yes
Wilkinson Residential Health	4988 NY-30	Amsterdam		Yes
Fonda Terrace Apartments	11 Barber St	Fonda (V)		TBD

5.8.4 Transportation Systems

This section presents available inventory data for evacuation routes, airports, railways, and other transportation systems for Montgomery County.

Evacuation Routes: Highway, Roadways and Associated Systems

The major route connecting communities in Montgomery County is the New York State Thruway (I-90). Currently there are no designated evacuation routes.

Airports and Heliports

Table 5-18 lists the airports and helipads in Montgomery County.

Table 5-18. Airports/Helipads in Montgomery County

Facility Name	Jurisdiction (Location)
Russell	Root
Hiserts Airpark Inc.	Palatine
Amsterdam Airfield	Amsterdam (T)
Hickory Acres	Minden
Tomcat	Minden
Lifenet (helipads)	Glen (T)
Amsterdam St. Mary's	Amsterdam (C)
Amsterdam	Greater Amsterdam School District
Amsterdam	Amsterdam Printing & Litho (Holland USA)
Amsterdam	Power Pallet

Source(s): Montgomery County Planning Committee;

Railway

Rail transportation in Montgomery County includes both passenger and freight service. Amtrak services passenger needs, while CSX supplies freight services to major markets in the Northeastern U.S. and Canada. (MCIDA, 2007). Additionally, CSX and Amtrack lines traverse Montgomery County (Planning Committee Input).

5.8.5 Public Transportation

The Montgomery Area Express ("the MAX") runs between St. Johnsville and the City of Amsterdam. The Bus runs on a Monday through Friday schedule (MCPD, 2008).

The Gloversville Transit system services the Cities of Gloversville, Johnstown and Amsterdam, the Crossroads and Johnstown Industrial Parks and Fulton-Montgomery Community College (Gloversville Transit System 2022).

In 2008 an Intercounty route to Amsterdam was set up to cut Medicaid Transport costs and to service the growing RT. 30 corridor. A paratransit service was started in 1994 to service disabled people of the area. This is a curb-to-curb reservation service to supply transportation to appointments, shopping, etc. The paratransit service is available during the hours the fixed routes are in operation.

5.8.6 *Lifeline Utility Systems*

This section presents potable water, wastewater, and energy resource utility system data. Due to heightened security concerns, local utility lifeline data sufficient to complete the analysis have only partially been obtained.

Potable Water Supply and Wastewater Facilities

Table 5-19 summarizes all potable water facilities, wells, water tanks, the wastewater treatment facilities and wastewater pump stations within Montgomery County.

Table 5-19. Montgomery County Potable Water Supply and Wastewater Facilities

Facility Name	Address	Jurisdiction (Location)	Backup Power
Potable Water Facilities			
Fort Plain Potable Water Facility	Budnick Road	Fort Plain	No
Canajoharie (V) WTP	419 Gerhartz Road	Palatine Bridge	No
Lasselville Pump Station	Lasselville Road	St. Johnsonville	No
Amsterdam WTP	Quist Road	Amsterdam (C)	Yes
Potable Water Wells & Tanks			
Clyde Street Water Storage Tank	Wiles Park, Clyde Street	Fort Plain	N/A
Fisk Hill Road Water Storage Tank	Fisk Hill Road	Fort Plain	N/A
Garfield Street Water Storage Tank	Garfield Street	Fort Plain	N/A
Fort Plain Pumping Station	13 River Street	Fort Plain	N/A
Water Tower	Nutritious Pl / 5S	Florida	N/A
Broadway Ext Water Pump Station	83 Broadway Ext.	Florida	N/A
Locust Tank	Locus Ave	Amsterdam (C)	N/A
Techler Tank	Shuttleworth Ave	Amsterdam (C)	N/A
Canajoharie Water Works	Wintergreen Park Rd	Canajoharie (V)	N/A
Fonda Filtration Plan	361 Reservoir Rd	Mohawk	N/A
Village of Fort Plain/Lincoln Wells	Witter St	Fort Plain	N/A
Village of Fultonville Water Storage Tank	Van Epps Rd	Fultonville	N/A
Village of Fultonville #1 under building	Erie St	Fultonville	N/A
Village of Fultonville #2 just east of property	Erie St	Fultonville	N/A
Village of Palatine Bridge	State Hwy 10	Palatine Bridge	N/A
Village of St Johnsville Well	State Hwy 5	St Johnsville	N/A
Wastewater Treatment Facilities			
Amsterdam Wastewater Treatment Plant	250 Brookside Ave	Amsterdam (C)	Yes

ASSET INVENTORY

Facility Name	Address	Jurisdiction (Location)	Backup Power
Canajoharie Wastewater Treatment Plant	63 Incinerator Rd	Canajoharie (V)	Yes
Fonda Fultonville WWTP	29 Bridge St S	Fonda	Yes
Montgomery CO SD#1 STP	28 Old Station Rd	Nelliston	Yes
Private Wastewater Treatment Plant	Marina Dr	St Johnsville (V)	
St. Johnsville Wastewater Treatment Plant	Marina Dr	St. Johnsville (V)	Yes
Wastewater Pump Stations			
Amazon Sewer Pump Station	5S	Florida	
Dollar General Sewer Pump Station	5S	Florida	
Amsterdam Pump Station West Side	West Main St	Amsterdam (C)	Yes
Amsterdam Pump Station South Side	Erie Street/Circle	Amsterdam (C)	Yes
Amsterdam Pump Station East Side	Swan St	Amsterdam (C)	Yes
Amsterdam Pump Station Main	Brookside Ave	Amsterdam (C)	Yes
Wallins Corner Pump Station	209 Wallins Corner Road	Amsterdam (T)	
Country Ridge Road	108 N Country Ridge Dr	Amsterdam (T)	
Log City Pump Station	215 Log City Rd	Amsterdam (T)	
Brant St Wastewater Pump Station	Brant Ave	Fort Johnson	
Canal St Pump Station	Canal St	Fort Plain (V)	Yes, portable
Fort Johnson Rd Wastewater Pump Station	Fort Johnson Rd	Fort Johnson	
Fort Plain Reservoir/Pump	Budnick Road	Fort Plain	Yes, portable
Hancock Pump Station	Hancock St	Fort Plain	Yes
Nelliston Pump Station	River St	Nelliston	TBD
Willett St Sewer Pump Station	Willet St	Fort Plain	Yes
Rouse Rd Sewer Pump Station	Near Rouse Rd/ Clark Ave	Fort Plain	No
Railroad St Pump Station	Railroad St	Nelliston	No
Palatine Bridge Pump Station	Route 5/West Grand St	Palatine Bridge	Yes, portable
Palatine Bridge Pump Station	Route 5/ East Grant St	Palatine Bridge	Yes
Spring St Pump Station	Spring St	Palatine Bridge	Yes, portable
Village of Palatine Bridge Pump Station	Mary St	Palatine Bridge	Yes, portable

Source(s): 2016 Hazard Mitigation Plan

Energy Resources

National Grid is the primary electric and gas utility company in Montgomery County. All provided and available utility information was included as part of the risk assessment for this HMP. Table 5-20 summarizes the energy resources in Montgomery County.

Table 5-20. Energy Resources in Montgomery County

Electric Sub/Switching Station	Location (Municipality)
Perth Rd/Route 30 Electrical Substation	Amsterdam (C)
Church Street Electrical Substation	Amsterdam (C)
Canajoharie Substation #1	Canajoharie (T)
Electrical Communication Substation	Mohawk
Frontier Switching Facility	Fonda (T)
Electrical Communication Substation	St Johnsville

Source(s): Montgomery County Planning Committee

Communication Resources

Communications is provided by AT&T, Time-Warner Cable, and others. All provided and available communications resources information was included as part of the risk assessment for this HMP.

5.8.1 High-Potential Loss Facilities

High-potential loss facilities include dams, levees, nuclear power plants, military installations, and hazardous materials (HAZMAT) facilities. No levees, nuclear power plants or military installations were identified in the County.

According to the U.S. Army Corps of Engineers (USACE) National Inventory of Dams (NID), there are 13 dams found in Montgomery County, two of which are classified with a high-hazard potential. Dams are discussed in detail in Section 4.3.5 Man-made Dams and Culvert Failure.

6 Vulnerability Assessment

6.1 VULNERABILITY ASSESSMENT OVERVIEW

B3 b

The purpose of the vulnerability assessment is to estimate the extent or magnitude of potential damage from natural hazards of varying types and intensities. Section 6 ties together the hazards identified in Section 4 and the community assets identified in Section 5 to estimate the potential losses that Montgomery County could experience during a natural hazard event. A vulnerability assessment provides a foundation for the community's decision makers to evaluate mitigation measures that can help reduce the impacts of a hazard when one occurs (Section 8 of this plan).

There are four assessments included in **Section 6** of the 2024 Montgomery County Multi-Jurisdictional Natural Hazards Mitigation Plan:

1. **HAZUS-Multi Hazards (MH) Assessment:** Hazus is a standardized hazard assessment methodology created by FEMA. This vulnerability assessment includes estimation of damages for hurricanes and earthquakes using HAZUS-MH software and is described in **Section 6.2**.

2. **Exposure Assessment of Parcels and Building Flood Risk**: This assessment was completed using GIS analysis for existing flooding and future flooding due to climate change for the entire County based on 2021 assessor's data, and the most recent FEMA Flood Zones. This assessment is described in **Section 6.3.1**.

3. **Vulnerability Assessment for Future Development:** This assessment was completed for areas slated for future development, identifying natural hazard risk from hurricanes, earthquakes, and flooding, and is further described in **Section 6.4**

4. **Culvert Replacement Prioritization:** This assessment was completed for culverts that were inventoried and assessed by the County to identify vulnerable culverts that would benefit from mitigation strategies. This assessment is further described in **Section 6.5.**

6.1.1 Methodology and Tools

To address the requirements of DMA 2000 and better understand potential vulnerability and losses associated with hazards of concern, Montgomery County used standardized tools, combined with local, state, and federal data and expertise to conduct the risk assessment. Our standardized tools used to support risk assessment are described below.

Hazards U.S. – Multi-Hazard (HAZUS-MH)

Hazus-MH (multiple-hazards) is a computer program developed by FEMA to estimate losses due to a variety of natural hazards. For the purposes of this Plan, Hazus-MH was used to estimate losses due to hurricane winds and earthquakes. The following overview of Hazus-MH is taken from the FEMA website:[93]

"Hazus is a nationally applicable standardized methodology that estimates potential losses from earthquakes, hurricane winds, and floods. FEMA developed Hazus under contract with the National Institute of Building Sciences (NIBS).

[93] For more information on the Hazus-MH software, go to https://www.fema.gov/flood-maps/products-tools/hazus

VULNERABILITY ASSESSMENT

Hazus uses state-of-the-art GIS software to map and display hazard data and the results of damage and economic loss estimates for buildings and infrastructure. It also allows users to estimate the impacts of earthquakes, hurricane winds, and floods on populations.

Estimating losses is essential to decision-making at all levels of government, providing a basis for developing mitigation plans and policies, emergency preparedness and response, and recovery planning."

There are three modules included with the Hazus-MH Version 6.0 software: hurricane wind, flooding, and earthquakes, which reference 2020 Census Data. There are also three levels at which Hazus-MH can be run. Level 1 uses national baseline data and is the quickest way to begin the risk assessment process. The analysis in this Plan was completed using Level 1 data.

Level 1 relies upon default data on building types, utilities, transportation, etc. from national databases as well as census data. While the databases include a wealth of information on the community, it does not capture all relevant information. In fact, the HAZUS training manual notes that the default data is "subject to a great deal of uncertainty."

However, for the purposes of this Plan, the analysis is useful. This Plan is attempting to indicate the possible extent of damage due to certain types of natural disasters and to allow for a comparison between different types of disasters. Therefore, this analysis should be considered a starting point for understanding potential hazards and current vulnerabilities.

The default demographic data and general building stock data, based on Census 2020, within HAZUS-MH were used. The critical facility inventory (essential facilities, utilities, transportation features, high-potential loss facilities and user-defined facilities) were also used to update the flood hazard vulnerability assessment.

Flood: A Level 1 HAZUS-MH 6.0 analysis was performed in 2023 using the riverine model to analyze the flood hazard losses associated with flood events for Montgomery County. The 100- and 500- year mean return periods were examined. Please note that the data is not cumulative between 100- and 500-year events. The results are included in **Section 6.2.1.**

Hurricane: A Level 1 HAZUS-MH 6.0 analysis was performed in 2023 to analyze the wind hazard losses associated with hurricanes and other severe storm types for Montgomery County. Probabilistic hurricane conditions were used for Hazus-MH 6.0 calculations of hurricane damages for storm condition return frequencies of 10-, 20-, 50-,100-, and 1,000-years. The 100- and 500- year mean return periods were included in **Section 6.2.2**.

Earthquake: A Level 1 HAZUS-MH 6.0 analysis was performed in 2023 to analyze the earthquake hazard losses for Montgomery County. The largest earthquake in New York History occurred in Au Sable Forks in northeastern New York on April 20,2022 with a magnitude of 5.3. For the loss estimate calculated using Hazus-MH 6.0, a Level 1 analysis is a basic estimate of earthquake losses based on national databases and using the default data in the model. The 100-, 500- and 2,500-year mean return periods were examined. The results are included in **Section 6.2.3**.

Disclaimer: For this risk assessment, the loss estimates, exposure assessments, and hazard-specific vulnerability evaluations rely on the best available data and methodologies. Uncertainties are inherent in any loss estimation methodology and arise in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties also result from the following:

1. Approximations and simplifications necessary to conduct such a study
2. Incomplete or dated inventory, demographic, or economic parameter data

3. The unique nature, geographic extent, and severity of each hazard
4. Mitigation measures already employed by Montgomery County and the amount of advance notice residents must prepare for a specific hazard event

These factors can result in a range of uncertainty in loss estimates, by a factor of two or more. Therefore, potential exposure and loss estimates are approximate. These results do not predict precise results and should be used to understand relative risk. Over the long term, Montgomery County will collect additional data to assist in developing refined estimates of vulnerabilities to natural hazards.

6.2 HAZUS RESULTS

6.2.1 Results - Floods

For the purposes of this Plan a 100-year and a 500-year event storm were chosen to illustrate damages from flooding. The 500-year is a "worst case scenario" to evaluate the impacts of storms that might be more likely in the future, as we enter a period of more intense and frequent storms due to climate change. Hazus evaluates building damages, shelter needs and debris and tree accumulation in addition to economic losses from building damages. **Table 6.1** below presents estimated damages from flood within Montgomery County.

Table 6.1. Estimated Damages from Floods- Montgomery County

Damage Categories	100-Year Storm Event	500-Year Storm Event
Building Characteristics		
Estimated total number of damaged buildings	66	58
Building Damages		
# of buildings sustaining minor damage	26	27
# of buildings sustaining moderate damage	37	29
# of buildings sustaining severe damage	1	1
# of buildings destroyed	1	1
Population Needs		
# of households displaced	707	639
# of people seeking short-term public shelter	198	198
Debris		
Building debris generated (tons)	2,312	2,024
Value of Damages (Millions of Dollars)		
Total direct economic losses from building damage	$179	$131

6.2.2 Results – Hurricanes

The numbers and values of vulnerable assets for the hurricane/tropical storm hazard are total exposure values, assuming that all buildings and populations would be equally exposed to this hazard. A 100-year and 500-year event storm was modeled to evaluate damages, shelter needs and debris and tree accumulation in addition to economic losses from building damages. **Table 6.2** below presents estimated damages from hurricanes.

Table 6.2. Estimated Damages from Hurricanes

Damage Categories	100-Year Storm Event	500-Year Storm Event
Building Characteristics		
Estimated total number of buildings- Hazus	21,234	21,234
Building Damages		
# of buildings sustaining minor damage	16	182
# of buildings sustaining moderate damage	0	8
# of buildings sustaining severe damage	0	1
# of buildings destroyed	0	0
Population Needs		
# of households displaced	0	0
# of people seeking short-term public shelter	0	0
Debris		
Building debris generated (tons)	1	779
Tree debris generated (tons)	247	1,655
Value of Damages (Millions of Dollars)		
Total direct economic losses from building damage	1.8	15

6.2.3 Results - Earthquakes

The Hazus earthquake module allows users to define a number of different types of earthquakes and to input a number of different parameters. The module is more useful where there is a great deal of data available on earthquakes. In New York, defining the parameters of a potential earthquake is much more difficult due to a lack of historical data to provide a realistic vulnerability analysis.

The earthquake module does offer the user the opportunity to select a probabilistic hazard. For the purposes of this Plan, two earthquake scenarios were used: an earthquake with a 5.0 magnitude and 500 and 2,500 Mean Year Return periods. **Table 6.3** below presents estimated damages from earthquakes.

Table 6.3. Estimated Damages from Earthquakes for Montgomery County

Damage Categories	500-MRP	2,500-MRP
Building Characteristics		
Estimated total number of buildings - Hazus	21,234	21,234
Building Damages		
# of buildings with no damage	20,907	19,379
# of buildings sustaining slight damage	255	1,342
# of buildings sustaining moderate damage	66	450
# of buildings sustaining extensive damage	6	58
# of buildings completely damaged	0	5
Population Needs		
# of households displaced	3	30
# of people seeking short-term public shelter	2	18

Damage Categories	500-MRP	2,500-MRP
Debris		
Debris generated (tons)	3,000	20,000
Value of Damages (Millions of dollars)		
Total direct building economic loss	$6.8	$88.1

6.3 EXPOSURE ASSESSMENT OF PARCEL AND BUILDING FLOOD RISK

An exposure assessment was used to estimate losses due to flooding. An exposure assessment is a geospatial evaluation where geographic areas and hazards are mapped together to show the physical relationship to one another. The geospatial relationship can also be used to quantify the number and value of parcels and structures within the hazard area to estimate losses. For flooding, a GIS-based exposure analysis was used to identify potential losses of developed properties that fall within Montgomery County's 100-year and 500-year flood zones, as defined in **Section 4.3.1.1**.

The analysis for current conditions was based on Montgomery County 2021 Assessor's data and the most recent FEMA approved flood zones (1/19/2018). Future flooding with climate change was evaluated using the extent of the 500-year flood zone. Parcels located in flood zones represent about 20% of the total building value of development in Montgomery County.

6.3.1 Existing Flood Vulnerability Assessment Methodology

The vulnerability assessment will identify locations that are at risk from flooding inundation based on current and historic flooding extent as defined by the FEMA 100-year flood plain and predicted future flooding extent using the 500-year flood. The following assumptions were used in the methodology.

Risk of Current Flooding- FEMA Analysis for Developed Parcels, and Community Assets

The current risk of flooding is evaluated based on the most recently approved FEMA flood zones (dated 1/19/2018).

- Developed properties and Community Assets currently within the FEMA mapped A, and AE zones were identified, including areas with defined base flood elevations or inundation depth.
- Determination of risk was based on whether a mapped building is within the zone, not based on whether the parcel boundary alone is within the zone.
- The total building value for A zone parcels is included in Table 6.4. Individual properties and land use classifications were not identified for privacy.
- Community Asset located within FEMA flood zones were also identified.
- This exposure assessment results for the flood hazard are not cumulative. In other words, the number of buildings intersecting the 0.2-percent-annual-chance floodplain (500 year) does not include the number of buildings intersecting the 1-percent-annual-chance floodplain (100 year). Numbers and values of assets for events of increasing magnitude should be read as "in addition to" the preceding magnitudes.

Risk of Future Flooding- FEMA Analysis for Developed Parcels

- Developed properties currently within the FEMA mapped X500 zones will be identified following the same selection criteria as described above for A zone analysis.

6.3.2 Results

Out of a total of 19,150 developed parcels in Montgomery County about 10% (1910) are in the FEMA 100-year flood plain. Based on the building value of the developed property, estimated potential losses for inland areas are tabulated in **Table 6.4**.

Table 6.4 Flooding Vulnerability in Montgomery County Current Development- Building Values

FEMA 100-year Flood Zone	Number of Developed Parcels within the Zone	Building Value
A	732	$146,772,146
AE	1178	$250,580,170
Total	1910	$397,352,316

A total of 1,295 of Montgomery County's developed parcels are located within inland or riverine 500-year flood hazard areas. Out of a total of 19,150 developed parcels in Montgomery County about 7% are located within the FEMA 500-year flood plain. Based on the building value of the developed property, estimated potential losses for inland areas are tabulated in **Table 6.5**.

Table 6.5 Future Flooding Vulnerability in Montgomery County Future Development- Building Values

FEMA 500-year Flood Zone	Number of Developed Parcels within the Zone	Building Value
X500	1,295	$277,596,368

The total value of buildings located within flood zones is $674,948,684, representing about 20% of the total developed building value in Montgomery County ($3,250 Million).

6.3.3 Community Assets within Flood Zones

Out of a total of 462 identified community assets within Montgomery County, eighty-two (18%) are in FEMA flood zones and as such are vulnerable to future flooding. A total of sixty-four community assets were located within the 100-year flood zone and are highly vulnerable to flooding. Seventeen of these community assets are designated as essential facilities. Table 6.6 provides a breakdown by jurisdiction, type, subtype, and planning areas.

Table 6.6 Community Assets in Montgomery County with High Vulnerability to Flooding

Town/Village	Name	Subtype	Planning Area
Amsterdam	Harrower Pond Dam	Dam	East
Canajoharie	(158-0505)	Dam	West
Charleston	Charleston State Area Marsh Dam #6	Dam	Central
City of Amsterdam	Guy Park Manor	Historic Site	East
City of Amsterdam	Smeallie Dam	Dam	East
City of Amsterdam	Mohasco Dam	Dam	East
City of Amsterdam	Harrower Mill Dam	Dam	East
City of Amsterdam	(189-0270f)	Dam	East
City of Amsterdam	(189-0270g)	Dam	East

Town/Village	Name	Subtype	Planning Area
City of Amsterdam	Lock E-11 Dam at Amsterdam	Dam	East
Florida	(173-0298)	Dam	Central
Florida	Lock E-10 Dam at Cranesville	Dam	East
Glen	Pilot	Fuel	Central
Glen	Sunflower Safari Childcare	Childcare	Central
Mohawk	Fonda Reservoir Dam	Dam	Central
Mohawk	Lock E-13 Dam at Fonda-Fultonville	Dam	Central
Mohawk	Village of Fonda Small Reservoir	Dam	Central
Palatine	(158-0483)	Dam	West
Palatine	(158-0484)	Dam	West
Root	Young Wildlife Marsh Dam	Dam	Central
Village of Canajoharie	One Stop Shop Gas	Fuel	West
Village of Canajoharie	Sunoco Gas Station	Fuel	West
Village of Canajoharie	Betty Beavers	Fuel	Central
Village of Canajoharie	Richardson Brands	Major Employer	West
Village of Canajoharie	St. John's & St. Mark's Lutheran Church	Church	West
Village of Canajoharie	St. Mary's Healthcare - Canajoharie Health Center	Medical Facility	West
Village of Canajoharie	USPS Canajoharie Office	Post Office	West
Village of Canajoharie	*Canajoharie Fire Department*	*Municipal / Public Safety*	*West*
Village of Canajoharie	*Canajoharie Police Department*	*Municipal / Public Safety*	*West*
Village of Canajoharie	*Canajoharie Wastewater Treatment Plant*	*WWTP*	*Central*
Village of Fonda	Stewarts	Fuel	Central
Village of Fonda	Montgomery County	Major Employer	Central
Village of Fonda	1836 Montgomery County Courthouse	Historic Site	Central
Village of Fonda	Caughnawaga Reformed Church	Historic Site	Central
Village of Fonda	*Montgomery County Building*	*Municipal /DPW /Highway*	*Central*
Village of Fonda	*Montgomery County DPW Garage*	*Municipal /DPW /Highway*	*Central*
Village of Fonda	Town of Mohawk Office Bldg/Highway Department	Municipal /DPW /Highway	Central
Village of Fonda	Town of Mohawk DPW	Municipal /DPW /Highway	Central
Village of Fonda	Montgomery County Agric Society	Fairgrounds/Racetrack	Central
Village of Fonda	NYS Canal Corp	Government Office	Central
Village of Fonda	Village of Fonda Canal Park	Municipal/ Park	Central
Village of Fonda	SKT Realty Corporation	Bus/Truck Terminal	Central
Village of Fonda	*Frontier Switching Facility*	*Switching Station*	*Central*
Village of Fonda	*Fulton Railroad Properties Inc*	*Rail*	*Central*
Village of Fort Johnson	*Fort Johnson Rd Wastewater Pump Station*	*Pump Station*	*East*
Village of Fort Plain	Family Dollar	Food/ Grocery	West
Village of Fort Plain	Stewarts	Fuel	West
Village of Fort Plain	Fort Plain True Value Hardware	Hardware	West
Village of Fort Plain	Fort Plain Free Library	Library	West
Village of Fort Plain	*Fort Plain Police Headquarters*	*Municipal / Public Safety*	*West*
Village of Fort Plain	*Willett St Sewer Pump Station*	*Pump Station*	*West*

Town/Village	Name	Subtype	Planning Area
Village of Fort Plain	Lock E-15 Dam at Fort Plain	Dam	West
Village of Fort Plain	Masonic Temple Building	Future Housing Complex	West
Village of Fort Plain	*Village of Fort Plain/ Lincoln Wells*	*PWS Well*	*West*
Village of Fort Plain	*Fort Plain Pumping Station*	*Water Pump Station*	*West*
Village of Fort Plain	*Canal Street Pumping Station*	*Pump Station*	*West*
Village of Fort Plain	*Hancock Pumping Station*	*Pump Station*	*West*
Village of Fultonville	Jackson & Betz Funeral Home	Mortuaries	Central
Village of Hagaman	Harrower Lower Dam	Dam	East
Village of Nelliston	Nelliston Pump Station	Pump Station	West
Village of Palatine Bridge	Lock E-14 Dam at Canajoharie	Dam	West
Village of Palatine Bridge	*Village of Palatine Bridge Pump Station*	*Pump Station*	*West*
Village of St. Johnsville	*St. Johnsville Wastewater Treatment Plant*	*WWTP*	*West*
Village of St. Johnsville	*Electrical Communication Substation*	*Sub/Switching Station*	*West*

*Italics indicate an essential facility

A total of eighteen community assets were located within the 500-year flood zone and are considered vulnerable to flooding in the future, when more intense flood events are anticipated. Five of these community assets are considered essential facilities. Table 6.7 provides a breakdown by jurisdiction, type, subtype, and planning areas.

Table 6.7 Community Assets in Montgomery County with Vulnerability to Future Flooding

Town/Village	Name	Subtype	Planning Area
City of Amsterdam	*Amsterdam (CSX) / (AMS)*	*Rail*	*East*
Village of Canajoharie	Faith Hope & Love Christian	Church	West
Village of Canajoharie	Canajoharie Library & Art Gallery	Library	West
Village of Fonda	*Fonda Fultonville WWTP*	*WWTP*	*Central*
Village of Fonda	USPS Fonda Office	Post Office	Central
Village of Fort Johnson	Old Fort Johnson National Historic Landmark	Historic Site	East
Village of Fort Johnson	St Mary's Cemetery	Cemetery	East
Village of Fort Johnson	St Joseph's Cemetery	Cemetery	East
Village of Fort Johnson	*Brant St Wastewater Pump Station*	*Pump Station*	*East*
Village of Fort Plain	Stewarts	Fuel	West
Village of Fort Plain	Victorious Life Church of RMI	Church	West
Village of Fort Plain	Grandview Baptist Church	Church	West
Village of Fort Plain	Fulmont Community Actin Agc	Food Pantry	West
Village of Fort Plain	*Fort Plain Fire Dept.*	*Municipal / Public Safety*	*West*
Village of Fort Plain	USPS Fort Plain Office	Post Office	West
Village of Fort Plain	Otsquago Aqueduct	Historic Site	West
Village of Fultonville	Betty Beavers	Fuel	Central
Village of Nelliston	*Montgomery CO SD#1 STP*	*WWTP*	*West*

*Italics indicate essential facility

6.3.4 Repetitive Loss Claims within Geographic Planning Areas

Table 6.8 summarizes the repetitive loss claims located in each of the three geographic planning areas going back to the start of the NFIP record for this area in 1979 to the present (2/2023). Out of a total of 88 repetitive loss claims, the majority occurred in the western planning area; however, the largest value for losses occurred in the central planning area. This data is consistent with the 2016 Hazard Mitigation Plan and NY Rising Study with few exceptions. According to the 2/23/23 FEMA repetitive loss summary the most repetitive loss claims were found for the Villages of Fonda, Fultonville and Fort Plain.

Table 6.8 Repetitive Flood Losses within Geographic Planning Areas (3/79-2/23)

Geographic Area	Communities Included	Total Losses (Building and Contents)	Total Flood Claims
East	City of Amsterdam Towns of Amsterdam and Florida	$28,433	
Central	Towns of Mohawk Villages of Florida, Fonda and Fultonville Hamlets of Burtonsville and Esperance	$2,529,055	
West	Villages of Ames, Fort Plain and Minden Town of St. Johnsville	$960,893	
Total		$ 3,518,381	88

6.3.5 All Flood Claims within Geographic Planning Areas

Table 6.9 summaries the total NFIP flood claims located in each of the three geographic planning areas from 1979 to 2/2023. Out of a total of 282 flood loss claims, the majority and greatest loss value occurred in the Western planning area. This data is consistent with the 2016 Hazard Mitigation Plan and NY Rising Study.

Table 6.9 All Flood Losses within Geographic Planning Areas (3/79-2/23)

Geographic Area	Communities Included	Total Losses (Building and Contents)	Total Flood Claims
East		$451,128	40
Central		$3,214,302	104
West		$4,384,579	138
Total		$8,740,454	282

6.4 FUTURE DEVELOPMENT IN HAZARD AREAS

D1-a

Montgomery County has identified 9 parcels where development has been proposed, is underway or is expected to occur in the future and included this information in Table 5.3. One of the proposed redevelopments located in the Village of Canajoharie is within the 100-year flood.

Future development proposals will need to meet all floodplain zoning requirements and careful attention must be paid to preventing potential drainage issues.

6.5 COUNTY-WIDE CULVERT ASSESSMENT

A county-wide culvert assessment was conducted to create an inventory of all culverts within the County, identify vulnerable structures, and prioritize hazardous culverts to be mitigated. Culverts that are undersized or are structurally failing can create flooding and public safety hazards. Additionally, inadequate culverts create impediments to aquatic connectivity which negatively impacts river and stream ecosystems.

6.5.1 Culvert Assessment Methodology

The culvert assessment included an inventory and inspection of all culverts within the County and a prioritization of the inventoried culverts based on the observed condition of the structure.

Culvert Inventory

- Field assessments were conducted following the North Atlantic Aquatic Connectivity Collaborative (NAACC) protocols as detailed in the NAACC Stream Crossing Instruction Manual for Aquatic Passability Assessments in Non-Tidal Stream and Rivers.
- County staff were trained to follow the culvert assessment protocol and use a mobile data collection application to view, edit, and record data for culvert assets.
- Culvert data was collected in the County's GIS system where culvert information can be viewed, updated, and used to track condition and maintenance issues.
- 329 culverts were inventoried and assessed by the County in January 2023.

Prioritization

- The 329 Montgomery County culverts that were inventoried were assessed based on the following culvert assessment metrics:
    - Inlet/Outlet Grade – The position of the invert relative to the stream bottom at the inlet/outlet
    - Constriction – The relative width of the crossing compared to the width of the stream
    - Water Depth – The depth of the water in the structure compared to the depth of the stream
    - Water Velocity – The water velocity in the structure compared to the water velocity in the stream
    - Scour Pool – The presence of a scour pool at the outlet is noted as it is an indicator of velocity issues at high flows
    - Substrate – The comparison between substrate in the structure and in the stream channel
    - Substrate Coverage – Degree to which a structure invert is covered by substrate
    - Dimensions – The height, width, length, and abutment height of the structure
    - Road Fill Height – The height of fill material between the top of the crossing structure and the road surface
    - Bankfull Width – The active stream channel width at bankfull flow
    - Outlet Armoring – The presence or absence of streambed armoring such as riprap, asphalt, or concrete
    - Structural Longitudinal Alignment – The presence or absence of misaligned pipe sections
    - Channel Alignment – The alignment of the crossing structure relative to the stream at the inlet

  - Level of Blockage – The amount of sediment that has accumulated at the inlet or outlet of the structure, creating a blockage
  - Flared End Section – The condition of the flared end section (i.e., presence of cracks, deterioration, deformation, piping, undermining, etc.)
  - Invert Deterioration – The condition of the structure inverts (i.e., corrosion, pitting, spalling, perforations, etc.)
  - Buoyancy or Crushing – Observation of possible hydraulic uplift or deformation of the structure
  - Cross Section Deformation – Degree of pipe distortion
  - Structural Integrity of Barrel – Observation of structural failure indicators
  - Joints and Seams – Observation of joint or seam separation
  - Footing – Degree of structural footing deterioration
  - Headwall/Wingwall – Observation of structural condition of headwall and wingwalls
  - Armoring – The presence of streambed and streambank reinforcements
  - Apron – Observation of apron condition (i.e., undermining of culvert, joint deterioration, scour holes, etc.)
  - Embankment Piping – Observation of seepage through embankment
  - Slope – The percent slop of the culvert from inlet to outlet
  - Internal Structures – The presence or absence of structures inside a culvert such as weirs, baffles, or supports
  - Crossing Condition – An overall condition rating of OK or Poor
  - Action Required – Assessment of maintenance or other required actions
- Four (4) culvert assessment metrics were considered for the prioritization: Crossing Condition, Outlet Grade, Tailwater Scour Pool, and Action Required
- The following hazard assessment metrics were considered for the prioritization: AADT, ≤ 2,500 Feet from Mapped Asset, FEMA Flood Zone, ≤ 100 Feet from State Regulated Wetland
- A numeric score was developed for each of the priority metrics listed above. This prioritization system enabled the metrics reported in specific units or qualitative descriptions to be translated into simple numbers that could be summed to provide an overall score for each culvert. **Table 6.10** summaries the culvert prioritization

Table 6.10 Culvert Prioritization System

	Priority Metric	Dataset	Methodology	Scoring
Culvert Assessment	**Crossing Condition**	County Culvert Inventory & Assessment (January 2023)	County assessment of culvert condition	OK = 0 Poor = 50
	Outlet Grade	County Culvert Inventory & Assessment (January 2023)	County assessment of outlet grade	At stream grade = 0 Cascade = 1 Free fall onto cascade = 3 Free fall = 5
	Tailwater Scour Pool	County Culvert Inventory & Assessment (January 2023)	County assessment of presence/size of scour pool	None = 0 Small = 1 Large = 5
	Action Required	County Culvert Inventory & Assessment (January 2023)	County assessment of maintenance or other actions required	No = 0 Maintenance Required = 5

	Priority Metric	Dataset	Methodology	Scoring
Hazard Assessment	**AADT**	NYSDOT	Annual Average Daily Traffic (AADT) Data from NYSDOT	≤ 1,500 = 5 ≤ 4,000 = 10 ≤ 10,000 = 15 ≤ 25,000 = 20 ≤ 75,000 = 25
	≤ 2,500 Feet from Mapped Asset	County GIS Community Asset Data	Culverts located within 2,500 feet of a mapped asset	No = 0 Yes = 25
	FEMA Flood Zone	FEMA Flood Zone	Culverts located within a FEMA flood zone	N/A = 0, 500-Year Flood Zone = 1 100-Year Flood Zone = 5
	≤ 100 Feet from State Regulated Wetland	NYSDEC	Culverts located within 100 feet of a state regulated wetland	No = 0 Yes = 5

6.5.2 Results

The prioritization process allows the County to identify the culvert replacements or mitigation measures that would have the largest impact on risk management. By applying the metrics discussed above, scores for each culvert were developed. For example, if a culvert were to obtain the maximum score in each metric, it would receive an overall score of 125 and have a final ranking of 1, being the highest priority for hazard mitigation.

In total, 329 crossings were assessed, scored, and ranked. **Table 6.11** summarizes the top 12 highest priority culverts based on this assessment. The full results table of the prioritization can be found in Appendix C.

Table 6.11 Montgomery County – Top 12 Priority Culverts

Culvert ID	Town	Road	Structure Material	Total	Rank
MC-MO-30-250	Town of Mohawk	Old Trail Road	Metal	83	1
MC-CJ-92-349	Town of Canajoharie	Mapletown Road	Plastic	80	2
MC-MO-33-233	Town of Mohawk	Hickory Hill Road	Metal	61	3
MC-G-110-143	Town of Glen	Logtown Road	Concrete	60	4
MC-CJ-90-57	Town of Canajoharie	Old Sharon Road	Metal	57	5
MC-FL-151-118	Town of Florida	Pattersonville Road	Metal	57	6
MC-CH-162-101	Town of Charleston	Green Road (North)	Plastic	56	7
MC-CJ-80-65	Town of Canajoharie	Clinton Road	Metal	56	8
MC-FL-145-126	Town of Florida	Fort Hunter Road	Metal	56	9
MC-G-164-151	Town of Glen	Noeltner Road	Plastic	56	10
MC-MO-33-229	Town of Mohawk	Hickory Hill Road	Concrete	56	11
MC-R-96-314	Town of Root	Hiltop Road	Metal	56	12

7 Capability Assessment

7.1 CAPABILITY ASSESSMENT OVERVIEW

C1 a.-b.

The purpose of conducting the capability assessment is to identify the strengths, weaknesses, gaps, and opportunities for local governments within the planning area in terms of mitigating risks. In combination, capability assessment and risk assessment serve as foundational elements for designing an actionable and effective hazard mitigation strategy. Within the capabilities assessment, measurable mitigation goals are established, and they are assessed for realistic achievability under existing local conditions. As in any planning process, it is important to establish which activities are feasible based on the organizational capacity of agencies or departments tasked with their implementation. This assessment also helps to identify any critical capability gaps or shortfalls to be addressed through future actions. Additionally, the assessment will help to identify key strengths and positive measures already in place that should be maintained or enhanced when opportunities arise.

The capability assessment also addresses three key planning requirements as detailed in 44 CFR 201.6, *Local Mitigation Plans*. These requirements include:

> (1) The documentation of each municipality's existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs[94];
>
> (2) The review and incorporation of existing plans, studies, reports, and technical information[95]; and
>
> (3) Each municipality's participation in the NFIP and continued compliance with NFIP requirements, as appropriate.[96]

The capability assessment completed for the Montgomery County region includes a comprehensive examination of all relevant mitigation capabilities as summarized in Table 7-1 below. All information has been updated for the 2024 Montgomery County HMP and more detailed information on each participating municipality's capabilities is provided in the individual annexes prepared for this plan update.

Table 7-1: Capability Assessment Components

Components	Description
Planning and Regulatory Capabilities	Local plans, policies, codes, and ordinances that are relevant to reducing the potential impacts of hazards.
Administrative and Technical Capabilities	Local human resources and their skills/tools that can be used to support mitigation activities.
Financial Capabilities	Fiscal resources the community has access to for helping to fund the implementation of hazard mitigation projects.
Education and Outreach Capabilities	Local programs and methods already in place that can be used to support mitigation activities.
NFIP Participation and Compliance	Summary of information relevant to the community's participation in the NFIP and continued compliance with NFIP requirements.

[94] 44 CFR 201.6(c)(3)
[95] 44 CFR 201.6(b)(3)
[96] 44 CFR 201.6(c)(3)(ii)

7.2 REVIEW AND INCORPORATION OF EXISTING PLANS

A4-a

New and updated local, state, and regional plans have been reviewed to gain understanding of each municipality's ability to mitigate risk at present. Plans, reports, and other technical information were identified and provided by the County, participating jurisdictions, and stakeholders, and through independent research by the planning consultant. In addition to the review of local plan documents, this included a review of any updated versions of the most relevant state and regional level plans incorporated into previous versions of this plan as described below. Plans and reports from the 2016 Hazard Mitigation Plan are included in Appendix A Bibliography for reference.

7.2.1 New York State Plans

State Hazard Mitigation Plan The 2019 New York State Hazard Mitigation Plan is one of multiple on-going statewide planning efforts that contribute to long-term resiliency. Montgomery County and all participating jurisdictions have established maintenance procedures to monitor, evaluate, and update the local hazard mitigation plan, implement the mitigation plans through existing programming, and collect public feedback on a regular basis to ensure public involvement. As indicated in the 2016 HMP, a staff member of the Montgomery County Business Development Center Planning Division was designated as Montgomery County's Hazard Mitigation Coordinator to provide leadership for continued plan maintenance to ensure overarching, long term plan goals are addressed. Each participating municipality authorized a representative for the Mitigation Planning Committee (MPC) to monitor, evaluate, and update the associated HMP tasks. Additional statewide planning initiatives integrated with the hazard mitigation plan include the following:

- New York State Comprehensive Emergency Management Plan (CEMP)The CEMP identifies the State's overarching policies, authorities, and response organizational structure to be implemented preceding and following an emergency or disaster situation.
- New York County Emergency Preparedness Assessments (CEPA) CEPA is a tool to help State and local stakeholders assess risk, capabilities, and the potential need for support and resources during emergencies or disasters. CEPA provides for a standardized and repeatable process to capture and analyze hazard and capability information and supports the Federal Emergency Management Association's (FEMA) annual Threat Hazard Identification and Risk Assessment (THIRA) requirement.
- New York Emergency Management Accreditation Program (EMAP) The EMAP is the voluntary assessment and accreditation process for state and local government programs responsible for coordinating prevention, mitigation, preparedness, response, and recovery activities for disasters. EMAP establishes credible standards applied in a peer review accreditation process.

7.2.2 Regional Plans

Montgomery County Business Development Center Annual Report (2020, Countywide)[97]

The Montgomery County Business Development Center (MCBDC) was created and is funded by Montgomery County and the Montgomery County Industrial Development Agency. The MCBDC houses the physical offices and incorporates work of the Montgomery County Department of Economic Development & Planning, Montgomery County Industrial Development Agency (MCIDA) and Montgomery County Capital Resource Corporation (MCCRC). The MCBDC serves as the primary economic development and planning entity for the

[97] https://montgomerycountyworks.com/files/2020-ANNUAL-REPORT.pdf

entire county. Economic development and planning within the County places emphasis on retaining and expanding existing businesses to maintain economic stability. Businesses and local companies in need can seek out support in the form of needs assessments, expansion opportunity identification, and financial, technical, marketing, and training resources. The County's planning and development agencies allow businesses to access loans and grants to assist with acquisition or expansion.

Additionally, the MCBDC implements the County's Planning Program which supports each municipality's planning needs. The Center maintains Geographic Information System (GIS) and U.S. Census data for the County. Additional planning services include research and identification of grant opportunities for economic development, transportation, disaster mitigation, recreation, and other public health, safety, and risk issues.

Mohawk Valley Regional Economic Development Councils (RDECs) Annual Report (2022)[98]

The Regional Economic Development Councils (REDCs) support regional stakeholders, officials, authorities, and members of the public to design and implement strategic plans to support job creation, economic growth, and development. A total of 10 REDs serve New York State, with Mohawk Valley REDC (MVREDC) serving as the strategic economic advisory board for the greater Mohawk Valley Region. The 2022 Mohawk Valley Progress Report details regional workforce inventory, addressing items including priority regional tradable sectors, advanced manufacturing, in demand skill sets, STEM industries, agribusiness, tourism, and populations for workforce in training. Other items addressed in the 2022 update include an overview of public participation and stakeholder engagement, detailing public presentations, planning meetings and regional summits, and best practice strategies. Final details of the plan include an overview of previously funded Consolidated Funding Application (CFA) projects.

Mohawk River Basin Action Agenda: Conserving, Preserving, and Restoring the Mohawk River Watershed (2021-2026)[99]

The Mohawk River Basin Action Agenda details the Mohawk River Basin Program and the Mohawk River Basin Action Agenda that highlight challenges for conserving, preserving, and restoring the Mohawk River watershed. The region's climate, culture, and history will inform the approach to address environmental and cultural changes to the region in the future, focusing on current challenges including climate change and resilience, water and wastewater infrastructure, land use and development, fisheries, and habitats, point and nonpoint source pollution, drinking water, recreation, and canal infrastructure.

7.3 DATA GATHERING METHODS

C1 b.

Multiple methods were used to update the inventory and analysis of relevant capability information for the Montgomery County HMP 2024 Update. Several survey questionnaires were distributed to County staff, and detailed discussions occurred at regional meetings during the plan update process. In addition, each municipality was given a copy of the latest capability assessment tables and findings as part of the draft plan review process and were asked to make any required updates or corrections based on the most current information available.

[98] https://regionalcouncils.ny.gov/sites/default/files/2022-08/2022_Mohawk_Valley_Progress_Report.pdf
[99] https://www.dec.ny.gov/docs/water_pdf/mohawkrbaa2021.pdf

7.4 REGIONAL FINDINGS

This section provides a summary of the four main components of local mitigation capabilities for participating municipalities within the region. Additional information pertaining to key capability findings for each municipality is provided in each respective municipality's annex. Additional documentation on the existing local authorities, policies, programs, and resources to support mitigation is included, as well as a description of opportunities for expansion or improvement of those existing capabilities.

7.4.1 Planning and Regulatory Findings

Planning and regulatory capability is based on what plans or regulations exist at the local level and how they are implemented. Their existence and use indicate a municipality's commitment and ability to manage growth, development, natural hazards, and other local issues in a safe and effective manner. All municipalities within New York have developed, adopted, and implemented, locally or on a regional level, several sets of plans and regulations. These plans and regulations are updated on a regular basis either due to a statutory requirement or through normal practices at the local level. The 2019 New York State Hazard Mitigation Plan[100] describes many of these plans and regulations and their significance to hazard mitigation. The table below outlines existing plans and regulations, their associated significance of hazard mitigation, and their effectiveness.

Table 7-2: Local Plans and Regulations Used by Communities

Plan or Regulation	Significance to Hazard Mitigation	Effective for Hazard Mitigation?
Floodplain Management Regulations/ Ordinance or Flood Damage Prevention Regulations/Ordinance	These regulations assist a community in effectively managing its floodplain areas and are typically organized like the NFIP regulations. These regulations are usually part of a community's land use regulations (described below). However, depending on the community, they may be a part of the municipal code of ordinances. These regulations may require specific minimum design, construction, or development elements which must be complied with for health and safety reasons.	Typically, very effective. Some communities may benefit from updating these regulations and more strongly linking the municipal code and zoning regulations (when they are found in both). Local hazard mitigation plans typically recommend these types of modifications. The State's adoption of the latest International Residential Code (IRC) made significant changes to the elevation requirement for new construction and improved structures in 100-year floodplains, especially coastal floodplains, which may be different than the standards previously contained in local floodplain zoning regulations or ordinance. The current code requires one foot of freeboard in all A, AE, and VE zones; coastal A zones will be regulated like VE zones where the LiMWA is delineated; flood openings will be required in breakaway walls; and essentially facilities must be elevated two feet above the BFE or to the 0.2% annual chance flood elevation.
Zoning Regulations	Primary tool for community for shaping the character and	Zoning Regulations are typically very effective for mitigating several hazards (flooding, geologic hazards, and wind

[100] https://www.dhses.ny.gov/hazard-mitigation

Plan or Regulation	Significance to Hazard Mitigation	Effective for Hazard Mitigation?
	development of a community. Zoning regulations may restrict uses or structures from being located in vulnerable areas in a community. These regulations may also require specific minimum design/construction/or development elements which must be complied with for health and safety reasons. If the flood damage prevention regulations are not in the municipal code of ordinances, they are typically in the Zoning Regulations.	hazards) because they guide development in flood zones, on slopes, and near sensitive resources; and because they regulate structures and accessories (such as signs) that can be damaged or cause damage during events.
Subdivision Regulations	Important tool for community for shaping the character and development of a community through subdivisions. These regulations often describe how flood prone areas must be addressed, specify minimum and maximum roadway dimensions, specify where utilities may be placed (underground vs. above-ground), and specify how fire protection will be provided. Some elements of the flood damage prevention regulations are often repeated in the Subdivision Regulations.	Subdivision Regulations are typically very effective for mitigating several hazards because they specify how roads, and lots should be arranged and appropriately sized for safe access and egress. They may also specify how fire protection should be provided, which helps mitigate for wildfires and wildland fires.
Stormwater Regulations	Some communities have developed stormwater regulations or ordinances that are separate than the Zoning and Subdivision Regulations. Stormwater regulations provide requirements for addressing stormwater in connection with development, redevelopment, and road projects.	When available, these regulations are often very effective. Not all communities follow the same principles for managing stormwater. Therefore, local hazard mitigation plans typically include discussion about how to best to manage stormwater.
Local Adoption of NY State Building Code	Critical to maintain adequate safety and building integrity factors in construction. In addition, these codes may limit structure size, type, or place additional requirements in the construction of structures located in an identified hazard area (i.e., high wind, coastal, floodplain, wildland/urban interface area, etc.).	Very effective. All local communities must adopt and enforce the current 2020 NY State Building Code.
Emergency Operations Plans	Assist local communities in the preparation and implementation of resources prior to and during an emergency, including natural hazard events. The plans are updated as needed and help local communities assess the locations of vulnerable	Not directly used for hazard mitigation, but the process of updating the local EOP will help inform vulnerability and risk assessments and will help identify gaps in capabilities at the local level.

Plan or Regulation	Significance to Hazard Mitigation	Effective for Hazard Mitigation?
	areas within their communities and how to handle these areas during an emergency. This plan may be a good source of information for local risk assessment activities.	

7.4.2 Planning and Regulatory Capabilities – State and Federal

New York State Flood Plain Management

There are two departments with statutory authorities and programs that affect floodplain management at the local jurisdiction level in New York State: the New York State Department of Environmental Conservation (NYSDEC) and the Department of State's Division of Code Enforcement and Administration (DCEA).

In 1992, the New York State Legislature amended an existing law, finding that "it is in the interests of the people of this state to provide for participation" in the NFIP (New York Laws, Environmental Conservation, Article 36). Although the Legislature recognized that "land use regulation is principally a matter of local concern" and that local governments "have the principal responsibility for enacting appropriate land use regulations," the law requires all local governments with land use restrictions over SFHAs to comply with all NFIP requirements. The law clearly advises local governments that failure to qualify for the NFIP may result in sanctions under Federal law and specifies that the State "will cooperate with the federal government in the enforcement of these sanctions."

The 1992 law that provides for local government participation in the NFIP also requires State agencies to "take affirmative action to minimize flood hazards and losses in connection with state-owned and state-financed buildings, roads and other facilities, the disposition of state land and properties, the administration of state and state-assisted planning programs, and the preparation and administration of state building, sanitary and other pertinent codes." In particular, the commissioner of the NYSDEC is to assist State agencies in several respects, including reviewing potential flood hazards at proposed construction sites.

The NYSDEC is charged with conserving, improving, and protecting the State's natural resources and environment, and preventing, abating, and controlling water, land, and air pollution. Programs that have bearing on floodplain management are managed by the Bureau of Flood Protection and Dam Safety, which cooperates with Federal, State, regional, and local partners to protect lives and property from floods, coastal erosion, and dam failures. These objectives are accomplished through floodplain management and both structural and nonstructural means.

The Floodplain Management Section is responsible for reducing flood risk to life and property through management of activities, such as development in flood hazard areas, and for reviewing and developing revised flood maps. The Section serves as the NFIP State Coordinating Agency and in this capacity is the liaison between FEMA and New York communities that elect to participate in the NFIP. The Section provides a wide range of technical assistance.

2020 NY State Building Code

As noted above, all New York municipalities in the state must adopt and enforce the current State Building Code. The enactment and enforcement of the Statewide Uniform Code is a State mandate under

the State Constitution. The adoption and enforcement of building codes relates to the design and construction of structures to standards established for withstanding a variety of forces. All structures built after 2007 must comply with the International Building Code (IBC) code, which includes special provisions for building in the floodplain, including NYS higher freeboard standards, of 2 feet above base flood elevation. Additionally, the NFIP minimum floodplain management requirements have been incorporated into the State Uniform Code requirement to include a 2-foot freeboard requirement.

The NY Division of Building Standards and Codes (BSC) administers the mandatory statewide Uniform Fire Prevention and Building Code (Uniform Code) and State Energy Conservation Construction Code (Energy Code). The State Building Code applies to most buildings and some other structures, being newly constructed new, being altered or added to, or undergoing a change of use.

Code Enforcement Disaster Assistance Response (CEDAR) Program[101]

The Department of State Division of Code Enforcement and Administration's Code Enforcement Disaster Assistance Response (CEDAR) Program provides communities with timely, appropriate post-disaster assistance as part of the statewide coordinated effort under the leadership of the Division of Homeland Security and Emergency Services Office of Emergency Management, and in accordance with Executive Law 2-B. The program's initial disaster response focuses on performing Rapid Evaluation Safety Assessments of damaged structures in affected communities for use as part of the application process to request federal disaster assistance through FEMA. The CEDAR program's long-term disaster response will provide a unified method that allows communities to access the broad range of resources available within the Department of State, and, with the cooperation of other state agencies and private partners, resources beyond the Department of State.

7.4.3 Planning and Regulatory Capabilities – County and Local

C1 a.

Table 7-3 indicates with a check mark the positive responses each Montgomery County municipality made to the question of existence of each of the plans listed in the first column. The listing of planning and regulatory capabilities is based on those included in FEMA's Capability Assessment Worksheet. Many of the positive responses indicate compliance with state standards (for example, adequate enforcement of the State Building Code). Also, local plans for some of the smaller municipalities may overlap.

[101] https://dos.ny.gov/code-enforcement-disaster-assistance-response-cedar-program#:~:text=The%20Department%20of%20State%20Division,Division%20of%20Homeland%20Security%20and

Table 7-3: Jurisdictions Planning and Regulatory Findings

Planning or Regulatory Capability	City of Amsterdam	Town of Amsterdam	town of Canajoharie	Town of Charleston	Town of Florida	Town of Glen	Town of Minden	Town of Mohawk	Town of Palatine	Town of Root	Town of St. Johnsville	Village of Ames	Village of Canajoharie	Village of Fonda	Village of Fort Plain	Village of Fultonville	Village of Hagaman	Village of Nelliston	Village of Palatine	Village of St. Johnsville
Comprehensive/Master Plan	×	×	×	×	×	×	×	×	×	×	×	No	×	×	×	×	×	No	No	×
Capital Improvements Plan	×	×	×	No	×	No	No	No	No	No	No	No	×	No	×	No	No	×	No	No
Economic Development Plan	×	×	No	No	×	No	No	No	No	No	×	No	No	No	×	×	No	×	No	No
Local Emergency Response Plan	×	×	×	×	×	×	×	×	×	×	×	No	×	×	×	×	×	×	×	×
Continuity of Operations Plan	×	×	No	No	No	No	No	×	No	No	No	No	No	No	No	No	No	×	No	No
Transportation Plan	×	×	×	No	×	No	×	×	No	No	×	×	No	×	×	×	No	×	×	×
Stormwater Management Plan	×	×	No	No	×	No	No	No	No	No	No	No	×	No	No	×	No	No	No	No
Watershed Management Plan	×	×	×	×	×	×	×	×	No	×	×	×	×	×	×	×	×	×	×	×
Floodplain Management Basin Plan	×	×	×	No	×	No	×	No	No	No	No	No	×	×	×	×	No	No	No	No
Open Space and Recreation Plan	×	×	No	No		No	No	No	No	No		No	No	No	No	No	No	No	No	No
Site plan review requirements	×	×	×	×	×	×	×	×	×	No	×	×	×	No	×	No	No	No	No	No
Zoning ordinance	×	×	×	No	×	×	×	×	×	×	×	×	×	No	×	×	×	No	×	×
Subdivision ordinance	×	×	×	No	×	×	×	No	×	×	×	No	×	No	×	×	×	×	×	No
NFIP Flood Damage Prevention Ordinance	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	No	×	×
Flood insurance rate maps	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Acquisition of land for open space and public recreation uses	No	×	No		No	No	No	No	No	No	No	No	No	No	No	No	×	×	No	No
Stormwater Management Ordinance	No	No	No	No	No	No	×	No	No	No	No	No	×	No	No	×	No	No	No	No
Growth Management Ordinance	×	×	×	No	×	No	No	No	No	No	No	×	No	No	No	No	No	No	×	No
Real Estate Disclosure Requirements	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×

7.4.4 Administrative and Technical Findings

Administrative and technical resources are an indication of a municipality's ability to implement hazard mitigation actions. This was measured by examining existing staff resources and related capabilities as included in *FEMA's* Capability Assessment Worksheet.111 Administrative capability indicates how mitigation activities may be designated to specific departments, and technical capability indicates the level of knowledge or expertise held by municipality employees. The check marks in Table 7-4 indicate a positive response to the survey.

7.4.5 Administrative and Technical Capabilities – State and Federal

New York State Division of Homeland Security and Emergency Services (NYS DHSES)

For more than 50 years, NYS DHSES (formerly New York State Office of Emergency Management – NYS DHSES) and its predecessor agencies have been responsible for coordinating the activities of all State agencies to protect New York's communities, the State's economic well-being, and the environment from natural and man-made disasters and emergencies. NYS DHSES routinely assists local governments, voluntary organizations, and private industry through a variety of emergency management programs including hazard identification, loss prevention, planning, training, operational response to emergencies, technical support, and disaster recovery assistance.

NYS DHSES administers the FEMA mitigation grant programs in the state and supports local mitigation planning in addition to developing and routinely updating the State Hazard Mitigation Plan. NYS DHSES prepared the current State Hazard Mitigation Plan with input from other State agencies, authorities, and organizations. It was approved by FEMA in 2014 and it keeps New York eligible for recovery assistance in all Public Assistance Categories A through G, and Hazard Mitigation assistance in each of the Unified Hazard Mitigation Assistance Program's five grant programs. For example, the 2008-2011 State Mitigation Plan allowed the State and its communities to access $57 million in mitigation grants to prepare plans and carry out projects. The 2014 New York State HMP was used as guidance in completing the Montgomery County HMP Update.

New York State Department of Environmental Conservation (NYSDEC) – Division of Water - Bureau of Flood Protection and Dam Safety

Within the NYSDEC – Division of Water, the Bureau of Flood Protection and Dam Safety cooperates with federal, state, regional, and local partners to protect lives and property from floods, coastal erosion, and dam failures through floodplain management and both structural and non-structural means; and provides support for information technology needs in the Division. The Bureau consists of the following Sections:

- Coastal Management: Works to reduce coastal erosion and storm damage to protect lives, natural resources, and properties through structural and non-structural means.
- Dam Safety: Is responsible for reviewing repairs and modifications to dams and assuring that dam owners operate and maintain dams in a safe condition through inspections, technical reviews, enforcement, and emergency planning.
- Flood Control Projects: Is responsible for reducing flood risk to life and property through construction, operation, and maintenance of flood control facilities.
- Floodplain Management: Is responsible for reducing flood risk to life and property through proper management of activities including, development in flood hazard areas and review and development of revised flood maps.

Department of State's Division of Code Enforcement and Administration (DCEA)

Technical Bulletins for the 2010 Codes of New York State

The DCEA publishes 14 technical bulletins including two recent bulletins with guidance related to flood hazard areas: Electrical Systems and Equipment in Flood-damaged Structures and Accessory Structures. One archived bulletin from January 2003, Flood Venting in Foundations and Enclosures Below Design Flood Elevation, refers to the out-of-date edition of FEMA Technical Bulletin 1 and to American Society of Civil Engineers (ASCE) 24-98, which is not the edition referenced by the current codes.

Forms and Publications

The DCEA posts several model reporting forms and related publications on its web page. The Building Permit Application requests the applicant to indicate whether the site is or is not in a floodplain and advises checking with town clerks or NYSDEC. The General Residential Code Plan Review form includes a reminder to "add 2' freeboard." Sample Flood Hazard Area Review Forms, including plan review checklists and inspection checklists for Zone A and Zone V, are based on the forms in Reducing Flood Losses through the International Code Series published by International Code Council and FEMA (2008).

7.4.6 Administrative and Technical Capabilities - County and Local

Montgomery County Emergency Management Office

The Montgomery County Emergency Management Office provides a countywide emergency management program for the County. They have emergency plans, trained personnel and emergency facilities and equipment to deal with a wide variety of potential disasters. The Director of Emergency Management's role involves planning, organizing, implementing, controlling, and evaluating the countywide program.

Montgomery County Department of Planning and Economic Development

The Montgomery County Department of Economic Development and Planning (MCDEDP) was created to administer the Montgomery County Economic Development and Planning Program and is the lead Economic Development Agency in Montgomery County, New York. In addition, the staff acts as the administrative body for the Montgomery County Industrial Development Agency (MCIDA). By joining forces and pooling resources, the County and the MCBDC provide professional economic development assistance to businesses interested in expanding or relocating to Montgomery County.

In addition to business attractions, MCBDC places a strong focus on retaining and expanding existing businesses to maintain economic stability within Montgomery County. MCBDC works directly with local employers to promote capital investments and job creation, reducing the risk of closure or relocation out of the County. Services delivered by MCBDC include needs assessments, identification of expansion opportunities and securing financial, technical, marketing and training resources. Through the MCBDC, Montgomery County businesses can access loans and grants to assist with acquisition and/or expansion. The MCIDA can provide long-term tax-exempt bond financing with lower interest rates than are available through conventional financing.

MCBDC also implements the County's Planning Program and provides all the planning services for the County and its municipalities. MCBDC maintains an in-depth Geographic Information Systems database. As the Census Data Affiliate for the County, the department is the clearinghouse for all County and municipal demographic data. The department also actively seeks grants that assist in developing plans for economic development, transportation, disaster mitigation, recreation, and other quality of life issues.

Montgomery County Department of Public Health

The Montgomery County Public Health Department is a public agency serving all residents of Montgomery County regardless of their age, creed, national origin, sex, or socioeconomic status in accordance with agency policy. The Department is responsible to carry out public health programs through population-based services to prevent disease and injuries and promote and protect health. The agency focuses on identification and surveillance of health threats, community health protection and promotion, screening and prevention services and outreach services to help individuals access and benefit from the health care system and community resources.

Montgomery County Fire Service

The Montgomery County Fire Service encompasses the fire departments of Montgomery County including those of Ames, Amsterdam, Burtonsville, Canajoharie, Charleston, Cranesville, Florida, Fonda, Fort Hunter, Fort Johnson, Fort Plain, Fultonville, Glen, Hagaman, Mohawk, Rural Grove, South Minden, St. Johnsville, and Tribes Hill. Additionally, part of the north-central county is covered by Ephratah out of Fulton County.

Montgomery County Department of Public Works

The mission of the Department of Public Works is to effectively develop, provide and maintain an efficient public infrastructure through long range planning, quality design and construction, and proper maintenance; to provide proficient maintenance and repairs to County owned facilities while providing the highest level of protection of occupants safety and health; to supply preventative maintenance and

repairs for all County vehicles and equipment to ensure safety and efficiency at all times. The Department accomplishes this with an interest in achieving the highest-level result at the least cost to the County Taxpayer. The Department of Public Works seeks to ensure that Montgomery County grows and develops to enhance the quality of life for fellow residents, growing businesses and welcoming visitors in the most realistic, economical, safe, and efficient way.

Montgomery County Sheriff's Department

The Montgomery County Sheriff's Office is committed to improving the quality of life in Montgomery County by strengthening its neighborhoods, delivering superior services, embracing the diversity of its citizens, and keeping Montgomery County a desirable, safe community in which to live, work, raise a family, shop, study, play and grow old.

Montgomery County Soil and Water Conservation District

The Montgomery County Soil & Water Conservation District helps with the technical assistance, education, and implementation of farm programs to help meet the changing needs of farmers and landowners.

Table 7-4: Jurisdictions Administrative and Technical Findings

Administrative or Technical Capability	City of Amsterdam	Town of Amsterdam	Town of Canajoharie	Town of Charleston	Town of Florida	Town of Glen	Town of Minden	Town of Mohawk	Town of Palatine	Town of Root	Town of St. Johnsville	Village of Ames	Village of Canajoharie	Village of Fonda	Village of Fort Plain	Village of Fultonville	Village of Hagaman	Village of Nelliston	Village of Palatine	Village of St. Johnsville
Planning Board	×	×	×	×	×	×	No	×	×	×	×	No	×	×	×	×	×	No	×	×
Maintenance Programs to Reduce Risk	×	×	No	No	×	×	No	No	×	×	×	No	×	No	No	×	No	No	No	No
Mutual Aid Agreements	×	×	×	×	×	×	×	×	×	×	No	×	×	×	×	×	×	×	×	No
Chief Building Official	× (PT)	× (PT)	×	No	×	×	×	×	×	×	×	×	×	×	×	No	×	×	×	×
Floodplain Administrator	× (PT)	×	×	×	×	×	×	×	x	×	×	x	×	×	×	×	×	No	×	×
Emergency Manager	No	No	×	×	×	×	×	×	No	×	×	×	×	×	×	×	×	×	No	No
Community Planner	×	×	×	No	×	×	No	×	No	×	×	×	×	×	×	×	No	×	×	No
Civil Engineer	×	×	No	No	×	×	No	×	No	×	×	No	×	No	×	×	×	×	×	No
GIS Coordinator	×	×	×	×	No	×	No	×	No	No	No	×	×	No	×	×	No	No	×	No
Warning Systems	×	×	No	×	×	No	No	×	No	No	No	No	×	×	×	×	No	No	×	No
Hazard Data	×	×	×	No	×	×	No	×	No	No	×	No	×	No	×	×	No	No	×	No

7.4.7 Financial Findings

The ability for a local government to implement mitigation actions is closely tied to the amount of money available to them. This availability is based on internal financial resources in addition to leveraging outside funding. including access to state and federal funding, the ability to levy taxes, and debt financing. Table 7-5 indicates with check marks positive responses to the ability to access the types of funding in the first column. These financial capabilities are based on those included in FEMA's Capability Assessment Worksheet. It should be noted that during the individual jurisdictional meetings most jurisdictions reiterated their wish to have a dedicated grants specialist on staff (someone to identify external funding opportunities and pull grant applications together). This was a need identified in previous iterations of this plan as well.

Table 7-5: Financial Findings

Financial Capability	City of Amsterdam	Town of Amsterdam	Town of Canajoharie	Town of Charleston	Town of Florida	Town of Glen	Town of Minden	Town of Mohawk	Town of Palatine	Town of Root	Town of St. Johnsville	Village of Ames	Village of Canajoharie	Village of Fonda	Village of Fort Plain	Village of Fultonville	Village of Hagaman	Village of Nelliston	Village of Palatine	Village of St. Johnsville
Capital improvement project funding	×	×	No	No	×	No	×	No	×	×	×	×	×	×	No	No	×	×	×	×
Authority to levy taxes for specific purposes	×	×	×	×	×	×	No	×	×	No	×	×	×	×	No	×	No	×	×	No
Fees for water, sewer, gas, or electric services	×	×	×	No	×	×	No	No	×	No	×	No	×	×	×	×	No	No	×	No
Impact fees for development	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Storm water utility fee	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Community Development Block Grant	×	×	No	×	×	×	×	×	No	No	×	×	×	×	×	×	×	×	×	×
Federal Funding	No	No	×	No	×	No	×	×	No	×	×	×	×	No	×	No	×	×	×	×
State Funding	×	×	×	×	×	×	×	×	×	No	×	×	×	No	×	No	×	×	No	×
Hazard Mitigation Grant Programs	×	×	×	×	No	×	×	×	×	No	×	×	×	×	No	×	No	×	×	No

7.4.8 Fiscal Capabilities – State and Federal Grant Opportunities

Appropriate action is needed to ensure that financial resources are available to implement hazard mitigation projects. Such projects need to be included in capital improvement programs at the state and local levels. Federal funding programs are available to eligible municipalities. The availability of current federal funding sources changes regularly and is dependent upon Congress' ongoing budget appropriations process. Currently, www.grants.gov is the comprehensive website to track available funding from federal agencies. Also, federal appropriations from Congress may be tracked through the Federal Registers at www.federalregister.gov.

Federal Hazard Mitigation Funding Opportunities

Federal mitigation grant funding is available to all communities with a current hazard mitigation plan (this plan); however, most of these grants require a "local share" in the range of 10-25% of the total grant amount. The FEMA mitigation grant programs are described below.

Hazard Mitigation Grant Program (HMGP)[102]

The HMGP is a post-disaster mitigation program. It is made available to states by FEMA after each Federal disaster declaration. The HMGP can provide up to 75% funding for hazard mitigation measures. The HMGP can be used to fund cost-effective projects that will protect public or private property in an area covered by a federal disaster declaration or that will reduce the damage from future disasters. Examples of projects include acquisition and demolition of structures in hazard prone areas, flood-proofing, or elevation to reduce future damage, minor structural improvements, and development of state or local standards. Projects must fit into an overall mitigation strategy for the area identified as part of a local planning effort. All applicants must have a FEMA-approved Hazard Mitigation Plan (this plan).

Applicants who are eligible for the HMGP are state and local governments, certain nonprofit organizations or institutions that perform essential government services, and Indian tribes and authorized tribal organizations. Individuals or homeowners cannot apply directly for the HMGP; a local government must apply on their behalf. Applications are submitted to NYS DHSES and placed in rank order for available funding and submitted to FEMA for final approval. Eligible projects not selected for funding are placed in an inactive status and may be considered as additional HMGP funding becomes available.

Flood Mitigation Assistance (FMA) Program

The FMA combines the previous Repetitive Flood Claims and Severe Repetitive Loss Grants into one grant program. FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. The FMA is funded annually; no federal disaster declaration is required. Only NFIP insured homes and businesses are eligible for mitigation in this program. Funding for FMA is very limited and, as with the HMGP, individuals cannot apply directly for the program. Applications must come from local governments or other eligible organizations. The federal cost share for an FMA project is 75%. At least 25% of the total eligible costs must be provided by a non-federal source. Of this 25%, no more than half can be provided as in- kind contributions from third parties. At minimum, a FEMA-approved local flood mitigation plan is required before a project can be approved. FMA funds are distributed from FEMA to the state. NYS DHSES serves as the grantee and program administrator for FMA.

FEMA Building Resilient Infrastructure and Communities (BRIC)[103]

The FEMA BRIC program will support states, local municipalities, communities, tribes, and regions as they undertake hazard mitigation projects for future/impending natural disasters or natural hazards. The BRIC program encourages projects that promote capability and capacity building, innovative and green design, partnerships, and flexibility within communities. States, municipalities and other organizations or authorities may apply for funding to support resiliency projects to address future risks and challenges related to wildfires, drought, hurricanes, earthquakes, flooding, extreme heat, etc.

Federal and State Disaster and Recovery Assistance Programs

Following a disaster, various types of assistance may be made available by local, state, and federal governments. The types and levels of disaster assistance depend on the severity of the damage and the declarations that result from the disaster event. Among the general types of assistance that may be provided should the President of the United States declare the event a major disaster are the following:

[102] https://www.fema.gov/grants/mitigation

[103] https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities

Individual Assistance (IA)[104]

IA provides help for homeowners, renters, businesses, and some non-profit entities after disasters occur. This program is funded by the U.S. Small Business Administration. For homeowners and renters, those who suffered uninsured or underinsured losses may be eligible for a Home Disaster Loan to repair or replace damaged real estate or personal property. Renters are eligible for loans to cover personal property losses. Individuals may borrow up to $200,000 to repair or replace real estate, $40,000 to cover losses to personal property and an additional 20% for mitigation. For businesses, loans may be made to repair or replace disaster damage to property owned by the business, including real estate, machinery and equipment, inventory, and supplies. Businesses of any size are eligible. Non-profit organizations such as charities, churches, private universities, etc. are also eligible. An Economic Injury Disaster Loan provides necessary working capital until normal operations resume after a physical disaster. These loans are restricted, by law, to small businesses only.

Public Assistance (PA)[105]

PA provides cost reimbursement aid to local governments (state, county, local, municipal authorities, and school districts) and certain non-profit agencies that were involved in disaster response and recovery programs or that suffered loss or damage to facilities or property used to deliver government-like services. This program is funded by FEMA with both local and state matching contributions required.

Small-Business Administration (SBA) Loans

Small Business Administration (SBA) provides low-interest disaster loans to homeowners, renters, business of all sizes, and most private nonprofit organizations. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.

Homeowners may apply for up to $200,000 to replace or repair their primary residence. Renters and homeowners may borrow up to $40,000 to replace or repair personal property-such as clothing, furniture, cars, and appliances – damaged or destroyed in a disaster. Physical disaster loans of up to $2 million are available to qualified businesses or most private nonprofit organizations.

Department of Homeland Security[106]

The Homeland Security Grant Program (HSGP) plays an important role in the implementation of the National Preparedness System by supporting the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient nation. The FY 2013 HSGP supports core capabilities across the five mission area of Prevention, Protection, Mitigation, Response, and Recovery based on allowable cost. HSGP is comprised of three interconnected grant programs including the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), and the Operation Stone Garden (OPSG). Together, these grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration.

Community Development Block Grants (CDBG)[107]

CDBG are federal funds intended to provide low and moderate-income households with viable communities, including decent housing, as suitable living environment, and expanded economic opportunities. Eligible activities include community facilities and improvements, roads and infrastructure, housing rehabilitation and preservation, development activities, public services, economic development, planning, and administration. Public improvements may include flood and drainage improvements. In limited instances, and during the times of "urgent need" (e.g. post disaster) as defined by the CDBG National Objectives, CDBG funding may be used to acquire a property located in a floodplain that was severely damaged by a recent flood, demolish a structure severely damaged by an earthquake, or repair a public facility severely damaged by a hazard event.

[104] https://www.fema.gov/assistance/individual
[105] https://www.fema.gov/assistance/public
[106] https://www.dhs.gov/homeland-security-grant-program-hsgp
[107] https://www.hudexchange.info/programs/cdbg/

Community Development Block Grants – Disaster Recovery (CDBG-DR)[108]

CDBG-DR funding supports the recovery process after Presidentially declared disasters, particularly in low-income areas, however this program is not currently available to support mitigation within Montgomery County.

U.S. Economic Development Administration[109]

The U.S. Economic Development Administration (USEDA) is an agency of the U.S. Department of Commerce that supports regional economic development in communities around the country. It provides funding to support comprehensive planning and makes strategic investments that foster employment creation and attract private investment in economically distressed areas of the United States. Through its Public Works Program USEDA invests in key public infrastructure, such as in traditional public works projects, including water and sewer systems improvements, expansion of port and harbor facilities, brownfields, multitenant manufacturing and other facilities, business and industrial parks, business incubator facilities, redevelopment technology- based facilities, telecommunications, and development facilities. Through its Economic Adjustment Program, USEDA administers its Revolving Loan Fund (RLF) Program, which supplies small businesses and entrepreneurs with the gap financing needed to start or expand their business, in areas that have experienced or are under threat of serious structural damage to the underlying economic base.

Homeownership Repair and Rebuilding Fund

The Homeownership Repair and Rebuilding Fund provides grants of up to an additional $10,000 to eligible homeowners who have already qualified for FEMA housing assistance's maximum grant ($31,900) and will not receive other assistance from private insurance or government agencies that would duplicate the grant's funding. The HRRF includes $100 million dedicated to help homeowners affected by Sandy and was provided directly from the State of New York.

Empire State Development

Empire State Development offers a wide range of financing, grants, and incentives to promote business and employment growth, and real estate development throughout the State. Several programs address infrastructure construction associated with project development, acquisition and demolition associated with project development and brownfield remediation and redevelopment.

Federal Highway Administration - Emergency Relief

The Federal Highway Administration Emergency Relief is a grant program that may be used for repair or reconstruction of Federal-aid highways and roads on Federal lands which have suffered serious damage as a result of a disaster. NYS is serving as the liaison between local municipalities and FHWA.

Federal Transit Administration - Emergency Relief [110]

The Federal Transit Authority Emergency Relief is a grant program that funds capital projects to protect, repair, reconstruct, or replace equipment and facilities of public transportation systems. Administered by the Federal Transit Authority at the U.S. Department of Transportation and directly allocated to MTA and Port Authority. This transportation-specific fund was created as an alternative to FEMA PA. Currently, a total of$5.2 billion has been allocated to NYS-related entities.

Portable Emergency Generator (PEG) Program

This program mitigates prolonged widespread power disruptions at strategic fueling locations during declared fuel or energy emergencies by deploying portable emergency generators in a safe and effective manner. This is a component of emergency response that helps restore normalcy by making available fuel accessible at the pump for consumers and emergency responders. As of August 2018, 650 retail outlets in the Long Island, Lower Mid-Hudson, and New York City regions have executed PEG Program contracts. Grants from $100,000 to $5 million will be awarded to projects that assess, restore, enhance, or create wetlands, beaches, and other natural systems to better protect communities as well as fish and wildlife species and habitats from the impacts of future storms and naturally occurring events.

[108] https://www.hudexchange.info/programs/cdbg-dr/
[109] https://www.eda.gov/funding/funding-opportunities
[110] https://www.transit.dot.gov/funding/grant-programs/emergency-relief-program

New York State Department of Transportation (NYSDOT)

Damaged Roads and Signals

High winds, storm tidal surge and flooding caused significant damage to NYSDOT facilities, roads and local transportation infrastructure in Hudson Valley, Long Island and New York City. Repair and replacement will be necessary for these facilities and infrastructure. In some cases, municipalities will be direct applicants; therefore, not all FEMA-eligible costs are included for damaged infrastructure.

Scour around Culverts and Bridges

Scour has some of the most significant and destructive effects on roadway culverts and bridges. It is the result of fast flowing water's erosive action, which erodes and carries away foundation materials (sand and rocks from around and beneath abutments, piers, foundations, and embankments). Water's intensity and velocity can quickly compromise the integrity of roadway culverts and bridges and is one of three main causes of bridge failures (the other two are collision and overloading). Superstorm Sandy, Tropical Storm Lee, and Hurricane Irene each exposed the vulnerability of the State's bridges and culverts to scour, as the storms weakened or damaged these structures across the State.

There are 20,000 bridges in New York State, with 91 state bridges, 731 local bridges and 431 culverts at risk of scour. NYSDOT addresses scoured and critical roadway culverts and bridges. It provides replacements and/or permanent scour retrofits to facilities that are unable to protect the transportation system from storm events. Five hundred million dollars will be made available for this critical work.

Emergency Watershed Protection Program[111]

The purpose of the Emergency Watershed Protection Program (EWP) was established by Congress to respond to emergencies created by natural disasters. The EWP Program is designed to help people and conserve natural resources by relieving imminent hazards to life and property caused by floods, fires, drought, windstorms, and other natural occurrences. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) administers the EWP Program; EWP-Recovery, and EWP–Floodplain Easement (FPE).

EWP – Recovery [112]

The EWP Program is a recovery effort program aimed at relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. Public and private landowners are eligible for assistance but must be represented by a project sponsor that must be a legal subdivision of the State, such as a city, county, township or conservation district, and Native American Tribes or Tribal governments. NRCS may pay up to 75 percent of the construction cost of emergency measures. The remaining 25 percent must come from local sources and can be in the form of cash or in-kind services.

EWP work is not limited to any one set of measures. It is designed for installation of recovery measures to safeguard lives and property because of a natural disaster. NRCS completes a Damage Survey Report (DSR) which provides a case-by-case investigation of the work necessary to repair or protect a site.

Watershed impairments that the EWP Program addresses are debris-clogged stream channels, undermined and unstable streambanks, jeopardized water control structures and public infrastructures, wind-borne debris removal, and damaged upland sites stripped of protective vegetation by fire or drought.

EWP – FPE[113]

Privately-owned lands or lands owned by local and state governments may be eligible for participation in EWP-FPE. To be eligible, lands must meet one of the following criteria:

- Lands that have been damaged by flooding at least once within the previous calendar year or have been subject to flood damage at least twice within the previous 10 years
- Other lands within the floodplain are eligible, provided the lands would contribute to the restoration of the flood storage and flow, provide for control of erosion, or that would improve the practical management of the floodplain easement
- Lands that would be inundated or adversely impacted because of a dam breach

[111] https://www.nrcs.usda.gov/programs-initiatives/ewp-emergency-watershed-protection

[112] https://www.adaptationclearinghouse.org/resources/usda-nrcs-emergency-watershed-protection-program.html

[113] https://www.adaptationclearinghouse.org/resources/usda-nrcs-emergency-watershed-protection-program.html

EWP-FPE easements are restored to the extent practicable to the natural environment and may include both structural and nonstructural practices to restore the flood storage and flow, erosion control, and improve the practical management of the easement.

Structures, including buildings, within the floodplain easement must be demolished and removed, or relocated outside the 100-year floodplain or dam breach inundation area.

7.4.9 Education and Outreach Findings

Frequently, education and outreach activities can be cost-effective mitigation actions that are often overlooked by local municipalities. Table 7-6 indicates which opportunities the municipalities have incorporated based on the listing of education and outreach capabilities identified in in FEMA's Capability Assessment Worksheet. As noted in the individual annexes for each municipality, there are other related capabilities available such as using municipal websites, email notifications/listservs, and social media to increase awareness and educate the public about natural hazards and emergency preparedness or mitigation practices.

Table 7-6: Education and Outreach Findings.

Financial Capability	City of Amsterdam	Town of Amsterdam	Town of Canajoharie	Town of Charleston	Town of Florida	Town of Glen	Town of Minden	Town of Mohawk	Town of Palatine	Town of Root	Town of St. Johnsville	Village of Ames	Village of Canajoharie	Village of Fonda	Village of Fort Plain	Village of Fultonville	Village of Hagaman	Village of Nelliston	Village of Palatine	Village of St. Johnsville
CERT Team	×	No	No	×	No	No	No	×	No	No	No	No	No	No	No	No	No	×	No	No
Public Education Program	No	No	No	×	×	No	No	×	No	No	No	×	×	No	No	No	No	×	No	No
Natural Disaster Program in Schools	×	×	×	No	×	No	No	×	No	No	No	No	×	No	No	No	No	×	No	No
Citizen Group or Nonprofit Focused on Emergency Preparedness	No	No	No	×	No	No	No	×	No	No	No	No	No	No	No	No	No	×	No	No
Public-Private Partnership for Disaster Issue	No	No	No	No	No	No	No	No	No	No	No	No	×	No	No	No	No	No	No	No
StormReady certification	No	No	×	No	No	No	×	No	No	No	×	No	×	No	×	No	No	No	×	No
Firewise Communities certification	No	No	×	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

7.5 NATIONAL FLOOD INSURANCE PROGRAM

This section provides an overall regional summary of NFIP participation and continued compliance with National Flood Insurance Act of 1968 (NFIP) requirements. More detailed information for each municipality is provided in each respective municipality annex, including opportunities to improve local floodplain management activities through possible new actions related to NFIP participation and compliance.

Flooding represents the greatest and costliest natural hazard facing communities across the nation. At the same time, the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques.

7.5.1 NFIP Participation and Compliance

The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968 (FEMA's 2002 NFIP: Program Description). The NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages.

There are three components to the NFIP: flood insurance, floodplain management and flood hazard mapping. Communities participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation in the NFIP is voluntary. Flood insurance is designed to provide an alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Flood damage in the U.S. is reduced by $1 billion each year through communities implementing sound floodplain management requirements and property owners purchasing flood insurance. Additionally, buildings constructed in compliance with NFIP building standards suffer approximately 80% less damage annually than those not built in compliance (FEMA, 2008).

Municipal participation in and compliance with the NFIP is supported at the Federal level by FEMA Region II and the Insurance Services Organization (ISO), at the state-level by the New York State Department of Environmental Conservation (NYSDEC) and New York State Office of Emergency Management (NYSOEM). Additional information on the NFIP program and its implementation throughout the County may be found in the flood hazard profile (Section 4).

The State and communities may adopt higher regulatory standards when implementing the provisions of the NFIP. Specifically identified are the following:

> **Freeboard:** By law, NYS requires Base Flood Elevation plus 2 feet (BFE+2) for all single- and two- family residential construction, and BFE+1 for all other types of construction. Communities may go beyond this State requirement, providing for additional freeboard or requiring BFE+2 for all types of construction. Further, a number of communities have supported property owners meeting and exceeding freeboard requirements through the site plan review and zoning board of approvals process; for instance, allowing overall structure heights to be determined from BFE+2 rather than grade within NFIP floodplains.
>
> **Cumulative Substantial Improvements/Damages:** The NFIP allows improvements valued at up to 50% of the building's pre-improvement value to be permitted without meeting the flood protection requirements. Over the years, a community may issue a succession of permits for different repairs or improvement to the same structures. This can increase the

overall flood damage potential for the structure and within a community. The community may wish to deme "substantial improvement" cumulatively so that once a threshold of improvement within a certain length of time is reached, the structure is substantially improved and must meet flood protection requirements.

Capabilities for conducting community floodplain management and flood mitigation activities are typically guided, evaluated, and enhanced through participation in the National Flood Insurance Program (NFIP). In addition to approaches that cut across hazards, such as education, outreach and the training of local officials, participation in the NFIP requires specific regulatory and administrative measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary, but it is promoted by FEMA as a crucial means to implement and sustain an effective flood hazard mitigation program. Community participation in the NFIP also enables property owners within the community to purchase federally backed flood insurance for buildings and personal belongings.

For a municipality to participate in the NFIP, they must adopt a local flood damage prevention ordinance that requires municipalities to follow established minimum building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the flood having a 1-percent- annual-chance of occurring (i.e., the 100-year flood), and that new floodplain development will not aggravate existing flood problems or increase damage to other properties.

Another key service provided by the NFIP is the mapping of identified flood hazard areas. Once prepared, the Flood Insurance Rate Maps (FIRMs) are used to assess flood hazard risk, regulate construction practices, and set flood insurance rates. FIRMs are an important source of information to educate residents, government officials and the private sector about the likelihood of flooding in their municipality.

The effective FIRM is the primary NFIP map for a community or county. The first digital countywide FIRM (DFIRM) for Montgomery County first became effective on January 19, 2018.

All but one community in Montgomery County (Village of Nelliston) participate in the NFIP. As of March 31, 2023, there were 193 NFIP policyholders in Montgomery County. This is a reduction in 68 policies since the last HMP, when there were 261 policies in force. Since 1978, there have been 282 claims made, totaling over $8.7 million for damages to structures and contents. There are forty (40) NFIP Repetitive Loss (RL) properties, and two (2) NFIP Severe Repetitive Loss (SRL) properties in the County. Further details on the County's flood vulnerability may be found in the flood hazard profile in Section 5.

Communities covered by the NFIP are required to maintain continued compliance and local enforcement of all NFIP Regulations per 44 CFR Part 60.3. Through the adoption of the State Building Code and other higher regulatory standards, all municipalities in the region have gone beyond FEMA's minimum requirements as further described later in this section and within each municipality annex.

Through the adoption and enforcement of these floodplain management regulations, all municipalities that actively participate in the NFIP are currently in good standing with FEMA. Table 7-7 summarizes NFIP participation and policy statistics for each municipality in the planning area as of March 31, 2023, with a comparison to statistics included in the previous plan.

Table 7-7: NFIP Participation and Policy Statistics (FEMA, March 31, 2023)[114].

City/ Town/ Village	NFIP Entry Date	Latest Effective Firm	Policies in Force 2015	Policies in Force 3/31/2023	Change in Policies 2015-2023	Total Written Premium + Fee 2023	Total Coverage 2023
Village of Ames	Unknown	1/19/2018		1		$ 119	$ 5,000
City of Amsterdam	7/14/84	1/19/2018	17	14	-3	$17,188	$4,097,000
Town of Amsterdam	12/1/87	1/19/2018	6	5	-1	$7,096	$957,000
Town of Canajoharie	1/6/83	1/19/2018	7	1	-6	$1,321	$120,000
Village of Canajoharie	11/3/82	1/19/2018	9	9	0	$28,606	$2,501,000
Town of Charleston	10/15/85	1/19/2018	3	2	-1	$1,198	$ 700,000
Town of Florida	Unknown	1/19/2018	12	6	-6	$6,469	$1,396,000
Village of Fonda	Unknown	1/19/2018	31	30	-1	$42,998	$4,248,000
Village of Fort Johnson	1/19/83	1/19/2018	14	4	-10	$6,586	$695,000
Village of Fort Plain	Unknown	1/19/2018	60	31	-30	$47,847	$3,814,000
Village of Fultonville	Unknown	1/19/2018	12	30	18	$44,538	$5,161,000
Town of Glen	Unknown	1/19/2018	10	2	-8	$1,173	$654,000
Town of Minden	Unknown	1/19/2018	11	8	-3	$8,212	$745,000
Town of Mohawk	8/5/85	1/19/2018	11	2	-9	$1,425	$380,000
Town of Palatine	Unknown	1/19/2018	4	3	-1	$7,593	$1,514,000
Town of Root	4/1/98	1/19/2018	3	5	2	$4,476	$826,000
Town of St. Johnsville	3/16/93	1/19/2018	45	5	-40	$6,527	$710,000
Village of St. Johnsville	2/19/86	1/19/2018	6	10	4	$13,005	$2,024,000
Unknown				25		$111,779	$7,298,000
		TOTAL	**261**	**193**	**-68**	**$358,156**	**$37,845,000**

As described above, most of Montgomery County municipalities participate in the NFIP and enforce local flood damage prevention regulations and ordinances. Given the changes to the FIRM in 2018, all Montgomery County municipalities have had opportunities to update their flood damage prevention regulations and ordinances in the last decade. The New York Department of Conservation (NY DEC) continuously works with municipalities to review and support changes to regulations and

[114] Flood Insurance Data and Analytics, Policy Information by State. FEMA. 2023. Retrieved on March 31, 2023 from: https://nfipservices.floodsmart.gov/reports-flood-insurance-data

ordinances that occur when maps are changed as well as between map updates. This includes the provision of model floodplain regulations for both inland/riverine communities (regulating all A/AE Zones).

7.5.2 Community Rating System

As an additional component of the NFIP, the Community Rating System (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 rating; and (3) promote the awareness of flood insurance (FEMA, 2012). Municipalities and the county could expect significant cost savings on premiums if enrolled in the CRS program.

Currently, none of the municipalities participate in the CRS Program.

7.6 CONCLUSION

Overall, communities within Montgomery County have proven capabilities to reduce the impact of natural hazards. While the specific capabilities of each municipality are further discussed in each municipality annex to this plan, including current limitations and opportunities to expand and improve on existing capabilities, this concluding section provides a higher-level summary of mitigation capabilities across the planning area. The planning and regulatory capabilities across the Montgomery County region are moderate to low. Each participating municipality has a series of effective plans and regulations in place and the resources to maintain and implement these plans as required. For example, as demonstrated in each municipality annex, most municipalities have integrated hazard mitigation and community resilience to natural hazards and/or climate change into their local Comprehensive Plans. The local enforcement of the 2020 New York State Building Code has further strengthened the regulatory capability of all municipalities in the region by requiring new construction standards that are based on the widely adopted International Codes (including floodplain management regulations that go beyond FEMA's minimum NFIP standards).

While the local administrative and technical capabilities across the region vary significantly, most participating municipalities indicate they have modest levels of existing staff capabilities and resources to implement mitigation practices and projects. In many communities (both large and small), the same employee fills multiple positions. For instance, the Floodplain Administrator position is typically filled by the Code Enforcer or Director of Public Works. Serving in this role along with other auxiliary positions is not ideal for most communities and often stretch local staff beyond their capacity, particularly during and following hazard events when demand for their time increases significantly across multiple areas. Also, for many participating municipalities, it was noted that additional hires or the conversion of part-time to full-time employment are needed, as are some re-hires for positions that are currently vacant or recently eliminated.

The financial capabilities of municipalities also vary widely across the region and typically correlate with a community's size and tax base. Most do not have a dedicated funding source for hazard mitigation implementation. All municipalities develop capital improvement plans and budgets, but these funds are typically limited to addressing drainage issues as part of roadway and other larger infrastructure improvements. While external grant funding is available to support all communities,

many of these sources require internal resources or capabilities that are not readily available for many, such as the ability to debt finance and/or provide a local cost-share to match state or federal grants. Another challenge for some communities as it relates to mitigation project funding has been overcoming complex application procedures and/or meeting FEMA's benefit-cost analysis requirements (specific to federal Hazard Mitigation Assistance funding). Many of the specific hazard problems and proposed solutions will not pass the minimum criteria for cost-effectiveness using FEMA's BCA methodology, or in other cases, would require the voluntary involvement of private property owners who may not be interested or able to participate in or help pay for the project. Also, as noted earlier in this chapter, most municipalities expressed the need to have a dedicated grants specialist on staff (someone to identify external funding opportunities and pull grant applications together) to build this capability to assist more with the implementation of hazard mitigation projects.

Education and outreach capabilities are more prevalent across the region, with most communities having some resources and methods to engage with and inform their residents and constituents on the topics of natural hazards, emergency preparedness, and hazard mitigation. As expected, the larger municipalities have higher capabilities to implement these types of activities, including more targeted outreach initiatives, but all municipalities maintain the ability to implement these lower cost mitigation actions to some degree.

All but one community in Montgomery County actively participates in the NFIP and is currently in good standing with FEMA. However, floodplain management capabilities also vary from community to community as summarized in this chapter and each individual annex. Participating municipalities have gone beyond NFIP minimum standards through the administration and enforcement of local development regulations and the State Building Code, however only the larger municipalities with greater administrative and technical resources or financial capabilities are able to do more in terms of floodplain management activities such as increasing flood risk awareness and implementing flood mitigation projects. Currently no communities are participating in FEMA's voluntary CRS program.

As concluded in the last plan update, each of the municipalities remains well positioned to mitigate risks from natural hazards, and more importantly, the region has proven the capacity to collaborate on efforts to mitigate risk. While all municipalities have some degree of capability and resources to support hazard mitigation activities, each can expand and improve on the capabilities described in this chapter. Specific opportunities to address the existing gaps or limitations in local capabilities to reduce risk have been identified for each capability type and are further described in each municipality's annex. Each of these opportunities were then considered by each municipality during the plan update process as potential new mitigation actions to be included in the updated Mitigation Strategy (Section 8).

8 Mitigation Strategy

8.1 MITIGATION GOALS AND OBJECTIVES

C3 a

The Planning Team reviewed and updated the 2016 Hazard Mitigation Plan Goals. The 2024 Natural Hazard Mitigation Plan includes specific plan goals, objectives and addresses additional community assets.

D3 a

8.1.1 2024 Montgomery County Hazard Mitigation Goals

1. **Public Health and Safety**

Recommended Goal: Protect the health and safety of the public.

Objectives:

- Promote cost-effective hazard mitigation actions that protect and promote public health and safety from all hazards.
- Encourage people to be prepared before, during and after a hazard event by providing neighborhood training events and neighbor-helping-neighbor tradition.
- Ensure that services related to public health (e.g., sanitation, water, debris removal, hospital access, and emergency services) can function during and after a hazard.
- Ensure that evacuation can happen in an organized and efficient manner.
- Minimize secondary impacts from hazards, such as the release of pollutants. (e.g., fuel spills into waterbodies).
- Promote public communications including materials and voice communications.

2. **Protection of Existing Infrastructure**

Recommended Goal: Protect existing properties and structures

Objectives:

- Provide resources for residents and businesses to make their buildings and properties more disaster resistant.
- Educate the public on measures they can take to protect their property from natural hazards.
- Maintain existing drainage to protect residential and municipal areas from flooding.
- Ensure that critical facilities and infrastructure are protected from hazards.
- Ensure that future development / redevelopment does not make existing properties more vulnerable to hazards.

3. **Protection of Natural Resources**

Recommended Goal: Increase resilience by protecting and enhancing natural resources.

Objectives:

- Protect natural areas (including open space, wetlands, green spaces) to ensure that they buffer impacts to developed areas during a natural disaster.
- Protect and increase tree canopy.
- Manage stormwater with Low Impact Development techniques (provide capital resources to encourage investment in LID upgrades).
- Optimize techniques to provide safe lakes and river access to avoid erosion.

4. **Emergency Response to Hazards**

Recommended Goal: Ensure that essential services can function during and after a hazard event.

Objectives:

- Ensure that critical infrastructure is protected from natural hazards.
- Ensure that key service emergency personnel and employees can get into and around to provide services.
- Promote effective and consistent interdepartmental communication.
- Maintain Montgomery County Comprehensive Emergency Management Plan (CEMP).

5. **Planning for Future Development**

Recommended Goal: Minimize hazard risks for future development

Objectives:

- Encourage future development in areas that are not prone to natural hazards.
- Enforce existing zoning and building regulations and make updates to address known hazards and risks.
- Ensure that future development meets federal, state, and local standards for preventing and reducing the impacts of natural hazards including impacts due to climate change on natural and historic resources.

6. **Regional Cooperation**

Recommended Goal: Work regionally to mitigate impacts from natural hazards and to respond and recover from hazard events.

Objectives:

- Continue to participate in regional efforts.
- Cooperate with other agencies, communities, and private entities.
- Understand priorities and capabilities of other entities to allow for resource-sharing, mutual aid, and entering memoranda of understanding (MOU).

7. **Hazard Awareness**

Recommended Goal: Maintain Hazard Awareness

Objectives:

- Track and compile hazard related data.
- Understand the potential implications of climate change on the frequency and extent of natural hazard events and incorporate that knowledge into hazard mitigation efforts.
- Maintain publicly available information on natural hazard risks in the Town
- Integrate hazard mitigation into initiatives and plans at the County and local level.
- Encourage local agencies representing vulnerable populations to work with the County and local communities to participate in development of the hazard mitigation plan.
- Plan outreach events educating the broader community on hazard risks and community vulnerability, and the benefits of hazard mitigation.

8. **Hazard Mitigation Resources**

Recommended Goal: Determine priorities for directing resources for hazard mitigation and response.

Objectives:

- Maintain adequate staff resources and facilities.
- Prioritize mitigation projects.
- Continue to include mitigation projects in the County and local Capital Improvement Plans.
- Pursue various funding sources.
- Encourage private property owners to implement measures to protect their own properties.

8.2 MITIGATION ACTIONS

8.2.1 What is Hazard Mitigation?

C4 ab

Hazard mitigation means to permanently reduce or alleviate the losses of life, injuries, and property resulting from natural hazards through long-term strategies. These long-term strategies include planning, policy changes, education programs, infrastructure projects, and other activities.

Hazard mitigation measures can be sorted into six categories, according to FEMA's Local Multi-Hazard Mitigation Planning Guidance:

1. **Prevention:** Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built, and direct public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.
2. **Property Protection:** Modification or removal of existing buildings or infrastructure to protect them from a hazard. Examples include acquisition, elevation, relocation, structural retrofits, flood proofing, storm shutters, and shatter resistant glass.
3. **Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about the potential risks from hazards and ways to mitigate them. Such actions include outreach projects, real estate disclosure requirements, hazard information centers, and school-age and adult education programs.
4. **Natural Resource Protection and Green Infrastructure:** Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems. These actions include low impact development, sediment and erosion control, stream corridor restoration, watershed management, urban forest and vegetation management, and wetland restoration and preservation.
5. **Structural Projects:** Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include storm water controls (e.g., culverts), floodwalls, seawalls, retaining walls, and safe rooms.
6. **Emergency Services Protection:** Actions that will protect emergency services before, during, and immediately after an occurrence. Examples of these actions include protection of warning system capability, protection of critical facilities, and protection of emergency response infrastructure.

Progress on Prior Actions

E2-b

The Planning Team reviewed the 2016 Mitigation Actions to determine what progress had been made towards implementation. **Table 8.1** provides an update on all previous mitigation actions including the description, responsible department, implementation status, and comments to describe the status.

During the previous HMP cycle, of the 29 actions, 10 projects were completed, 3 projects were deferred or deleted, and 16 actions are ongoing or modified are recommended for inclusion in the 2024 HMP.

E2-b

Table 8.1 Review of 2016 Mitigation Actions-

Category of Action & Hazard(S) To Mitigate	Action Item # and Description	Responsible Department	Status: Completed/ Existing Capability/ In Progress/ Deferred/ Deleted	Explanation Of Status as of 2022
Emergency Services Protection / Public Education and Awareness	1. Provide real time updates for viable routes to health care providers via a Smartphone APP to ensure access to health care providers during storm events.	Montgomery County Emergency Management	Deferred	Not completed but still being considered for the future
Prevention	2. Develop an emergency evacuation program and haven plan for large livestock animals.	Montgomery County Emergency Management	Completed	Animal response team and multi county plan established.
Emergency Services Protection	3. Expand the St. Johnsville Fire Department Dive Rescue and Recovery Unit.	St. Johnsonville Fire Department	Modified	There is now a Tri-county swift water team that covers dive rescue
Prevention / Public Education and Awareness	4. Revise and update local zoning ordinances to improve resiliency of projects within the 100- and 500-year floodplain.	Individual Community	In progress	
Property Protection	5. Provide gap funding to businesses to complete retrofits, elevate, or relocate.	Montgomery County	In progress	County continues to pursue grants annually
Property Protection	6. Provide backup power for all senior facilities in the County	County DPW	In progress	Many have been completed but not all

Category of Action & Hazard(S) To Mitigate	Action Item # and Description	Responsible Department	Status: Completed/ Existing Capability/ In Progress/ Deferred/ Deleted	Explanation Of Status as of 2022
Emergency Services Protection	7. Develop a debris management plan.	County DPW	Completed	
Public Education & Awareness/ Emergency Services Protection	8. A County-wide effort to identify potential sites for placement of temporary housing for residents displaced by disasters, as well as the identification of sites suitable for the relocation of houses out of the floodplain (acquisition, relocation). The Montgomery County OEM in conjunction with other county departments will lead a countywide effort, including all municipalities, to identify potential sites for the placement of temporary housing units to house residents displaced by disasters; sites within the community suitable for relocating houses out of the floodplain, or building new houses once properties in the floodplain are demolished.	County OEM with support from all municipalities and other county departments	Deleted	
Emergency Services Protection	9. Installation of and upgrades to the County's emergency communication infrastructure so that fire, police, Town, and County DPW personnel are all communicating via a coordinated VHF high bank frequency system. Back-up power generators will also be installed to ensure uninterrupted communication during power outages. – in progress; should be completed October 2016	County OEM	Completed	In 2016
Prevention/ Public Education and Awareness	10. Identify evacuation routes within the County. Once identified, education the public about evacuation procedures within the County.	County OEM	Deleted	
Public Education and Awareness	11. The County will work with municipalities to provide outreach to special purpose districts (e.g. school districts, fire districts) and private owners of critical facilities that have been identified as specifically vulnerable (e.g. within	Planning, Emergency Management, County DPW, NYS	Completed/On-going	Sherriff and EMO make quarterly visits to schools and discuss hazards

Category of Action & Hazard(S) To Mitigate	Action Item # and Description	Responsible Department	Status: Completed/ Existing Capability/ In Progress/ Deferred/ Deleted	Explanation Of Status as of 2022
	an NFIP-delineated 100- or 500-year floodplain) explaining their risk and identifying mitigation options, including the availability of grant funding. This outreach shall identify the need to protect critical facilities to the 500-year event or "worst damage scenario".	DHSES, FEMA, and municipalities		
Public Education and Awareness	12. Establish a pet-friendly shelter in conjunction with the Montgomery County SPCA	SPCA	Completed	New SPCA facility on 5S in Amsterdam
Property Protection	13. Consolidate and centralize various County departments and services into renovated and new space, located out of the floodplain. This phased project will significantly increase efficiency and eliminate disruption to County operations during and after flooding events.	Montgomery County	Completed	Sheriff and emergency management consolidated to NYS Rt 5S along with MCBDC and DPW
Prevention / Public Education and Awareness	14. Evaluate flood protection measures for the Town of Canajoharie Highway Department Garage, located on West Ames Road.	Town of Canajoharie Highway Department	In progress	Water quality improvement program grant was secured through DEC to build a new salt storage barn outside of the floodplain
Structural Project	15. Reconstruction of the damaged bulkhead along the Mohawk River adjacent to Cellect Plastics in the Village of St. Johnsville.	Village of St. Johnsville	Ongoing	To be included in 2024 Plan
Public Education and Awareness	16. Install a permanent countywide stream gauge system on Otsquago Creek and tributaries to the Mohawk River/NYS Canal System.	Town of Minden, Village of Fort Plain, and Montgomery County	Ongoing	To be included in 2024 Plan

Category of Action & Hazard(S) To Mitigate	Action Item # and Description	Responsible Department	Status: Completed/ Existing Capability/ In Progress/ Deferred/ Deleted	Explanation Of Status as of 2022
Structural Project	17. Construct a county garage to house equipment outside of the floodplain; the County currently evacuates the equipment but do not have a set location.	County DPW	Completed	Cold storage facility at 113 Park Dr.
Property Protection	18. Support Amtrak in mitigating flood impacts on the rail station which is in the floodplain. Assure that the mitigation efforts for this facility address protection to the 500-year flood event or "worst damage scenario".	Amtrak	In progress	Planning is underway for a new train station in Amsterdam
Property Protection	19. Provide flood protection for St. Mary's Hospital as it is in the Gilboa Dam inundation zone.	County DPW, Saint Mary's	Completed	Critical new culvert on Guy Park
Prevention	20. Provide code enforcement training for issues in flood hazard areas.	NYSDOS, DHSES	Ongoing	Include in new annex
Property Protection	21. Support the construction of a vehicle storage facility outside of the floodplain. Assure that the mitigation efforts for this critical facility address protection to the 500-year flood event or "worst damage scenario".	County DPW and OEM	Completed	Cold storage facility at 113 Park Dr.
Property Protection	22. Relocate County buildings (Annex building, DPW and Emergency Management storage garage), which are all located in Fonda and within the flood zone. Assure that the mitigation efforts for this critical facility address protection to the 500-year flood event or "worst damage scenario".	County	In progress	DPW and MCBDC has moved but not the annex
Property Protection / Natural Resource Protection and Green Infrastructure	23. Zimmerman Creek Channel Restoration - Phase 1: Hydraulic and hydrologic modeling to identify needed improvements to and Phase 2: provide construction funding for restoration of the Creek Channel.	County DPW	Ongoing	To be included in 2024 Plan

Category of Action & Hazard(S) To Mitigate	Action Item # and Description	Responsible Department	Status: Completed/ Existing Capability/ In Progress/ Deferred/ Deleted	Explanation Of Status as of 2022
Structural Project	24. Burtonsville Road Spur Bridge - locally owned; 10-ton weight limit; not a critical transportation route but in the event of a flooding event, it becomes one and it is the only way to cross the Schoharie Creek; in need of replacement - needs to be upgraded to increase weight limit; County owned and maintained – evacuation route and critical to emergency personnel. These efforts will support the protection of this emergency evacuation route.	County with assistance from Schoharie and Schenectady Counties	Completed	Completed 2019
Structural Project	25. A phased County-wide bridge rehabilitation and reconstruction project to improve the condition and safety of bridges along the Mohawk River and its tributaries.	Montgomery County Department of Public Works	In progress	State funds have been used to rehab and maintain bridge infrastructure
Structural Project/ Natural Resource Protection/ Green Infrastructure	26. Identify measures to reduce in- stream erosion and replace damaged and undersized storm sewer infrastructure in the Villages of Canajoharie, Fonda, and St. Johnsville.	Village of Canajoharie, Village of Fonda, Village of St. Johnsville	In progress	Many undersized culverts have been replaced and sewer studies have been completed in Fonda
Structural Project	27. Design, engineering and creating construction documents to repair damage to the Creek Wall on a stretch of the Canajoharie Creek.	Village of Canajoharie	Ongoing	To be included in 2024 Plan
Prevention / Natural Resource Protection and Green Infrastructure	28. Evaluate the extent of deterioration, design and engineering analysis, cost estimates and construction documents for the Otsquago Creek bank and channel in the vicinity of the Kellogg Street Bridge.	Village of Fort Plain	Ongoing	To be included in 2024 Plan
Structural Project	29. Storm sewer upgrade on Midline Road in the Town of Amsterdam – will be completed next year	County DPW	Completed	2016 completed with county funds

Projects **Ongoing** or **In Progress** have been included in 2024 Mitigation Actions **Table 8.3.**

Projects that have been **Completed or Deleted** are removed from the Future Action Table.

Mitigation Action and Adaptation Strategy for 2024

C4a

The Planning Team developed a revised Mitigation Action Plan for the 2024 Plan. The revised plan includes 6 projects listed as in progress from the 2016 Plan-and 15 new projects identified by Planning Team members. The completed list of 21 projects were reviewed and refined by members of the Planning Team who would lead in implementing the action.

The goal of the Plan is to reduce Montgomery County's vulnerability to hazards, and by selecting and implementing the most costs effective mitigation actions the County will be on the road toward implementing that goal. The Planning Team completed a Risk and Benefit Assessment to prioritize the most cost-effective mitigation actions, as described below.

Benefit Cost Review Methodology

C5a

The cost benefit review is the first step in completing a prioritization of mitigation projects. FEMA does not dictate how the cost benefit review is completed; however, it is a required element for the plan. For the Montgomery County HMP, the prioritization of projects was based on a benefit cost review using the FEMA STAPLEE method. STAPLEE is a cost/benefit analysis tool that includes considerations for **S**ocial, **T**echnical, **A**dministrative, **P**olitical, **L**egal, **E**nvironmental and **E**conomic issues.

In its simplest application, the STAPLEE method consists of a table where actions (and mitigation options) are shown along the vertical axis and the STAPLEE categories along the horizontal axis (see inset below). Each

STAPLEE Criteria	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)					
Considerations → for Alternative Actions ↓	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws	

action is analyzed per the categories in STAPLEE, and a mark is placed in each category that the action affects in a positive way. The action with the most marks achieves a higher priority.

For Montgomery County's HMP, the basic STAPLEE basic method was modified to allow for a more detailed evaluation accounting for both **benefits** and **costs** and reflects the types of mitigation actions being considered for the Town. For many of the criterion values, a range of scores were assigned. **Table 8.2** includes the values that were considered for each STAPLEE criteria and potential scores. A final score for each mitigation action was tabulated as the sum of the cost score and the benefit score.

Table 8.2 STAPLEE Benefit Cost Review: Criteria, Considered Values and Rating Scores

Criteria	Costs		Benefits	
	Cost Values	Cost Rating Scores	Benefit Values	Benefit Rating Scores
Social	Adversely Affects Segment of the Population or Community Values	-3=yes -2=maybe -1=no	Benefits a Large Segment of the Population	3=large 2=med 1=small
Technical	Years to Implement Project	-1=1 year -2= 2-3 years -3= 4 or more	Easy to Implement with Local Resources	3= yes
Administrative	Operations and Maintenance $$ Required	-3=high -2=med -1=low or none	Sufficient Staffing Available	3=yes 2=maybe 1=no
Political	Public Opposition	-3=high -2=med -1=low	Local Champion-Politically Acceptable	3= yes
Legal	Action Potentially Subject to Legal Challenge	-3 Subject to legal challenge	Existing Local Authority to Implement	3= state or local authority
Economic	Approximate Cost	$=$0-$50,000 $$= $50,001-$100,000 $$$ = $100,001-$1,000,000 $$$$= >$1,000,001	Funding Available	3= yes
Environmental	Adverse Environmental Impacts	-3=high -2=med -1=low	Other Community Goals Achieved	3=yes

Once a total cost benefit rating score was calculated for each mitigation action, all the mitigation actions were ranked as high, medium, and low priority for implementation by hazard category based on the range of scores for each hazard.

Table 8.3 includes the list of 21 future mitigation actions sorted by type of hazard including the total benefit cost rating score and final overall ranking. The Approximate Costs utilize the same notation as Table 8.2 Economic Cost Rating. The timeframe for implementation of each action is divided into near term (1-2 years), mid-term (3-4 years) and long term (5 years or more).

C4a
C5b

Table 8.3 2024 Mitigation Action Plan

Hazard	Mitigation Action# & Title	Mitigation Action Solution	Project Type	Lead Department	Additional Funding Sources	Approximate Cost	Timeframe	Consistency with Mitigation Goals	Consistency with other Town Plans	Score	Priority Ranking
All hazards: flooding, severe weather, severe winter storms	1. Gap Funding	Provide gap funding to businesses to complete retrofits, elevate, or relocate.	Property Protection	Montgomery County	NYS ESD Grant Funds, Market NY, NYS HCR Main Street, Rural Area Revitalization Program, HCR CDBG Microbusiness Program, US Department of Commerce Eco-nomic Development Administration, USDA Rural Assistance, Industrial Development Agencies, FEMA HMGP	$$-$$$	Short-term	Protection of Existing Infrastructure		9	Medium
All hazards: flooding, severe weather, severe winter storm,	2. Senior Facility Generators	Provide backup power for all senior facilities in the County to allow continued operations due to power outages caused by hazards. Generators will allow continued operation during natural hazard event as well as establishing cooling and heating center as needed.	Property Protection	County DPW	HMGP	$$$	Short-term	Protection of Existing Infrastructure	Yes	7	Medium
Flood	3. Zoning Ordinance Updates	Revise and update local zoning ordinances to improve resiliency of projects within the 100- and 500-year floodplain.	Prevention	Local Jurisdictions	NYS Department of State Office of Planning and Development, NYSERDA Cleaner Greener Phase II C	$	Short-term	Planning for Future Development	Yes	7	Medium
Flood	4. Vulnerable Asset Outreach	Outreach to vulnerable assets including special purpose districts (e.g. school districts, fire districts) and private owners of critical facilities (e.g. within an NFIP-delineated 100- or 500-year floodplain) explaining their risk and identifying mitigation option to address 500-year event or “worst damage scenarios", including the availability of grant funding.	Public Education and Awareness	Planning, Emergency Management, County DPW, NYS DHSES, FEMA, and municipalities	County Budget; HMA programs with local match	$	Short-term	Hazard Awareness	Yes	12	High
All hazards: flooding, severe weather, severe winter storms	5. Mitigation Action Funding	Support all jurisdictions in securing funding for mitigation actions.	Prevention / Public Education and Awareness	Montgomery County	NYS CDBG Public Infrastructure program, USDA Rural Facilities, NYS Clean Water Revolving Fund, FEMA HMGP	$-$$$	Short-term	Regional Cooperation	Yes	9	Medium
Flood	6. Amtrak Flood Mitigation	Support Amtrak in mitigating flood impacts on the rail station to address the 500-year flood event or “worst damage scenario”.	Property Protection	Amtrak	Amtrak	$	Long-term	Regional Cooperation	Yes	10	High
Flood	7. Relocate County Buildings	Relocate County buildings (Annex building, DPW and Emergency Management storage garage), which are all located in Fonda and within the flood zone. Assure that the mitigation efforts for this critical facility address protection to the 500-year flood event or “worst damage scenario”.	Property Protection	County	Bonding, HMGP	$$$$	Short-term	Protection of Existing Infrastructure	Yes	11	High
Flood	8. Mohawk River Bulkhead Working Group	Facilitate a stakeholder working group to evaluate jurisdiction for reconstruction of the damaged bulkhead along the Mohawk River adjacent to Cellect Plastics in the Village of St. Johnsville.	Structural Project	County /Village of St. Johnsville	NYS Department of State Office of Planning and Development, CDBG Infrastructure Grants, NYSDEC, NYS Canal Corporation	$	Short-term	Protection of Existing Infrastructure	Yes	13	High
Flood	9. Stream Gauge System Reevaluation	Lead effort to reevaluate installation of permanent countywide stream gauge system and its tributaries to the Mohawk River/NYS Canal System.	Public Education and Awareness	City of Amsterdam, Village of Canajoharie, Town of Minden, Village of Fort Plain,	Local Budget	$	Short-term	Hazard Awareness	Yes	10	High

Hazard	Mitigation Action# & Title	Mitigation Action Solution	Project Type	Lead Department	Additional Funding Sources	Approximate Cost	Timeframe	Consistency with Mitigation Goals	Consistency with other Town Plans	Score	Priority Ranking
				and Montgomery County							
Flood	10. Flood Code Enforcement Training	Provide code enforcement training for issues in flood hazard areas.	Prevention	NYSDOS, DHSES	State	$	Short-term	Hazard Awareness	Yes	14	High
Flood	11. Sprakers Hill Flood Management	Increase public information and awareness of flooding issues at this location by preparing a flood risk webpage to provide commmunication to emergency responders and residents, and add signage and installation of a stream gauge for MCDOT monitoring.	Property Protection	Montgomery County to monitor and report to NYS DOT	State	$-$$$	Short-term	Public Health and Safety	Yes	12	High
Flood	12. Keymark Area Flood Mitigation	Conduct an engineering assessment, including hydraulic modeling, to determine adequacy of culvert and design replacement culvert if necessary.	Property Protection	Montgomery County to monitor and report to NYS DOT	State	$-$$$	Short-term	Protection of Natural Resources	Yes	7	Medium
Flood	13. Upgrade Culverts	Upgrade undersized culverts with new culverts passing 100 year storm on Clinton Rd, Hyney Hill Rd, Lusso Rd, Corbin Hill Rd, Chapman Dr., Mohawk Dr., Sprakers Hill Rd, Fordsbush Rd, Dugway Rd, Co Daugh Ri Ty Rd, Switzer Hill Rd.	Structural Project	Montgomery County	Municipal funds, State Grants	$$$$	Short-term	Protection of Existing Infrastructure	Yes	9	Medium
Flood	14. Upgrade Bridges	Upgrade bridges on Rappa Rd, Shunk Rd, Cranes Hollow Rd, Wagners Hallow Rd, with design for 100 year storm to raise hydraulic capacity and lower flooding.	Structural Project	Montgomery County	Municipal funds, State Grants	$$$$	Short-term	Protection of Existing Infrastructure	Yes	6	Medium
Flood, severe weather	15. Zimmerman Creek Restoration	Zimmerman Creek Channel Restoration - Phase 1: Hydraulic and hydrologic modeling to identify needed improvements to remove impediments/restrictions and Phase 2: provide construction funding for restoration of the Creek Channel.	Property Protection / Natural Resource Protection and Green Infrastructure	County DPW	County Budget	$$$	Short-term depending on funding	Protection of Natural Resources	Yes	9	Medium
Flood, severe weather	16. Bridge Rehabilitation	A phased County-wide bridge improvement project to upgrade the condition and safety of bridges and increase hydraulic capacity along the Mohawk River and its tributaries.	Structural Project	Montgomery County Department of Public Works	NYSDOT LAFA Program with Local Cost Share, USDA Rural Facilities, State Transportation Improvements Program (STIP), Transportation Enhancements Program (THE)	$$$$	Short-term, phased implementation	Protection of Existing Infrastructure	Yes	12	High
Flood, severe weather	17. Erosion and Storm Sewer Upgrades	Identify measures to reduce in-stream erosion and replace damaged and undersized storm sewer infrastructure in the Villages of Canajoharie, Fonda, and St. Johnsville.	Structural Project/ Natural Resource Protection/ Green Infrastructure	Village of Canajoharie, Village of Fonda, Village of St. Johnsville	NYS CDBG Public Infrastructure program, USDA Rural Facilities, NYS Clean Water Revolving Fund, FEMA HMGP	$	Short-term	Protection of Natural Resources	Yes	14	High
Flood, severe weather	18. Canajoharie Creek Wall Resiliency Improvements	Design, engineering and creating construction documents to upgrade wall for improved flood resiliency at the Creek Wall on a stretch of the Canajoharie Creek.	Structural Project	Village of Canajoharie	NYS Department of State Office of Planning and Development, CDBG Infrastructure Grants, NYSDEC, Montgomery County Soil and Water Conservation Service, FEMA HMGP	$$$	Short-term	Protection of Existing Infrastructure	Yes	3	Low
Flood, severe weather	19. Otsquago Creek Bank Resiliency	Evaluate the extent of deterioration, design and engineering analysis, cost estimates and construction documents for the Otsquago Creek	Prevention / Natural Resource Protection and	Village of Fort Plain	NYS Department of State Office of Planning and Development, CDBG Infrastructure Grants,	$$-$$$	Short-term	Protection of Natural Resources	Yes	5	Low

Hazard	Mitigation Action# & Title	Mitigation Action Solution	Project Type	Lead Department	Additional Funding Sources	Approximate Cost	Timeframe	Consistency with Mitigation Goals	Consistency with other Town Plans	Score	Priority Ranking
		bank and channel in the vicinity of the Kellogg Street Bridge.	Green Infrastructure		NYSDEC, Montgomery County Soil and Water Conservation Service, FEMA HMGP, USEPA Green Innovation Grant Program (GIGP)						
Flood, severe storms	20. Truax Road Erosion Control	Install vegetation and plantings to stabilize hillside erosion in this location. Monitor geotech evaluations, slope stabilization design and implementation	Prevention / Structural Project	Montgomery County to monitor and report to NYS DOT	State	$	Short-term	Public Health and Safety	Yes	10	High
Flood, severe storms	21. Fort Plain Erosion Control	Install vegetation and plantings to stabilize hillside erosion in this location. Monitor geotech evaluations, slope stabilization design and implementation	Prevention / Structural Project	Montgomery County to monitor and report to NYS DOT	State	$$	Short-term	Public Health and Safety	Yes	8	Medium

8.3 PROJECT TIMELINE FOR 2024 MITIGATION ACTIONS

Table 8.3 includes 10 projects ranked with a high priority, 9 with a medium priority and 2 with a lower priority over all hazard categories. Although all projects are important to the County, a number of priority projects are summarized below relative to recommended timing of the individual mitigation actions. These projects are also identified in its *Capital Improvement Plan, Open Space Plan, Comprehensive Emergency Management Plan,* and targeted grants as mechanisms to integrate mitigation actions over the next five years.

Several higher priority projects are in progress but will take three or more years to complete, these projects include:

- Provide gap funding for businesses to complete retrofits, elevation, or relocation.
- Support jurisdictions in securing funding for mitigation actions.
- Support Amtrak in mitigating flood impacts on the rail station.
- Lead the effort to reevaluate the installation of a permanent countywide stream gauge system.
- Replace culverts and bridges on identified roads.
- Address hill erosion on Truax Road to prevent potential mudslides and ensure the stability of the road.

Priority projects identified to be completed in one or two years include:

- Ensure backup power for all senior facilities in the County.
- Revise and update local zoning ordinances for floodplain projects.
- Outreach to vulnerable assets, explaining risks and identifying mitigation options.
- Relocate County buildings in the flood zone, ensuring mitigation for the 500-year flood event.
- Facilitate a stakeholder working group for bulkhead reconstruction along the Mohawk River.
- Provide code enforcement training for issues in flood hazard zones.
- Manage flooding concerns on the south side of Sprakers Hill Road/Route 5 for enhanced road safety and community resilience.
- Address Cayadutta Creek flooding in Fonda, NY to boost community resilience.
- Phased countywide bridge rehabilitation and reconstruction project along the Mohawk and tributaries.
- Identify measures to reduce in-stream erosion and replace storm sewer infrastructure in the Village of Canajoharie, Fonda, and St. Johnsville.
- Plan improvements for Zimmerman Creek Channel based on modeling in Phase 1, followed by secured construction funding in Phase 2.
- Address hill erosion at the Kellogg Street and Clinton Street intersection in the Village of Fort Plain to enhance safety.

8.4 CONTINUED COMPLIANCE WITH NFIP

C2a

The Jurisdictions in Montgomery County continues to enforce required elements of the National Flood Insurance Program so that they may continue to participate in the program including:

- Issuing or denying floodplain development/ building permits
- Inspecting all development to assure compliance with the local floodplain zoning by-law
- Maintaining records of floodplain development
- Assisting in the preparation and revision of floodplain maps
- Helping residents obtain information on flood hazards, floodplain map data, flood insurance and proper construction measures.

The jurisdictions periodically reviews the local ordinance for consistency and uses the most recent FIRM data to determine base flood elevation or the best available scientific data for determinations of base flood elevation if no FIRM data is available to achieve a reasonable measure of flood protection.

8.5 CHANGES IN PRIORITY FROM 2016 TO 2024

E2a

While flooding continues to be the number one priority for Montgomery County, the 2024 risk and vulnerably analysis have shifted priorities to include addressing the full range of identified natural hazards.

9 Plan Evaluation and Maintenance

9.1 WHO IS INVOLVED?

D1-a

This section describes the system that Montgomery County and all participating jurisdictions have established to monitor, evaluate, and update the mitigation plan; implement the mitigation plan through existing programs; and solicit continued public involvement for plan maintenance.

A staff member of the Montgomery County Business Development Center Planning Division will be designated as Montgomery County's Hazard Mitigation Coordinator, to provide leadership and continuity for plan maintenance to ensure overarching, long term goals of the plan are addressed rather than focusing on emergency management or engineering solutions. The Hazard Mitigation Coordinator is also the chair of the Mitigation Planning Committee, described below. The duties of the Hazard Mitigation Coordinator will be in addition to the daily responsibilities of this individual.

Each participating jurisdiction is expected to maintain a representative on the Mitigation Planning Committee (MPC) who shall fulfill the monitoring, evaluation and updating responsibilities identified in this Section. Table 9-1 identifies the representation of the MPC as of the date of this Plan as indicated in each of the jurisdiction's annexes.

Table 9.1 Mitigation Planning Committee

Organization	Name	Title	Primary POC	Secondary POC
Montgomery County (Core Team Members)	Kenneth Rose	Code Enforcement Officer	X	
	Alex Kuttesch	Senior Planner/GIS		**X**
	Jeff Kaczor	Emergency Management Deputy Director		
	Stephanie Battisti	Economic Development Specialist		
Ames (Village)	Mike McMahon	Mayor	X	
City of Amsterdam	Mike Clark	City Engineer	X	
	Anthony Agresta	Fire Chief		**X**
Amsterdam (Town)	Thomas DiMezza	Town Supervisor	X	
	Bart Tessiero	Highway Superintendent		**X**
Canajoharie (Town)	Benny Goldstein	Town Supervisor	X	
	Erica Hayes	Town Clerk		**X**
Canajoharie (Village)	Peter Briele	Superintendent of Highway	X	
	Scott Sprague	Trustee		**X**
Charleston (Town)	Ellen McHale	Board Member	X	
	David Weiner	Chairman, Planning Board		**X**
Florida (Town)	Steve Anderson	Highway Superintendent	X	
	Eric Mead	Supervisor		**X**
Fonda (Village)	Bill Peeler	Mayor	X	
	Scott Sprague	Trustee		**X**
Ft. Plain (Village)	Patrick Hanifin	Mayor	X	
	Rodney Strait	Deputy Mayor		**X**
Fultonville (Village)	Tim Morford	Deputy Mayor	X	
	Vickie Romano	Village Clerk		**X**
Glen (Town)	Tim Reilly	Supervisor		

Organization	Name	Title	Primary POC	Secondary POC
	Russ Kelly	Town of Glen Council		
Hagaman (Village)	Robin Ricci	Village Trustee	X	
Minden (Town)	Joseph Hanifin	Superintendent of Highway	X	
	Cheryl Reese	Supervisor		**X**
Mohawk (Town)	Bill Holvig	Highway Superintendent	X	
	Janet DePalma	Deputy Supervisor		**X**
Nelliston (Village)	Edward Watt	Village Clerk	X	
Palatine (Town)	William MacLauchlin	Supervisor	X	
Palatine e (Village)	James Post	Mayor	X	
	Barbara Millington	Village Clerk		**X**
Root (Town)	Gary Kamp	Supervisor	X	
	LuEmma Quackenbush	Councilperson		**X**
St. Johnsville (Town)	Phoebe Sitterly	Town Supervisor	X	
St. Johnsville (Village)	Jayna Cool	Village Clerk	X	
	Marissa Nellis	Deputy Clerk		**X**
	Dawn White	**Mayor**		**X**

It is recognized that individual commitments change over time, and it shall be the responsibility of each jurisdiction and its representatives to inform the Hazard Mitigation Coordinator of any changes in representation. The Hazard Mitigation Coordinator will strive to keep the committee makeup as a uniform representation of planning partners and stakeholders within the planning area.

The MCP will be will jointly be responsible for ensuring that the Plan is monitored, evaluated, and updated throughout the next five years.

D2-a

9.2 HOW WILL THE PLAN BE MAINTAINED?

The following activities describe how the plan will be maintained and updated over the next five years:

9.2.1 Plan Monitoring

Members of the MCP will communicate midway through the 5-year plan cycle in Year 3 to report on the implementation status of each Mitigation Action identified in **Section 8** or the HMP and jurisdiction Annex Plans, noting accomplishments, challenges, and recommended modifications to identified actions. The MCP will also describe and document any new hazard data that can be incorporated in the Hazard Profile section of the Plan, noting any new hazard location, extent, and impact.

In Year 3, the MCP will review and update the implementation status of Mitigation Actions and an evaluation of the appropriateness of the actions, noting any changes warranted.

PLAN EVALUATION AND MAINTENANCE

9.2.2 Plan Evaluation

D2-b

The MCP will communicate bi-annually to evaluate the purpose and goals of the Hazard Mitigation Plan to ensure the Plan continues to serve its purpose. The mid-cycle review in Year 3 will include the following activities:

- Submit a survey to all members of the implementation group and other interested local stakeholders. The survey will poll the members on any changes or revisions to the plan that may be needed, progress and accomplishments for implementation, and any new hazards or problem areas that have been identified.
- Review survey results and make recommendations if any changes to the plan are needed
- Review the Mitigation Goals in the 2024 Montgomery Natural Hazard Mitigation Plan
- Discuss recent activities to reduce loss of life and property such as grants received/applied for and any completed Mitigation Actions
- Discuss ongoing or recent planning efforts that are consistent with the Mitigation Goals and Actions of the 2024 Montgomery Hazard Mitigation Plan

9.2.3 Plan Update

D2 c

The 2024 Montgomery County Hazard Mitigation Plan will be reviewed and updated every five years to ensure there is no lapse in Plan coverage. The Plan update process will be scheduled one to one and a half years before the Plan is set to expire.

9.3 WHEN WILL THE PLAN BE MAINTAINED?

The Plan will also be evaluated and revised following any major disasters, to determine if the recommended actions remain relevant and appropriate. The risk assessment will also be revisited to see if any changes are necessary based on the pattern of disaster damage or if data listed in Section 4. (Hazard Profiles) of this Plan has been collected to facilitate the risk assessment. This is an opportunity to increase the community's disaster resistance and build a better and stronger community. It will be the responsibility of the Montgomery County Emergency Management Director to coordinate with the MCP and ensure that appropriate stakeholders are invited to participate in the plan revision and update process following a declared disaster event.

9.4 INCORPORATION WITH OTHER PLANS

Effective mitigation is achieved when hazard awareness and risk management approaches and strategies become an integral part of public activities and decision-making. Within the county there are many existing plans and programs that support hazard risk management, and thus it is critical that this hazard mitigation plan integrate and coordinate with, and complement, those existing plans, and programs.

D3 a

The "Capability Assessment" Section 7 provides a summary and description of the existing plans, programs, and regulatory mechanisms at all levels of government (Federal, State, County and local) that support

hazard mitigation within the county. Within each jurisdictional annex in Section 11, and Section 7of the HMP the County and each participating jurisdiction have identified how they have integrated hazard risk management into their existing planning, regulatory and operational/administrative framework ("integration capabilities") and how they intend to promote this integration ("integration actions").

It is the intention of the MPC and all participating jurisdictions to incorporate mitigation planning as an integral component of daily government operations. MPC members will work with local government officials to integrate the newly adopted hazard mitigation goals and actions into the general operations of government and partner organizations. Further, the sample adoption resolution (Section 10) includes a resolution item stating the intent of the local governing body to incorporate mitigation planning as an integral component of government and partner operations. By doing so, the MPC anticipates that:

1) Hazard mitigation planning will be formally recognized as an integral part of overall emergency management efforts; and
2) The Hazard Mitigation Plan, Comprehensive Plans, Emergency Management Plans, and other relevant planning mechanisms will become mutually supportive documents that work in concert to meet the goals and needs of County residents.

During the mid cycle evaluation process, the MPC will identify additional policies, programs, practices, and procedures that could be modified to accommodate hazard mitigation actions and include these findings and recommendations in the Annual HMP Progress Report.

Participating jurisdictions have provided a detailed listing of related programs, through which mitigation planning may be implemented, in the local capability assessments provided in each jurisdictional annex (Volume II, Section 11).

9.5 ONGOING INTENT

D3 b

The information on hazard, risk, vulnerability, and mitigation contained in this Plan is based on the best science and technology available at the time of the Plan's preparation. It is recognized by all participating jurisdictions that this information can be invaluable in making decisions under other planning programs, such as comprehensive, capital improvement, and emergency management plans.

When County and local officials are considering capital improvements, they will use this plan to improve future development and safety within Montgomery County. Budgeting for future capital improvements will also contribute to realization of the goals in the Hazard Mitigation Plan. Emergency managers will be encouraged to work with Montgomery County Planning Department and local jurisdictions to ensure that high- hazard areas are subject to proper development and are designated for low risk uses.

Montgomery County government and local jurisdictions will incorporate the goals and objectives of the Hazard Mitigation Plan into community plans, plan revisions and updates. Local jurisdictions will incorporate actions that meet hazard mitigation plan goals into capital improvement plans, economic development activities, and grant submittals. The data provided in the risk assessment will be used as supporting data and justification for grant applications.

Montgomery County will ensure through the Hazard Mitigation Coordinator duties that all jurisdictions are aware they need to incorporate hazard mitigation plan aspects into their comprehensive and master plan updates, as well as making specific recommendations, such as having the Floodplain Administrator review

all site plan review and zoning permits within the 100-year floodplain and including the hazards map in their plan.

Examples of integrating mitigation criteria from this plan into planning mechanisms include:

- Incorporating vulnerability data, maps, and information from this plan as supporting documentation in grant applications.
- Use of the hazard mitigation plan as support for floodplain management actions in local planning and zoning ordinances.
- Incorporation of hazard mitigation actions into County and local operating and capital improvement budgets.
- Including hazard mitigation responsibilities in employee job descriptions such as engineer, administrator, and public works superintendent in county and local human resource manuals.
- Including mitigation criteria when updating comprehensive plans and land use regulations and ordinances.
- Utilizing the identification of hazard areas when assisting new business in finding a location, for economic development.

9.6 CONTINUTED PUBLIC INVOLVEMENT

D1-a

Montgomery County and participating jurisdictions are committed to the continued involvement of the public in the hazard mitigation process. Therefore, the plan will be posted on-line (https://www.co.montgomery.ny.us/sites/public/government/hazardmitigation/HazardMitigation_Documents/default.aspx) and copies of the Plan will be made available for review during normal business hours at the Montgomery County Business Development Center Planning Division and at local municipal buildings.

In addition, public outreach and dissemination of the Plan will/may include:

- Links to the plan on municipal websites of each jurisdiction with capability,
- Continued utilization of existing social media outlets (Facebook, Twitter) to inform the public of flood hazards and severe storm events,
- Educate the public via the jurisdictional websites on available preparedness and warning applications, and how they can be used in an emergency,
- Development of annual articles or workshops on flood and severe storm hazards to educate the public and keep them aware of the dangers of such hazards.

Municipal supervisors/mayors or clerks and the Montgomery County HMP Coordinator will be responsible for receiving, tracking, and filing public comments regarding this HMP. Contact information for Montgomery County is included in the Point of Contact information in Section 2 of this document.

The public will have an opportunity to comment on the plan via the hazard mitigation website at any time. The HMP Coordinator will maintain this website, posting new information and maintaining an active link to collect public comments.

The public can also provide input at the annual review meeting for the HMP and during the next 5-year plan update. The Montgomery County HMP Coordinator is responsible for coordinating the plan evaluation portion of the meeting, soliciting feedback, collecting, and reviewing the comments, and ensuring their incorporation in the five-year plan update as appropriate. Additional meetings may also be held as deemed necessary by the planning group. The purpose of these meetings would be to provide the public with an opportunity to express concerns, opinions, and ideas about the mitigation plan.

The MPC representatives shall be responsible to assure that:

- Public comment and input on the plan, and hazard mitigation in general, are recorded and addressed, as appropriate.
- Copies of the latest approved plan (or draft in the case that the five-year update effort is underway) are available for review at the County, along with instructions to facilitate public input and comment on the Plan. Appropriate links to the Montgomery County Hazard Mitigation Plan website are included on municipal websites.

https://www.co.montgomery.ny.us/web/sites/departments/hazardmitigation/default.asp

- Public notices are made as appropriate to inform the public of the availability of the plan, particularly during Plan update cycles.

The Montgomery County HMP Coordinator shall be responsible to assure that:

- Public and stakeholder comments and input on the plan, and hazard mitigation in general, are recorded and addressed, as appropriate.
- The Montgomery County HMP website is maintained and updated as appropriate.
- Copies of the latest approved plan (or draft in the case that the five-year update effort is underway) are available for review at appropriate County facilities (e.g., libraries), along with instructions to facilitate public input and comments on the plan.
- Public notices, including media releases, are made as appropriate to inform the public of the availability of the plan, particularly during plan update cycles.

The Montgomery County HMP Coordinator is currently designated as:

Mr. Alex Kuttesch
Senior Planner
Montgomery County Business Development Center
113 Park Drive, P.O. Box 277, Fultonville, NY 12072
(518) 853-8334
akuttesch@co.montgomery.ny.us

10 Plan Adoption

Once the draft of the Montgomery County Multi-Jurisdiction Natural Hazard Plan is reviewed by the Planning Team, stakeholders, and the public, the Plan is reviewed by NYDHSES and FEMA. If approved by NYDHSES and FEMA, the Montgomery County Select Board can officially adopt the Plan. When the Plan is approved, it enters into the five year "maintenance" phase. This Section describes the timeline for plan adoption and includes documentation of the Plan adoption by the County and each participating jurisdiction.

10.1 PLAN ADOPTION BY LOCAL GOVERINING BODIES

Adoption by the local governing bodies demonstrates the commitment of Montgomery County and each participating jurisdiction to fulfill the mitigation goals and objectives outlined in the Plan. Adoption legitimizes the Plan and authorizes responsible agencies to execute their responsibilities. For the multi-jurisdictional plan to be approved, each jurisdiction included in the Plan must have its governing body adopt the Plan before its submission to NYS DHSES and FEMA, even when a cross-jurisdiction agency has the authority to prepare such plans in the name of the respective jurisdictions.

Each participating jurisdiction will proceed with formal adoption proceedings when FEMA provides conditional approval of this Plan. Each participating jurisdiction understands that conditional approval of the Plan will be provided for those municipalities that meet the planning requirements except for the adoption requirement as stated above. Following adoption or formal action on the Plan, each participating jurisdiction must submit a copy of the resolution or other legal instrument showing formal adoption (acceptance) of the Plan to NYS DHSES. These will then be submitted to FEMA with the resolution in Appendix B of this Plan. Each participating jurisdiction understands that FEMA will transmit acknowledgement of verification of formal plan adoption and the official approval of the plan to the mitigation plan coordinator.

10.2 TIMELINE FOR PLAN ADOPTION

The timeline for Plan Adoption is as follows:

May 2024**:** After initial approval by Montgomery County at the May 28th 202 County Legislative Meeting, the Planning Team submitted the Montgomery County Natural-Hazard Mitigation Plan to NYDHSES on June 3rd, 2024. NYDHSES reviewed the Plan and returned it to the County with additional edits. Edits were completed by the County and NYDSES submitted the plan to FEMA on April 7,2025.

April 2025**:** FEMA issued an Approved Pending Adoption status on April 15, 2025.

May 2025**:** Montgomery County officially adopted the Multi-Jurisdiction Natural Hazard Mitigation Plan on May 27, 2025, during a regularly scheduled meeting.

10.3 PLAN ADOPTION

The resolutions issued to support adoption of the plan by each jurisdiction are included as Appendix B, Resolutions of Plan Adoption.

F1 a

RESOLUTION NO. 121 of 2025
DATED: May 27, 2025

A RESOLUTION OF MONTGOMERY COUNTY ADOPTING THE MONTGOMERY COUNTY MULTI-JURISDICTION NATURAL HAZARD MITIGATION PLAN 2024 (ECONOMIC DEVLOPMENT AND PLANNING)

Resolution by Legislator: Sweet **Seconded by:** Kelly

WHEREAS, Montgomery County recognizes the threat that natural hazards pose to people and property within Montgomery County; and

WHEREAS, Montgomery County has prepared a multi-hazard mitigation plan, hereby known as Montgomery County Multi-Jurisdiction Natural Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, Montgomery County Multi-Jurisdiction Natural Hazard Mitigation Plan 2024 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Montgomery County from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Montgomery County demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Montgomery County Multi-Jurisdiction Natural Hazard Mitigation Plan 2024.

RESOLVED, that the Montgomery County Legislature adopts the Montgomery County Multi-Jurisdication Natural Hazard Mitigation Plan 2024.

RESOLUTION VOTE, passed with Aye(6). Legislators Sweet, Allen and Majewski were absent. (5/27/2025)

Attachment
Statement of Legislative and Financial Impact:

I. *Nature of Request:*

Resolution adopts Montgomery County Multi-Jurisdicational Natural Hazard Mitigation Plan

II. *Justification:*

The Plan needs to be updated every five years.

III. *Legislative Impact:*

Authorized Pursuant to Article 2 of the Charter

IV. *Financial Impact:*

None

cc: County Clerk
County Treasurer

Voting Record

Kelly	(R)	Yes
Sweet	(R)	Absent
Allen	(D)	Absent
Headwell, Jr.	(R)	Yes
Wilson	(R)	Yes
Majewski	(D)	Absent
Pepe	(R)	Yes
Kowalczyk	(D)	Yes
Pawlik	(D)	Yes

STATE OF NEW YORK County of Montgomery ss.:

This is to certify that I, the Undersigned, Clerk Of The Montgomery County Legislature, have compared the foregoing copy of resolution with the original resolution now on file in the office, and which was passed by the Montgomery County Legislature on the 27th day of May, 2025, a majority of all the members elected to the Legislature voting in favor therof, and that the same is a correct and true transcript of such original resolution and of the whole thereof.

IN WITNESS WHEREOF, I have set my hand and the official seal of the Montgomery County Legislature this 2nd day of June, 2025

Totals:	**Aye:**	6
	Nay:	0
	Abstained:	0
	Absent:	3

Patricia J Bock
Legislature Clerk

This resolution was approved by the County Executive on 5/30/2025
Resolution was enacted on 5/30/2025

APPENDIX A MONTGOMERY COUNTY HMP REFERENCES

Appendix A Montgomery County HMP References

Montgomery County Hazard Mitigation Plan 2024 5-year Update References

American Planning Association (4/17/2000) Policy Guide on Planning for Sustainability, Report.

American Planning Association (3/15/2017) Regional Green Infrastructure at the Landscape Scale, Report.

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FEMA (2/28/2011) FEMA RiskMAP Flood Risk Report, Villages of Fonda and Fort Plain, Report.

FEMA (40766) Federal Guidelines for Dam Safety: Glossary of Terms (FEMA 148), Webpage <http://www.fema.gov/plan/prevent/damfailure/fema148.shtm>.

FEMA (40401) Fast Facts about Earthquakes, Webpage <http://www.fema.gov/hazard/earthquake/facts.shtm>.

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Jeffords, R. (18264) The ground-water resources of Montgomery County, New York, New York State Water Power and Control Commission Bulletin GW-23, 63 p., <https://townofminden.org/wp-content/uploads/2012/03/study4.pdf>.

Laberge Group (2/19/2009) Mid-Montgomery County Local Waterfront Revitalization Program, Town of Glen, Village of Fultonville, Town of Mohawk, Village of Fonda, Report <https://montgomerycountyworks.com/files/Final-Plan_Composite-9-11-09.pdf>.

Meehl, G. and Tebaldi, C. (37987) "More Intense, More Frequent, and Longer Lasting Heat Waves in the 21st Century", Science 305 (2004): 994-97, Webpage <https://www.co.montgomery.ny.us/web/sites/departments/maxbus/contact.asp>.

Mohawk Valley Regional Economic Development Council (2015 Plan) Mohawk Valley Regional Economic Development Council (REDC): Upstate Revitalization Investment Prospectus, Report <https://regionalcouncils.ny.gov/sites/default/files/2017-12/2015-mohawk-valley-uri-plan.pdf>.

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Montgomery County Industrial Development Agency (MCIDA) (39083) Montgomery County: Amtrak, Report.

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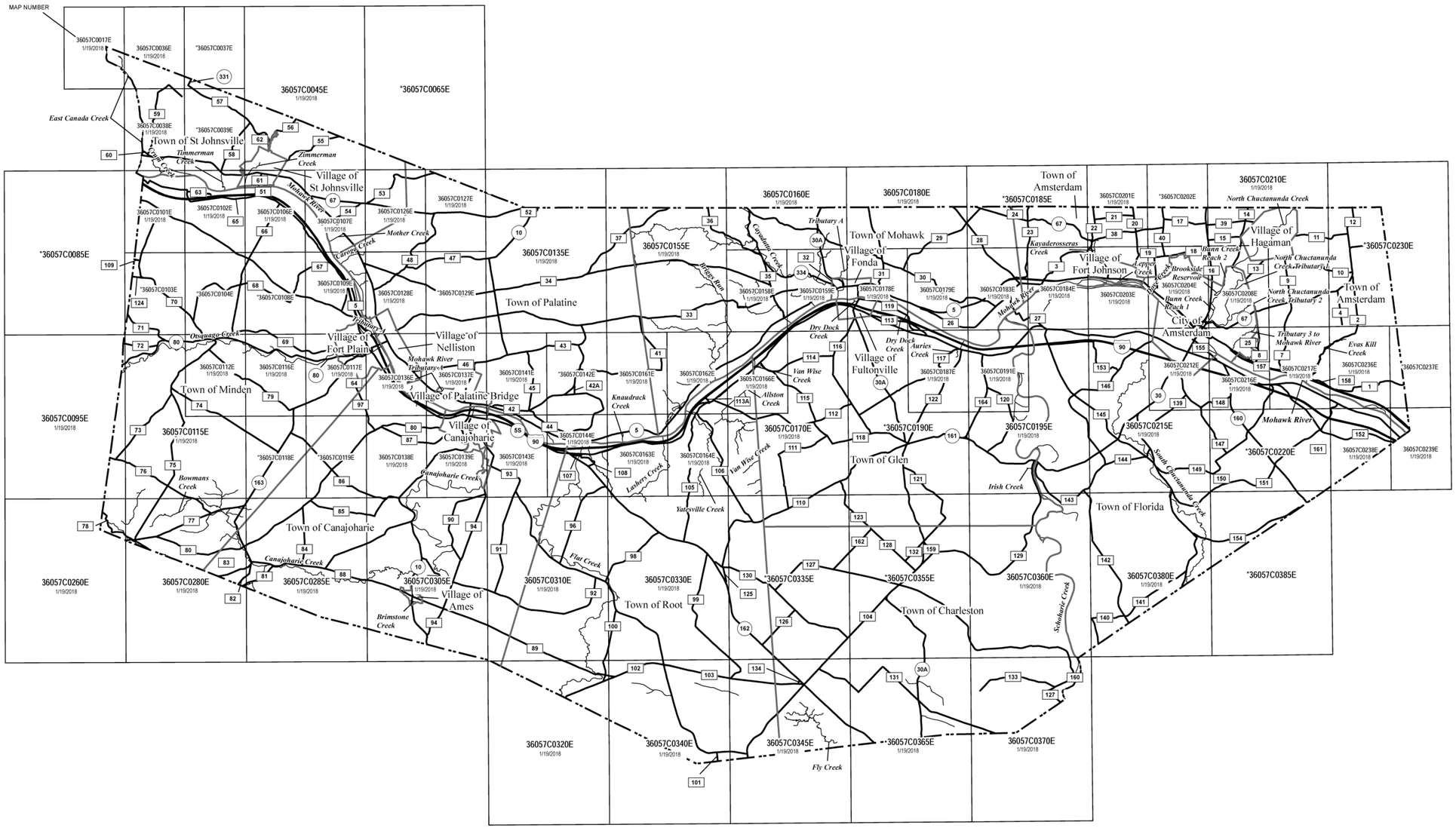

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

ELEVATION DATUM

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282
(301) 713-3242

MAP DATES

This FIRM Index displays the map date for each FIRM panel at the time that this Index was printed. Because this Index may not be distributed to unaffected communities in subsequent revisions, users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website at http://msc.fema.gov, or by calling the FEMA Map Information eXchange (FMIX) at 1-877-336-2627.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

NOTE TO USER

Future revisions to this FIRM index will only be issued to communities that are located on FIRM panels being revised. This FIRM index therefore remains valid for FIRM panels dated January 19, 2018 or earlier. Please refer to the "MOST RECENT FIRM PANEL DATE" column in the Listing of Communities table to determine the most recent FIRM index date for each community.

SEE SHEET 2 OF 2 FOR MAP REPOSITORY LISTING AND LISTING OF COMMUNITIES

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

MONTGOMERY COUNTY, NEW YORK
ALL JURISDICTIONS
(SEE LISTING OF COMMUNITIES TABLE)

MAP INDEX

SHEET 1 OF 2

PANELS PRINTED:
17, 36, 38, 45, 95, 101, 102, 106, 107, 109, 112, 115, 116, 117, 126, 127, 128, 135, 136, 137, 138, 139, 141, 143, 144, 155, 158, 159, 160, 161, 162, 163, 164, 166, 170, 178, 179, 180, 183, 184, 187, 191, 195, 201, 203, 204, 208, 210, 212, 215, 216, 217, 236, 238, 239, 260, 280, 285, 305, 310, 320, 330, 340, 345, 360, 365, 370, 380

Effective Date
January 19, 2018

MAP NUMBER
36057CIND1A

EFFECTIVE DATE

COMMUNITY NAME	COMMUNITY NUMBER	LOCATED ON PANELS	INITIAL ID DATE	INITIAL NFIP MAP DATE	INITIAL FIRM DATE	MOST RECENT PANEL DATE
AMES, VILLAGE OF	360439	0305	July 15, 1977	July 15, 1977	December 4, 1985	January 19, 2018
AMSTERDAM, CITY OF	360440	0203, 0204, 0208, 0212, 0216	March 1, 1974	March 1, 1974	July 16, 1984	January 19, 2018
AMSTERDAM, TOWN OF	360441	0183, 0184, *0185, 0201, *0202, 0203, 0204, 0208, 0210, 0216, 0217, *0230, 0236, *0237, 0238, 0239	July 19, 1974	July 19, 1974	December 1, 1987	January 19, 2018
CANAJOHARIE, TOWN OF	360442	0117, *0118, *0119, 0136, 0137, 0138, 0139, 0141, 0143, 0144, 0280, 0285, 0305, 0310, 0320	May 3, 1974	May 3, 1974	January 6, 1983	January 19, 2018
CANAJOHARIE, VILLAGE OF	360443	0137, 0139, 0141, 0143	February 22, 1974	February 22, 1974	November 3, 1982	January 19, 2018
CHARLESTON, TOWN OF	360444	*0335, 0345, *0355, 0360, 0365, 0370	July 26, 1974	July 26, 1974	October 15, 1985	January 19, 2018
FLORIDA, TOWN OF	360445	0183, 0184, 0191, 0195, 0203, 0204, 0212, 0215, 0216, 0217, *0220, 0236, 0238, 0239, 0360, 0370, 0380, *0385	August 2, 1974	August 2, 1974	December 1, 1987	January 19, 2018
FONDA, VILLAGE OF	360446	0159, 0178	March 1, 1974	March 1, 1974	January 6, 1983	January 19, 2018
FORT JOHNSON, VILLAGE OF	360447	0184, 0203	March 15, 1974	March 15, 1974	January 19, 1983	January 19, 2018
FORT PLAIN, VILLAGE OF	360448	0109, 0117, 0128, 0136	April 12, 1974	April 12, 1974	November 3, 1982	January 19, 2018
FULTONVILLE, VILLAGE OF	360449	0159, 0178	March 1, 1974	March 1, 1974	October 15, 1982	January 19, 2018
GLEN, TOWN OF	361295	0158, 0159, 0166, 0170, 0178, 0179, 0183, 0184, 0187, *0190, 0191, 0195, *0335, *0355, 0360	January 17, 1975	January 17, 1975	February 19, 1986	January 19, 2018
HAGAMAN, VILLAGE OF	360450	0208, 0210	August 6, 1976	August 6, 1976	March 18, 1986	January 19, 2018
MINDEN, TOWN OF	360451	*0085, 0095, 0101, 0102, *0103, *0104, 0106, 0107, *0108, 0109, 0112, 0115, 0116, 0117, *0118, *0119, 0136, 0260, 0280, 0285	November 1, 1974	November 1, 1974	January 19, 1983	January 19, 2018
MOHAWK, TOWN OF	360452	0155, 0158, 0159, 0160, 0161, 0162, 0163, 0164, 0165, 0178, 0179, 0180, 0183, *0185, 0187, 0191	February 15, 1974	February 15, 1974	August 5, 1985	January 19, 2018
NELLISTON, VILLAGE OF	360453	0128, 0136	February 15, 1974	February 15, 1974	November 3, 1982	January 19, 2018
PALATINE, TOWN OF	361413	*0065, 0107, 0109, 0126, 0127, 0128, *0129, 0135, 0136, 0137, 0141, *0142, 0143, 0144, 0155, 0161, 0163	November 29, 1974	November 29, 1974	May 4, 1987	January 19, 2018
PALATINE BRIDGE, VILLAGE OF	360454	0137, 0141	February 15, 1974	February 15, 1974	November 17, 1982	January 19, 2018
ROOT, TOWN OF	360455	0144, 0162, 0163, 0164, 0166, 0170, 0310, 0320, 0330, *0335, 0340, 0345	October 25, 1974	October 25, 1974	April 1, 1988	January 19, 2018
ST. JOHNSVILLE, TOWN OF	360456	0017, 0036, *0037, 0038, *0039, 0045, *0065, 0101, 0102, 0106, 0107, 0109, 0126	August 16, 1974	August 16, 1974	March 16, 1983	January 19, 2018
ST. JOHNSVILLE, VILLAGE OF	360457	*0039, 0045, 0102, 0106	February 15, 1974	February 15, 1974	February 19, 1986	January 19, 2018

* PANEL NOT PRINTED

MONTGOMERY COUNTY (All Jurisdictions):
Montgomery County Office Building Annex
20 Park Street
Fonda, New York, 12068

AMES, VILLAGE OF:
Ames Village Office
595 Latimer Hill Road
Ames, New York, 13317

AMSTERDAM, CITY OF:
Amsterdam City Hall
61 Church Street
Amsterdam, New York, 12010

AMSTERDAM, TOWN OF:
Amsterdam Town Office Building
283 Manny's Corners Road
Amsterdam, New York, 12010

CANAJOHARIE, TOWN OF:
Canajoharie Town Office
12 Mitchell Street
Canajoharie, New York, 13317

CANAJOHARIE, VILLAGE OF:
Canajoharie Village Office
75 Erie Boulevard
Canajoharie, New York, 13317

CHARLESTON, TOWN OF:
Charleston Municipal Building
480 Corbin Hill Road
Sprakers, New York, 12166

FLORIDA, TOWN OF:
Florida Town Office Building
214 Fort Hunter Road
Amsterdam, New York, 12010

FONDA, VILLAGE OF:
Fonda Municipal Building
8 E Main Street
Fonda, New York, 12068

FORT JOHNSON, VILLAGE OF:
Fort Johnson Municipal Building
1 Prospect Street
Fort Johnson, New York, 12070

FORT PLAIN, VILLAGE OF:
Fort Plain Village Hall
168 Canal Street
Fort Plain, New York, 13339

FULTONVILLE, VILLAGE OF:
Fultonville Village Court Municipal Building
10 Erie Street
Fultonville, New York 12072

GLEN, TOWN OF:
Glen Town Office
7 Erie Street
Fultonville, New York, 12072

HAGAMAN, VILLAGE OF:
Pawling Hall
86 Pawling Street
Hagaman, New York, 12086

MINDEN, TOWN OF:
Minden Municipal Town Building
134 Highway 80
Fort Plain, New York 13339

MOHAWK, TOWN OF:
Richard A. Papa Office Building
2-4 Park Street
Fonda, New York, 12068

NELLISTON, VILLAGE OF:
Nelliston Village Municipal Building
11 River Street
Nelliston, New York, 13410

PALATINE, TOWN OF:
Palatine Town Office
141 West Grand Street
Palatine Bridge, New York, 13428

PALATINE BRIDGE, VILLAGE OF:
Palatine Bridge Village Office
11 W Grand Street
Palatine Bridge, New York, 13428

ROOT, TOWN OF:
Root Town Office
1048 Carlisle Road
Sprakers, New York, 13317

ST. JOHNSVILLE, TOWN OF:
St. Johnsville Town Office
7431 State Highway 5
St. Johnsville, New York, 13452

ST. JOHNSVILLE, VILLAGE OF:
St. Johnsville Village Office
16 Washington Street
St. Johnsville, New York, 13452

Please note that this Index was printed. Because this Index may not be distributed to unaffected communities in subsequent revisions, users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website at http://msc.fema.gov, or by calling the FEMA Map Information eXchange (FMIX) at 1-877-336-2627.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well at the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

NOTE TO USER

Future revisions to this FIRM index will only be issued to communities that are located on FIRM panels being revised. This FIRM index therefore remains valid for FIRM panels dated January 19, 2018 or earlier. Please refer to the "MOST RECENT FIRM PANEL DATE" column in the Listing of Communities table to determine the most recent FIRM index date for each community.

ELEVATION DATUM

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282
(301) 713-3242

SEE SHEET 1 OF 2 FOR FIRM PANEL LAYOUT.

NFIP

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

MONTGOMERY COUNTY, NEW YORK
ALL JURISDICTIONS
(SEE LISTING OF COMMUNITIES TABLE)

MAP INDEX

SHEET 2 OF 2

NATIONAL FLOOD INSURANCE PROGRAM

MAP NUMBER
36057CIND2A

EFFECTIVE DATE

Appendix B Public Outreach Documentation

Montgomery County Jurisdictional Outreach Methods

Overview

Global climate change is a local environmental justice issue because it has disproportionate impacts on socially vulnerable populations in New York. With climate change expected to exacerbate current and future vulnerabilities in our communities, municipalities are strongly encouraged to approach their Hazard Mitigation Plans (HMP) with a clear focus on addressing existing environmental, economic, and social disparities. Targeted outreach to stakeholders representing nonprofit organizations including community based organizations that support underserviced communities and socially vulnerable populations is a specifically required element under the 2023 FEMA Local Hazard Mitigation Policy (Element A2-a.5)

The work of building a climate resilient community will require a concerted effort to offer all residents, particularly members of Environmental Justice (EJ) Populations (as defined in the Commissioner Policy 29) (i.e., those who do not meet fair treatment and meaningful involvement based either on race, color, and/or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies) an opportunity to shape their community's climate adaptation strategies. The HMP should be designed so that the climate adaptation work of your county provides "seats at the table" for these populations. It is important to consider whole community preparedness, which is a shared responsibility that calls for the involvement of everyone – not just the government – in preparedness efforts. Whole communities involve:

- Individuals and families, including those with access and functional needs
- Businesses
- Faith-based and community organizations
- Nonprofit groups
- Schools and academia
- Media outlets
- All levels of government, including state, local, tribal, territorial, and federal partners

This guidance document suggests several ways to integrate outreach and engagement into the Hazard Mitigation Planning process to achieve more equitable outcomes for Montgomery County.

The goal for outreach is to bring together diverse community-based partners representing the interest of the whole community including leaders who are able to implement mitigation and leaders from underserved communities and socially vulnerable populations.

Once completed, the HMP will provide relevant demographic information related to the EJ population (i.e., income, minority, and English isolation); a description of where the community is located geographically; and how the incorporation of EJ population voices will increase climate resiliency (i.e., the ability to anticipate, cope with, and rebound from events and trends related to climate change hazards) for these areas.

Each municipality within Montgomery County with EJ populations must demonstrate a commitment to working with members and representatives of these communities. By utilizing methods listed in this memo, outreach practices can be selected that are culturally sensitive, designed to overcome barriers to participation, and ultimately will improve public participation outcomes.

Outreach and Engagement Methods

Public involvement and community engagement methods utilized in the implementation of the Hazard Mitigation Plan's outreach element are recommended as a starting point to improve community communications at the county and local level. A successful plan will have a mix of print, digital, in-person, and equitable engagement methods. Involving stakeholders (any person, group, or institution that can affect or be affected by a course of action) helps develop support for the plan and identifies barriers to implementation early on. It will also identify ways stakeholder input will be incorporated into the plan and a method by which the results of community engagement (i.e., input received) and final deliverables are communicated back to stakeholders. The stakeholders that ought to be included in the planning process are neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development, as well as business, academia, and other private and nonprofit interests especially including agencies or institutions that support underserved communities and socially vulnerable populations.

The engagement methods presented below are example components of a successful Public Involvement and Community Engagement Plan.

A. Printed Engagement: Example Methods to inform about meetings

- Posters hung in Local Businesses, Community Centers, or other publicly accessible venues, with a minimum of 20 throughout the Village, City, or Town
- Direct mailings- post cards to all residences and businesses within the community and physical address to which written comments may be submitted/and link to project website/or other mechanism for giving feedback- consider large print
- Ad or notice in Local Print Newsletters that informs residents of the project and its resiliency benefits

B. Electronic/Digital Engagement: Example Methods

- Online survey requesting resident feedback on projects
- Interactive project website + commenting function and photo posting
- Digital video streaming of presentation
- Social media communication on multiple platforms
- Email to distribution list that includes community stakeholder groups

C. In-Person Engagement: Example Methods

- Public walking tour of impacted neighborhoods
- Other similar strategy
- Drop-in hours at business, community center, or other venue near site(s)
- Staffed "Pop-Up" event
- Staffed table at community event or festival
- Presenting scope of plan at an established community group's meeting

D. Mechanisms to Inform Stakeholders of Results of Engagement Process and Final Project Deliverables: Example Methods

- Establish and advertise one or more information repositories (to hold all plan documents) in the community that are convenient and accessible to the impacted community.

- Hold a public meeting to share results of the public involvement and community engagement process and how that feedback was incorporated into the final deliverables.
- Create a document summarizing the response to public comments received and post that document along with the deliverable to the project website and notify stakeholders.
- Other innovative mechanism may be proposed to accomplish this goal.

E. Standards for public involvement and community engagement

Below are some standards for the stated public involvement and community engagement activities:

All printed and electronic/digital engagement materials could:

- Include a brief summary of the HMP. Language can be adapted from the FEMA guidebook's Task 3 Outreach Strategy.
- Include a brief summary of the proposed project.
- Identify the County's committee staff members as well as a municipal contact person.
- Identify the process a resident would follow to self-identify as a stakeholder in a given project (e.g. signing up for an email list or requesting a formal invitation to serve as a stakeholder in a workshop).
- Provide an email address, website, hotline phone number, and any alternate way of providing feedback directly to the project team.
- Indicate where a resident can go to learn more about the HMP program and local climate change data: https://headwaterseconomics.org/apps/neighborhoods-at-risk/36057/explore/map

All in-person engagement events could/could be:

- Open to the general public and publicized at least 14 days in advance using at least one electronic/digital method and one printed method.
- Held in a location that is compliant with the Americans with Disabilities Act.
- Held in a location that is generally accepted by the community as a safe, welcoming facility for all persons regardless of race, gender, gender-identity, ability, ethnicity, economic status, or sexual orientation.
- Selected according to their proximity to public transportation routes and options; it is also highly recommended that transportation and/or stipends for meeting attendance be provided for individuals who do not have a means or method of attending an event.
- Provide a child-friendly environment with modest refreshments.

Representative	Jurisdiction	Office/Agency/Department	Title	Representative Type	Core Team Kickoff Meeting #1 - 6/1/22	Core Team Working Meeting #2 - 10/14/22	HMP Planning Process Public Meeting #1 - 12/7/22	Core Team Working Meeting #3 - 1/11/23	Core Team Working Meeting #4 - 3/1/23	HMP Planning Process Public Meeting #2 - 3/28/23	Core Team Working Meeting #5 - 4/18/23	Core Team Working Meeting #6 - 5/3/23	Core Team Working Meeting #7 - 8/9/23
Alex Kuttesch	Montgomery County	Business Development Center	Senior Planner	Core Team	X	X	X	X	X	X	X	X	X
Eric Mead	Montgomery County	Department of Public Works	Commissioner of Public Works	Core Team	X	X		X	X		X	X	X
Jeff Kaczor	Montgomery County	Emergency Management	Director	Core Team	X	X	X	X	X		X	X	X
Kenneth Rose	Montgomery County	Business Development Center	Director	Core Team	X	X			X			X	
Stephanie Battisti	Montgomery County	Business Development Center	Planning Assistant	Core Team	X	X	X	X	X	X	X	X	X
Mike Clark	City of Amsterdam		Civil Engineer	Local Planning Team						X			
Tom DiMezza	Town of Amsterdam		Town Supervisor	Local Planning Team									
Erica Hayes	Town of Canajoharie		Town Clerk	Local Planning Team									
Ellen McHale	Town of Charleston		Board Member	Local Planning Team						X			
Eric Mead	Town of Florida		Supervisor	Local Planning Team									
Timothy Reilly	Town of Glen		Supervisor	Local Planning Team									
Joseph Hanifin	Town of Minden		Superintendent of Highway	Local Planning Team			X						
Bill Holvig	Town of Mohawk		Highway Superintendent	Local Planning Team									
Phoebe Sitterly	Town of St. Johnsville		Supervisor	Local Planning Team									
James Thomas Kilcullen	Village of Ames		Mayor	Local Planning Team									
Peter Briele	Village of Canajoharie		Superintendent of Highway	Local Planning Team						X			
Bill or William Peeler	Village of Fonda		Mayor	Local Planning Team						X			
Scott Sprague	Village of Fonda		Trustee	Local Planning Team									
Patrick Hanifin	Village of Fort Plain		Mayor	Local Planning Team									
Vickie Romano	Village of Fultonville		Clerk	Local Planning Team									
Debra Gros	Village of Nelliston		Mayor	Local Planning Team									
James F. Post	Village of Palatine Bridge		Mayor	Local Planning Team									
Marissa Nellis	Village of St. Johnsville		Deputy Clerk	Local Planning Team									
Dawn White-Schwartz	Village of St. Johnsville		Mayor	Local Planning Team									
Anthony Agresta	City of Amsterdam		Fire Chief	Local Planning Team									
Bart Tessiero	Town of Amsterdam		Highway Superintendent	Local Planning Team						X			
Michael Muhlebeck	Town of Canajoharie		Acting Town Supervisor	Local Planning Team									
David Weiner	Town of Charleston		Planning Board, Chairman	Local Planning Team			X			X			
Steve Anderson	Town of Florida		Superintendent of Highways	Local Planning Team									
Russ Kelly	Town of Glen		Town of Glen Council	Local Planning Team									
Cheryl Reese	Town of Minden		Supervisor	Local Planning Team			X						
Janet DePalma	Town of Mohawk		Town Supervisor	Local Planning Team						X			
Lynn Stever	Town of St. Johnsville		Clerk	Local Planning Team									
Brenda Rava	Village of Ames		Clerk	Local Planning Team									
Sandra Ward	Village of Canajoharie		Clerk	Local Planning Team						X			

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Christine Kerns	Village of Fonda		Clerk	Local Planning Team									
Rodney Strait	Village of Fort Plain		Deputy Mayor	Local Planning Team									
Tim Morford	Village of Fultonville		Deputy Mayor	Local Planning Team									
Edward Watt	Village of Nelliston		Clerk	Local Planning Team			X			X			
Emily Shults	Village of Palatine Bridge		Village Clerk	Local Planning Team									
Jayna Cool	Village of St. Johnsville		Clerk/Treasurer/Registrar	Local Planning Team			X						
Less Haasan	Ames		Building Code Official	Local Stakeholders									
Brenda Rava	Ames		Fiscal/Budget Officer	Local Stakeholders									
Susan Porter	Ames		Trustee	Local Stakeholders									
Betty Kilcullen	Ames		Trustee	Local Stakeholders									
Bart A Tessiero	Town of Amsterdam		Floodplain Manager	Local Stakeholders									
Carl Rust	Town of Amsterdam		Public Works Director	Local Stakeholders									
Stanley Waddle	Village of Fonda		Floodplain Manager/ Floodplain Administrator	Local Stakeholders									
Christopher Weaver	Village of Fonda		Public Works Director / City Engineer	Local Stakeholders									
Stanley Waddle	Village of Fonda		Building Code Official	Local Stakeholders									
Christine Kearns	Village of Fonda		Fiscal/Budget Officer	Local Stakeholders									
William Peeler	Village of Fonda		Manager/Administrator	Local Stakeholders									
Lynn Dumar	Village of Fonda		Elected Officials	Local Stakeholders									
Timothy Healey	Village of Fonda			Local Stakeholders									
Scott Sprague	Village of Fonda		Alternative for Mayor Peeler	Local Stakeholders			X			X			
Jd Downing	Town of Glen		Land Use/ Community Planner	Local Stakeholders									
Timothy Reilly	Town of Glen		Emergency Manager	Local Stakeholders									
William Beddig	Town of Glen		Public Works Director / City Engineer	Local Stakeholders									
Thomas DiCaprio	Town of Glen		Building Code Official	Local Stakeholders									
Timothy Reilly	Town of Glen		Fiscal/Budget Officer	Local Stakeholders									
Russell Kelly	Town of Glen		Elected Officials	Local Stakeholders									
Rosalie Farina	Town of Glen		Other 1: Council Member	Local Stakeholders									
Ronald Crewell	Town of Glen		Other 2:	Local Stakeholders									
Susan Whiteman	Town of Glen		Other 3:	Local Stakeholders									
Patrick Clear	Town of Mohawk		Land Use/ Community Planner	Local Stakeholders									
Jeff Kaczor	Town of Mohawk		Emergency Manager	Local Stakeholders									
Bill Holvig	Town of Mohawk		Floodplain Manager/ Floodplain Administrator	Local Stakeholders									
Bill Holvig	Town of Mohawk		Public Works Director / City Engineer	Local Stakeholders									
Stan Waddle	Town of Mohawk		Building Code Official	Local Stakeholders									
Janet DePalma	Town of Mohawk		Fiscal/Budget Officer	Local Stakeholders									

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Janet DePalma	Town of Mohawk		Manager/Administrator	Local Stakeholders									
Tony Bruno (councilman)	Town of Mohawk		Elected Officials	Local Stakeholders									
Gerry Murray (councilman)	Town of Mohawk		Elected Officials	Local Stakeholders									
Matt Paton (councilman)	Town of Mohawk		Elected Officials	Local Stakeholders									
Debbie Parslow(councilperson)	Town of Mohawk		Elected Officials	Local Stakeholders									
Edward Watt	Village of Nelliston		Land Use/ Community Planner	Local Stakeholders									
John Mack	Village of Nelliston		Emergency Manager	Local Stakeholders									
N/A	Village of Nelliston		Floodplain Manager/ Floodplain Administrator	Local Stakeholders									
John Mack	Village of Nelliston		Public Works Director / City Engineer	Local Stakeholders									
Cliff Dorrough	Village of Nelliston		Building Code Official	Local Stakeholders									
Edward Watt	Village of Nelliston		Fiscal/Budget Officer	Local Stakeholders									
Debra Gros	Village of Nelliston		Manager/Administrator	Local Stakeholders									
Debra Gros, Niel Yerdon	Village of Nelliston		Elected Officials	Local Stakeholders									
Edward Watt	Village of Nelliston		Other 1: Deputy OEM Coordinator	Local Stakeholders									
Debra Gros	Village of Nelliston		Other 2:	Local Stakeholders									
Lisa Grimm Hoffman	Village of Nelliston		Other 3:	Local Stakeholders									
Jayna Cool	St. Johnsville		Clerk/Treasurer	Local Stakeholders									
Shannon Countryman	St. Johnsville		Emergency Manager	Local Stakeholders									
Clifton Dorrough	St. Johnsville		Floodplain Manager/Floodplain Administrator and Building Code Official	Local Stakeholders									
Jarrod Walrath	St. Johnsville		Public Works Director/City Engineer	Local Stakeholders									
Art Dockerty	St. Johnsville		Manager/Administrator and Elected Officials	Local Stakeholders									
Steve Elwood	St. Johnsville		Elected Officials	Local Stakeholders									
Kathy Buckley	St. Johnsville		Elected Officials	Local Stakeholders									
James Castrucci	St. Johnsville		Elected Officials	Local Stakeholders									
Rick Sager	St. Johnsville		OEM Coordinator	Local Stakeholders									
Jeff Kaczor	St. Johnsville		other	Local Stakeholders									
Billy Vicciarelli	Village of St. Johnsville			Local Stakeholders									
Lu Quackenbush	Town of Root			Local Stakeholders									
Adam	Town of Amsterdam		Town Engineer	Local Stakeholders									
Robin Ricci	Village of Hagaman			Local Stakeholders									
Bob Dolhanyk				Local Stakeholders									
Benny				Local Stakeholders									
Nancy Knudsen				Local Stakeholders									
David				Local Stakeholders									
Tammy Pelayes				Local Stakeholders									

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Andrea Hitchener	Village of Canajoharie			Local Stakeholders			X						
Mayor				Local Stakeholders			X						
Karl				Local Stakeholders			X						
Other				Local Stakeholders			X						
Other				Local Stakeholders			X						
Other				Local Stakeholders			X						
Chris D.				Local Stakeholders									
Kenneth Adamczyk	Fulton County		Economic Development Specialist	Regional Stakeholders									
Ray Gillen	Schenectady County		Commissioner Economic Development & Planning	Regional Stakeholders									
Zachary Thompson	Schoharie County		Planner	Regional Stakeholders									
Jody Zakrevsky	Otsego County		CEO	Regional Stakeholders									
John Kent Jr.	Herkimer County		Program Director	Regional Stakeholders									
Tom Porter	Kaniatsiohareke Mohawk Community	Kaniatsiohareke Mohawk Community		Regional Stakeholders									
Paul Gorgen	Kaniatsiohareke Mohawk Community		Kaniatsiohareke Board Member	Regional Stakeholders									
Greg Truckenmiller (President)	Johnstown NY	Fulton Montgomery Community College		Regional Stakeholders									
Sally Hoffman (Director of Nursing Services)	St. Johnsville	St. J Nursing Home		Regional Stakeholders									
Roxanne Barrett	Palatine Bridge	Palatine Nursing Home		Regional Stakeholders									
Shelley Peruzzi	Canajoharie	Arkell Senior Center		Regional Stakeholders									
Jennifer Saunders (CEO)	Fultonville	Liberty ARC		Regional Stakeholders									
Jessica Edwards	Amsterdam	Capstone Center		Regional Stakeholders									
Elizabeth Stocker	Amsterdam	Edward L. Wilkinson		Regional Stakeholders									
Lori Tambasco	Amsterdam	River Ridge Living Center		Regional Stakeholders									
Other	Amsterdam	Hillcrest Spring Assisted Living		Regional Stakeholders									
Pastor David Bowley	Canajoharie	Faith Hope and Love Church		Regional Stakeholders									
Pastor Philip Bishop	Amsterdam	Freedom Life Baptist Church		Regional Stakeholders									
Janice Dillenbeck	Canajoharie	Canjo Youth Center		Regional Stakeholders									
Mark Kelly	Sprakers	Faith Bible		Regional Stakeholders									
Pastor Josh Fetterhoff	Sprakers	Christian Church of Rural Grove		Regional Stakeholders									
Jeffrey Methven MBA	Amsterdam	St. Marys		Regional Stakeholders									
Tommy Ibrahim MD, MHA	Canajoharie	Bassett Healthcare		Regional Stakeholders									
Thomas Pasquarelli	Amsterdam	GAVAC - Greater Amsterdam Volunteer Ambulance Corps, Inc.		Regional Stakeholders									
Jerry Golub	Palatine Bridge, Amsterdam	Price Chopper		Regional Stakeholders									
Mike Vail	Amsterdam	Hannaford		Regional Stakeholders									
Other	Amsterdam	Walmart		Regional Stakeholders									
Nicholas Pace	Amsterdam	Target		Regional Stakeholders									

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Other	Palatine Bridge, Amsterdam	Walgreens		Regional Stakeholders									
Other	Amsterdam	CVS		Regional Stakeholders									
David Warner	St. Johnsville	Kinney Drugs		Regional Stakeholders									
Carl Gray	Fort Plain	Curtis Lumber		Regional Stakeholders									
Diane Burkdorf	St. Johnsville	C H Burkdorf and Son Inc		Regional Stakeholders									
Ashley Miller	Amsterdam	Lowes		Regional Stakeholders									
Carm Carbone	Amsterdam	Home Depot		Regional Stakeholders									
Other	throughout county	National Grid		Regional Stakeholders									
Gregory Sandfort	Palatine Bridge	Tractor Supply		Regional Stakeholders									
Scott Miller	Fultonville	United Ag & Turf		Regional Stakeholders									
Angelo Giovanni	Palatine Bridge	Hatchet Hardware of Palatine Bridge		Regional Stakeholders									
Chris Przestrzelski	Fort Plain	Green Pines Septic & Excavation		Regional Stakeholders									
David Warrington		FEMA Region 2 External Affairs	Administrator	State/Fed									
Elizabeth O'Reilly		New York State Division of Homland Security and Emergency Services (NYS DHSES)	Planning Manager, Hazard Mitigation	State/Fed			X						
Kevin Clapp		NYS DHSES	Supervisor, Hazard Mitigation Planning	State/Fed									
Corrina Cavallo		NYS DHSES	Mitigation Planning	State/Fed									
Marlene White		NYS DHSES	State Officer	State/Fed									
Resilient NY Program		New York State Department of Environmental Conservation	Division of Water	State/Fed									
Michael Tarasoff		DHSES		State/Fed									
Brandee Nelson		Tighe & Bond	Consulting Team		X	X	X	X	X		X	X	X
Gabrielle Belfit		Tighe & Bond	Consulting Team		X	X	X	X	X	X	X	X	X
Sharon Rooney		Tighe & Bond	Consulting Team		X	X	X	X	X	X	X	X	X
Alexis Freudenberg		Tighe & Bond	Consulting Team				X			X			
Arica McCarthy		Tighe & Bond	Consulting Team				X			X			
Ryan Morrison		Tighe & Bond	Consulting Team										

Representative	Jurisdiction	Office/Agency/Department	Title	Representative Type	HMP Planning Process Public Meeting #3 - 9/19/23	Core Team Working Meeting #8 - 10/13/23	HMP Planning Process Public Meeting #4 - 11/16/23	Core Team Working Meeting #9 - 12/14/23	Core Team Working Meeting #10 - 1/31/24	HMP Planning Process Public Meeting #5 - 2/XX/24	Core Team Subgroup Meeting #11 - 2/XX/24	Core team Subgroup Meeting #12 - 3/XX/24
Alex Kuttesch	Montgomery County	Business Development Center	Senior Planner	Core Team	X	X	X	X	X			
Eric Mead	Montgomery County	Department of Public Works	Commissioner of Public Works	Core Team	X	X		X	X			
Jeff Kaczor	Montgomery County	Emergency Management	Director	Core Team	X	X		X	X			
Kenneth Rose	Montgomery County	Business Development Center	Director	Core Team	X							
Stephanie Battisti	Montgomery County	Business Development Center	Planning Assistant	Core Team	X	X	X	X	X			
Mike Clark	City of Amsterdam		Civil Engineer	Local Planning Team								
Tom DiMezza	Town of Amsterdam		Town Supervisor	Local Planning Team	X							
Erica Hayes	Town of Canajoharie		Town Clerk	Local Planning Team								
Ellen McHale	Town of Charleston		Board Member	Local Planning Team	X		X					
Eric Mead	Town of Florida		Supervisor	Local Planning Team								
Timothy Reilly	Town of Glen		Supervisor	Local Planning Team			X					
Joseph Hanifin	Town of Minden		Superintendent of Highway	Local Planning Team								
Bill Holvig	Town of Mohawk		Highway Superintendent	Local Planning Team	X							
Phoebe Sitterly	Town of St. Johnsville		Supervisor	Local Planning Team								
James Thomas Kilcullen	Village of Ames		Mayor	Local Planning Team								
Peter Briele	Village of Canajoharie		Superintendent of Highway	Local Planning Team	X		X					
Bill or William Peeler	Village of Fonda		Mayor	Local Planning Team								
Scott Sprague	Village of Fonda		Trustee	Local Planning Team								
Patrick Hanifin	Village of Fort Plain		Mayor	Local Planning Team	X		X					
Vickie Romano	Village of Fultonville		Clerk	Local Planning Team								
Debra Gros	Village of Nelliston		Mayor	Local Planning Team								
James F. Post	Village of Palatine Bridge		Mayor	Local Planning Team	X							
Marissa Nellis	Village of St. Johnsville		Deputy Clerk	Local Planning Team								
Dawn White-Schwartz	Village of St. Johnsville		Mayor	Local Planning Team			X					
Anthony Agresta	City of Amsterdam		Fire Chief	Local Planning Team								
Bart Tessiero	Town of Amsterdam		Highway Superintendent	Local Planning Team			X					
Michael Muhlebeck	Town of Canajoharie		Acting Town Supervisor	Local Planning Team	X		X					
David Weiner	Town of Charleston		Planning Board, Chairman	Local Planning Team			X					
Steve Anderson	Town of Florida		Superintendent of Highways	Local Planning Team								
Russ Kelly	Town of Glen		Town of Glen Council	Local Planning Team								
Cheryl Reese	Town of Minden		Supervisor	Local Planning Team								
Janet DePalma	Town of Mohawk		Town Supervisor	Local Planning Team								
Lynn Stever	Town of St. Johnsville		Clerk	Local Planning Team								
Brenda Rava	Village of Ames		Clerk	Local Planning Team								
Sandra Ward	Village of Canajoharie		Clerk	Local Planning Team	X		X					

Representative	Jurisdiction	Office/Agency/Department	Title	Representative Type	HMP Planning Process Public Meeting #3 - 9/19/23	Core Team Working Meeting #8 - 10/13/23	HMP Planning Process Public Meeting #4 - 11/16/23	Core Team Working Meeting #9 - 12/14/23	Core Team Working Meeting #10 - 1/31/24	HMP Planning Process Public Meeting #5 - 2/XX/24	Core Team Subgroup Meeting #11 - 2/XX/24	Core team Subgroup Meeting #12 - 3/XX/24
Christine Kerns	Village of Fonda		Clerk	Local Planning Team								
Rodney Strait	Village of Fort Plain		Deputy Mayor	Local Planning Team								
Tim Morford	Village of Fultonville		Deputy Mayor	Local Planning Team								
Edward Watt	Village of Nelliston		Clerk	Local Planning Team	X							
Emily Shults	Village of Palatine Bridge		Village Clerk	Local Planning Team								
Jayna Cool	Village of St. Johnsville		Clerk/Treasurer/Registrar	Local Planning Team			X					
Less Haasan	Ames		Building Code Official	Local Stakeholders								
Brenda Rava	Ames		Fiscal/Budget Officer	Local Stakeholders								
Susan Porter	Ames		Trustee	Local Stakeholders								
Betty Kilcullen	Ames		Trustee	Local Stakeholders								
Bart A Tessiero	Town of Amsterdam		Floodplain Manager	Local Stakeholders								
Carl Rust	Town of Amsterdam		Public Works Director	Local Stakeholders								
Stanley Waddle	Village of Fonda		Floodplain Manager/ Floodplain Administrator	Local Stakeholders								
Christopher Weaver	Village of Fonda		Public Works Director / City Engineer	Local Stakeholders								
Stanley Waddle	Village of Fonda		Building Code Official	Local Stakeholders								
Christine Kearns	Village of Fonda		Fiscal/Budget Officer	Local Stakeholders								
William Peeler	Village of Fonda		Manager/Administrator	Local Stakeholders								
Lynn Dumar	Village of Fonda		Elected Officials	Local Stakeholders								
Timothy Healey	Village of Fonda			Local Stakeholders								
Scott Sprague	Village of Fonda		Alternative for Mayor Peeler	Local Stakeholders								
Jd Downing	Town of Glen		Land Use/ Community Planner	Local Stakeholders								
Timothy Reilly	Town of Glen		Emergency Manager	Local Stakeholders	X							
William Beddig	Town of Glen		Public Works Director / City Engineer	Local Stakeholders								
Thomas DiCaprio	Town of Glen		Building Code Official	Local Stakeholders								
Timothy Reilly	Town of Glen		Fiscal/Budget Officer	Local Stakeholders								
Russell Kelly	Town of Glen		Elected Officials	Local Stakeholders								
Rosalie Farina	Town of Glen		Other 1: Council Member	Local Stakeholders								
Ronald Crewell	Town of Glen		Other 2:	Local Stakeholders								
Susan Whiteman	Town of Glen		Other 3:	Local Stakeholders								
Patrick Clear	Town of Mohawk		Land Use/ Community Planner	Local Stakeholders	X							
Jeff Kaczor	Town of Mohawk		Emergency Manager	Local Stakeholders								
Bill Holvig	Town of Mohawk		Floodplain Manager/ Floodplain Administrator	Local Stakeholders								
Bill Holvig	Town of Mohawk		Public Works Director / City Engineer	Local Stakeholders								
Stan Waddle	Town of Mohawk		Building Code Official	Local Stakeholders								
Janet DePalma	Town of Mohawk		Fiscal/Budget Officer	Local Stakeholders								

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Janet DePalma	Town of Mohawk		Manager/Administrator	Local Stakeholders								
Tony Bruno (councilman)	Town of Mohawk		Elected Officials	Local Stakeholders								
Gerry Murray (councilman)	Town of Mohawk		Elected Officials	Local Stakeholders								
Matt Paton (councilman)	Town of Mohawk		Elected Officials	Local Stakeholders								
Debbie Parslow(councilperson)	Town of Mohawk		Elected Officials	Local Stakeholders								
Edward Watt	Village of Nelliston		Land Use/ Community Planner	Local Stakeholders								
John Mack	Village of Nelliston		Emergency Manager	Local Stakeholders								
N/A	Village of Nelliston		Floodplain Manager/ Floodplain Administrator	Local Stakeholders								
John Mack	Village of Nelliston		Public Works Director / City Engineer	Local Stakeholders								
Cliff Dorrough	Village of Nelliston		Building Code Official	Local Stakeholders								
Edward Watt	Village of Nelliston		Fiscal/Budget Officer	Local Stakeholders								
Debra Gros	Village of Nelliston		Manager/Administrator	Local Stakeholders								
Debra Gros, Niel Yerdon	Village of Nelliston		Elected Officials	Local Stakeholders								
Edward Watt	Village of Nelliston		Other 1: Deputy OEM Coordinator	Local Stakeholders								
Debra Gros	Village of Nelliston		Other 2:	Local Stakeholders								
Lisa Grimm Hoffman	Village of Nelliston		Other 3:	Local Stakeholders								
Jayna Cool	St. Johnsville		Clerk/Treasurer	Local Stakeholders								
Shannon Countryman	St. Johnsville		Emergency Manager	Local Stakeholders								
Clifton Dorrough	St. Johnsville		Floodplain Manager/Floodplain Administrator and Building Code Official	Local Stakeholders								
Jarrod Walrath	St. Johnsville		Public Works Director/City Engineer	Local Stakeholders								
Art Dockerty	St. Johnsville		Manager/Administrator and Elected Officials	Local Stakeholders								
Steve Elwood	St. Johnsville		Elected Officials	Local Stakeholders								
Kathy Buckley	St. Johnsville		Elected Officials	Local Stakeholders								
James Castrucci	St. Johnsville		Elected Officials	Local Stakeholders								
Rick Sager	St. Johnsville		OEM Coordinator	Local Stakeholders								
Jeff Kaczor	St. Johnsville		other	Local Stakeholders								
Billy Vicciarelli	Village of St. Johnsville			Local Stakeholders			X					
Lu Quackenbush	Town of Root			Local Stakeholders			X					
Adam	Town of Amsterdam		Town Engineer	Local Stakeholders			X					
Robin Ricci	Village of Hagaman			Local Stakeholders			X					
Bob Dolhanyk				Local Stakeholders	X							
Benny				Local Stakeholders	X							
Nancy Knudsen				Local Stakeholders	X							
David				Local Stakeholders	X							
Tammy Pelayes				Local Stakeholders	X							

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Andrea Hitchener	Village of Canajoharie			Local Stakeholders								
Mayor				Local Stakeholders								
Karl				Local Stakeholders								
Other				Local Stakeholders								
Other				Local Stakeholders								
Other				Local Stakeholders								
Chris D.				Local Stakeholders	X							
Kenneth Adamczyk	Fulton County		Economic Development Specialist	Regional Stakeholders								
Ray Gillen	Schenectady County		Commissioner Economic Development & Planning	Regional Stakeholders								
Zachary Thompson	Schoharie County		Planner	Regional Stakeholders								
Jody Zakrevsky	Otsego County		CEO	Regional Stakeholders								
John Kent Jr.	Herkimer County		Program Director	Regional Stakeholders								
Tom Porter	Kaniatsiohareke Mohawk Community	Kaniatsiohareke Mohawk Community		Regional Stakeholders								
Paul Gorgen	Kaniatsiohareke Mohawk Community		Kaniatsiohareke Board Member	Regional Stakeholders								
Greg Truckenmiller (President)	Johnstown NY	Fulton Montgomery Community College		Regional Stakeholders								
Sally Hoffman (Director of Nursing Services)	St. Johnsville	St. J Nursing Home		Regional Stakeholders								
Roxanne Barrett	Palatine Bridge	Palatine Nursing Home		Regional Stakeholders								
Shelley Peruzzi	Canajoharie	Arkell Senior Center		Regional Stakeholders								
Jennifer Saunders (CEO)	Fultonville	Liberty ARC		Regional Stakeholders								
Jessica Edwards	Amsterdam	Capstone Center		Regional Stakeholders								
Elizabeth Stocker	Amsterdam	Edward L. Wilkinson		Regional Stakeholders								
Lori Tambasco	Amsterdam	River Ridge Living Center		Regional Stakeholders								
Other	Amsterdam	Hillcrest Spring Assisted Living		Regional Stakeholders								
Pastor David Bowley	Canajoharie	Faith Hope and Love Church		Regional Stakeholders								
Pastor Philip Bishop	Amsterdam	Freedom Life Baptist Church		Regional Stakeholders								
Janice Dillenbeck	Canajoharie	Canjo Youth Center		Regional Stakeholders								
Mark Kelly	Sprakers	Faith Bible		Regional Stakeholders								
Pastor Josh Fetterhoff	Sprakers	Christian Church of Rural Grove		Regional Stakeholders								
Jeffrey Methven MBA	Amsterdam	St. Marys		Regional Stakeholders								
Tommy Ibrahim MD, MHA	Canajoharie	Bassett Healthcare		Regional Stakeholders								
Thomas Pasquarelli	Amsterdam	GAVAC - Greater Amsterdam Volunteer Ambulance Corps, Inc.		Regional Stakeholders								
Jerry Golub	Palatine Bridge, Amsterdam	Price Chopper		Regional Stakeholders								
Mike Vail	Amsterdam	Hannaford		Regional Stakeholders								
Other	Amsterdam	Walmart		Regional Stakeholders								
Nicholas Pace	Amsterdam	Target		Regional Stakeholders								

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Other	Palatine Bridge, Amsterdam	Walgreens		Regional Stakeholders								
Other	Amsterdam	CVS		Regional Stakeholders								
David Warner	St. Johnsville	Kinney Drugs		Regional Stakeholders								
Carl Gray	Fort Plain	Curtis Lumber		Regional Stakeholders								
Diane Burkdorf	St. Johnsville	C H Burkdorf and Son Inc		Regional Stakeholders								
Ashley Miller	Amsterdam	Lowes		Regional Stakeholders								
Carm Carbone	Amsterdam	Home Depot		Regional Stakeholders								
Other	throughout county	National Grid		Regional Stakeholders								
Gregory Sandfort	Palatine Bridge	Tractor Supply		Regional Stakeholders								
Scott Miller	Fultonville	United Ag & Turf		Regional Stakeholders								
Angelo Giovanni	Palatine Bridge	Hatchet Hardware of Palatine Bridge		Regional Stakeholders								
Chris Przestrzelski	Fort Plain	Green Pines Septic & Excavation		Regional Stakeholders								
David Warrington		FEMA Region 2 External Affairs	Administrator	State/Fed								
Elizabeth O'Reilly		New York State Division of Homland Security and Emergency Services (NYS DHSES)	Planning Manager, Hazard Mitigation	State/Fed	X		X					
Kevin Clapp		NYS DHSES	Supervisor, Hazard Mitigation Planning	State/Fed	X		X					
Corrina Cavallo		NYS DHSES	Mitigation Planning	State/Fed								
Marlene White		NYS DHSES	State Officer	State/Fed								
Resilient NY Program		New York State Department of Environmental Conservation	Division of Water	State/Fed								
Michael Tarasoff		DHSES		State/Fed			X					
Brandee Nelson		Tighe & Bond	Consulting Team		X	X	X	X	X			
Gabrielle Belfit		Tighe & Bond	Consulting Team		X	X	X	X	X			
Sharon Rooney		Tighe & Bond	Consulting Team		X	X		X	X			
Alexis Freudenberg		Tighe & Bond	Consulting Team									
Arica McCarthy		Tighe & Bond	Consulting Team									
Ryan Morrison		Tighe & Bond	Consulting Team		X							

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Engineers | Environmental Specialists

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MONTGOMERY COUNTY MULTI-JURISDICTIONAL ALL-HAZARD MITIGATION PLAN 5-YEAR UPDATE

Brandee Nelson, PE, LEED AP
Sharon Rooney, AICP, RLA
Gabrielle Belfit, CFM

Local Jurisdictional Kickoff Meeting
December 7, 2022

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AGENDA

- **Introductions**
- **Hazard Mitigation 5-year Update Process**
  - FEMA Guidance
  - Changes to 2022 Plan
- **Multi-Hazard Risk Assessment**
- **Community Asset Inventory**
  - GIS Demonstration
- **Vulnerability Assessment**
- **Mitigation Strategy**
- **Plan Review and Adoption**
- **Public Outreach**
- **Work Assignments**

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HAZARD MITIGATION PLANNING TEAM

- Montgomery County
  - Department of Economic Development and Planning
  - Department of Public Works
  - County Executive's Office
- Municipal Jurisdictions
  - Local Coordinators/Leads
  - Local Stakeholders
- Regional Stakeholders
- Tighe & Bond, Inc.

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WHY PREPARE A HAZARD MITIGATION PLAN?

- Required to qualify for Hazard Mitigation Grants per Disaster Mitigation Act of 2000, 44 CRF Part 201.6
- Documents historic impacts from natural hazards and community vulnerability
- Educates the public on the risk of natural hazards to people, property damage, and public health, and the benefits of mitigating hazards so the community is better prepared and can recover more quickly
- Prioritizes mitigation projects to meet multiple community goals
- May improve scoring for Community Rating System, results in lower flood insurance premiums
- Improves chances for obtaining other State and Federal Grants

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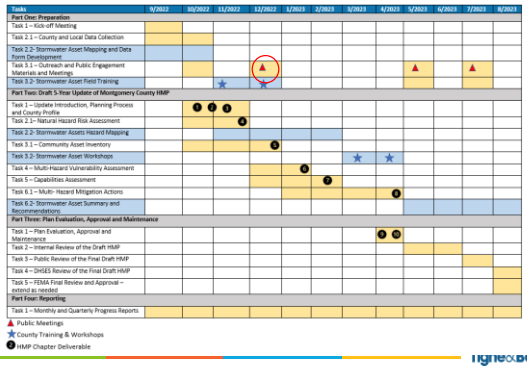
SCOPE OF WORK & SCHEDULE



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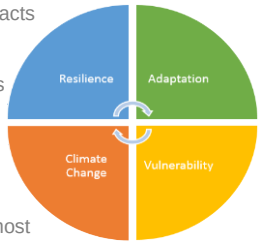
HAZARD MITIGATION PLANNING PROCESS

1) Define potential risk due to natural hazards including impacts of climate change
2) Identify key community assets and vulnerability to risk
3) Define mitigation projects to improve resiliency
4) Prioritize projects for areas most at risk



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MULTI-HAZARD MITIGATION PLAN GUIDANCE

- Disaster Mitigation Act of 2000, 44 CRF Part 201.6
- New York State Hazard Mitigation Plan 2019
- FEMA Local Mitigation Planning Handbook, March 2013
- FEMA Local Mitigation Planning Policy Guide, April 19, 22/23
  1. Document the Planning Process
  2. Document Methodologies Used
  3. Involve Larger Community
  4. Address FEMA concerns from 2016

FEMA

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2022 PLAN CHANGES

- Evaluate natural hazard risk consistent with 2019 New York State Hazard Mitigation Plan
- Expand community outreach to target vulnerable populations
- Incorporates climate change
- Evaluates impacts on community assets
  - ❑ Environmental
  - ❑ Societal
  - ❑ Economic
  - ❑ Built infrastructure
- Geographically based mapping and analysis

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NATURAL HAZARD RISK ASSESSMENT

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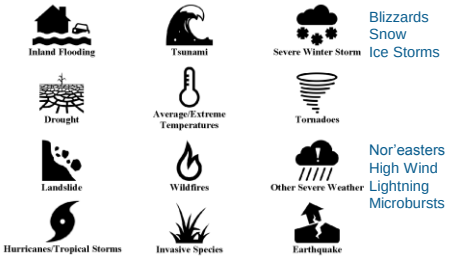
WHAT ARE NATURAL HAZARDS?



Blizzards
Snow
Ice Storms

Nor'easters
High Wind
Lightning
Microbursts

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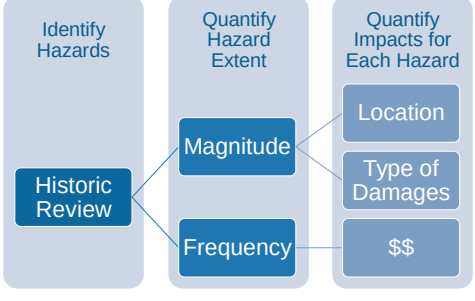
MULTI-HAZARD RISK ASSESSMENT



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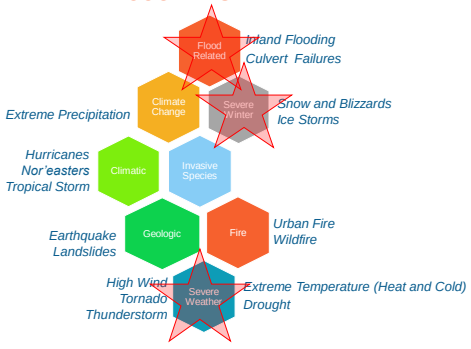
TOP NATURAL HAZARD RISKS FOR MONTGOMERY COUNTY SAMPLE



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HISTORICAL RISK:

INLAND FLOODING ($11M)

HIGH WIND, TORNADOES & LIGHTNING ($2.1M)

SEVERE WINTER WEATHER - SNOW & ICE ($308K)

HISTORICAL FLOOD EVENTS

- 4/1987 FEMA DR-792
- 1/1996 FEMA DR-1095
- 7/2006 FEMA DR-1560
- 8/2011 FEMA DR-4020- "Tropical Storm Irene"
- 6-7/2013 FEMA DR-4129
  Displaced more than 1,000 residents of Mohawk Valley
- 8/2014 Flash Flooding caused road closures and WWTP flooding
- 8/2017 "Remnants of Hurricane Harvey"
- 9/2021 "Remnants of Hurricane Ida"
- 10/2021 "Remnants of Tropical Storm Fred"
- 4/2022 Road closures, culvert damage and mudslides

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MONTGOMERY COUNTY TOP NATURAL HAZARDS

INLAND FLOODING

SEVERE WINTER STORMS- SNOW & ICE

OTHER SEVERE WEATHER- HIGH WINDS

DROUGHT & EXTREME TEMPERATURE

+ **CLIMATE CHANGE** =

AMPLIFIED RISKS

- Community and regional infrastructure
- Local and regional economies
- Public Health
- Natural resources and our environment

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IMPACTS OF CHANGING PRECIPITATION

- Episodic droughts
- Public drinking water supply
- Flora and fauna
- Agriculture

Source : New York Climate Change Science Clearinghouse
https://www.nyclimatescience.org/map

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IMPACTS OF RISING TEMPERATURES

- Heat and public health
- Agriculture and livestock
- Aquatic and terrestrial habitat
- Energy systems and infrastructure
- Drought and wildfires

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EXTREME WEATHER & IMPACTS

- Public safety
- Economy
- Property and infrastructure
- Natural resources

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LOCAL INPUT NEEDED ON NATURAL HAZARDS!

WE WANT TO HEAR FROM YOU

Survey link: https://www.surveymonkey.com/r/FJ7LZ93

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COMMUNITY ASSET INVENTORY

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COMMUNITY ASSET INVENTORY

- People
- Economy
- Built Environment
- Natural Environment

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COMMUNITY ASSET CATEGORIES

FEMA COMMUNITY ASSET CATEGORIES	CHARACTERISTICS OF COMMUNITY ASSETS
People- Societal Assets	• Areas of greater population density • Population with unique vulnerabilities • Slower respond and recover during a disaster.
Built Environment- Infrastructural Assets	• Critical facilities to recover from emergencies • Infrastructure for public health and safety, economic viability, or for critical facilities to operate.
Economic Assets	• Major employers • Primary economic sectors and commercial centers • Loss or inoperability would have severe impact on the community and ability to recover from a disaster.
Environmental Assets	• Reduce magnitude of hazard impact and increase resiliency. • Protection of areas important to community objectives, such as the protection of sensitive habitat, provide socio-economic benefits, etc.

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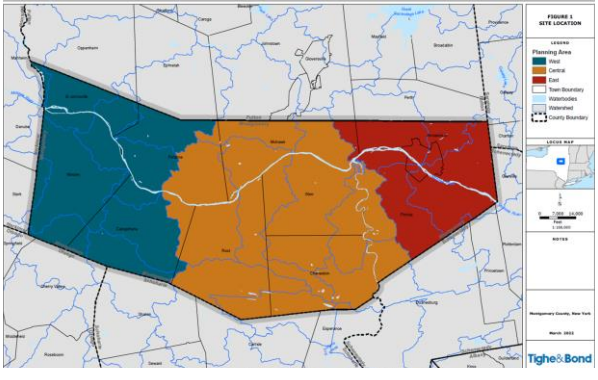
GEOGRAPHIC PLANNING AREAS



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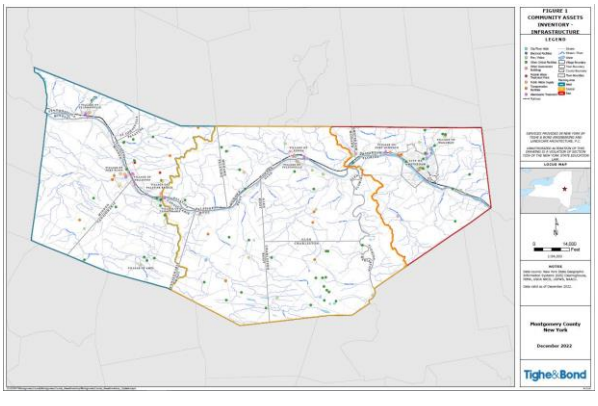

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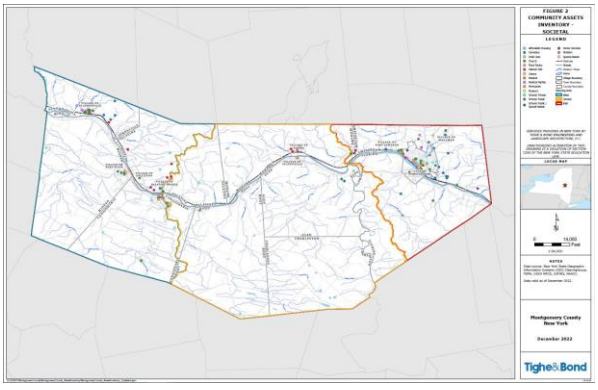

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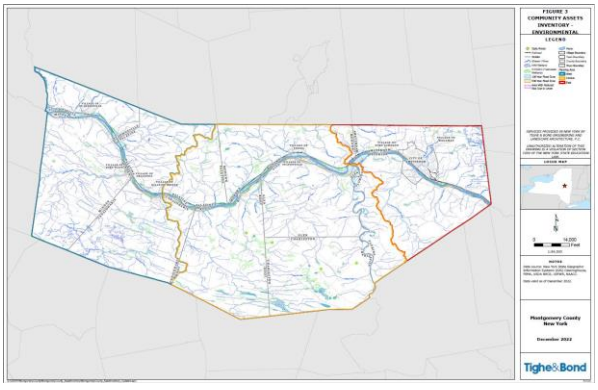

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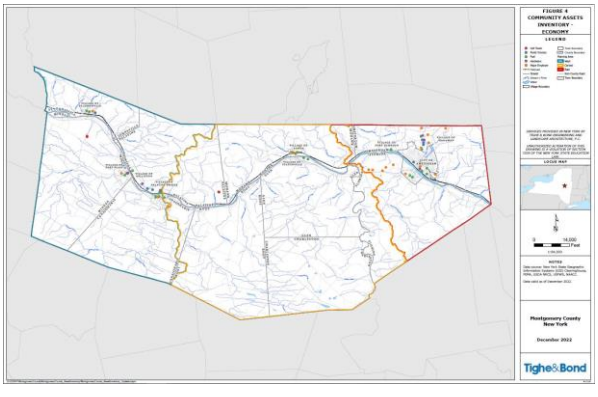

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GIS DEMONSTRATION

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VULNERABILITY ASSESSMENT

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VULNERABILITY ASSESSMENT

- Hurricanes
- Earthquakes
- Flooding
  - Exposure Assessment for Building Flood Risk
  - Vulnerability of Community Assets
  - Vulnerability of Future Development

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Update Risk Assessment Maps

- Maps must be large enough to visualize impacts for property owner

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MITIGATION STRATEGY

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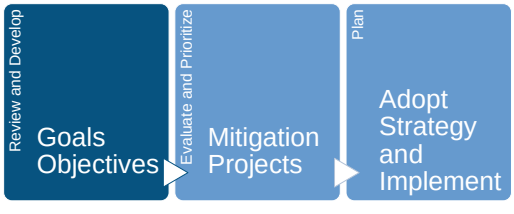
MITIGATION STRATEGY



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TYPES OF MITIGATION ACTIONS

1. Prevention
2. Property Protection
3. Public Education and Awareness
4. Natural Resource Protection and Green Infrastructure (nature-based solutions)
5. Structural Projects
6. Emergency Services Protection

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MITIGATION STRATEGY

- Review Mitigation Goals and Objectives
- Review previous mitigation actions and changes in priorities
- Identify new mitigation actions
- Identify barriers or obstacles to implementation
- Complete cost–benefit for mitigation projects and prioritize

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IMPLEMENTATION STRATEGY

Evaluate Capacity to Implement

Adopt Plan

Implement Plan

Maintain Plan

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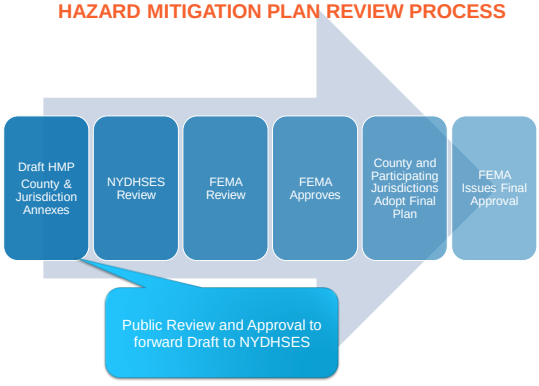
PLAN REVIEW AND ADOPTION

HAZARD MITIGATION PLAN REVIEW PROCESS



PUBLIC OUTREACH

PUBLIC OUTREACH STRATEGY

- **Each jurisdiction must participate**
  - Letter of participation signed
  - Lead and Second identified
- **Jurisdiction stakeholder identification**
  - Worksheet includes information on suggested outreach methods and jurisdiction-specific tabs that allow each community to fill out their contact information and stakeholder list
- **Methods of Outreach**
  - Press release customizable for each community
  - Fact sheet flyer on the HMP update
  - Survey on Natural Hazard Risk
  - PowerPoint presentation customizable for each community

JURISDICTIONS WORK ASSIGNMENTS

- 1) Create contact List for Participating Jurisdictions - expand to include whole community - by December 31, 2022
- 2) Customize and distribute Press Releases and Fact Sheets - January 2023
- 3) Take Natural Hazards Survey online - January 2023
- 4) Update Local Community Assets to expand categories - January 2023

Contacts

- **Alex Kuttesch, AICP, Senior Planner/GIS, Montgomery County Business Development Center**
  - Phone: 518-853-8202
  - Email: AKuttesch@co.montgomery.ny.us
- **Kenneth Rose, CEO Director, Montgomery County Business Development Center**
  - Phone: 518-853-8662
  - Email: KRose@co.montgomery.ny.us
- **Jeff Kaczor, Director, Montgomery County Emergency Services**
  - Phone: 518-853-4011
  - Email: jkaczor@emo.montgomery.ny.us

QUESTIONS?

MONTGOMERY COUNTY HAZARD MITITGATION RISK & VULNERABILITY ASSESSMENT

Public Meeting

March 28, 2023 4-6 PM

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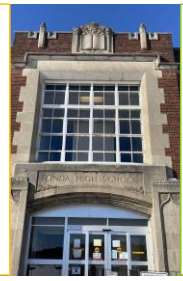
MONTGOMERY COUNTY HAZARD MITIGATION PLAN CORE TEAM AND LOCAL PLANNING GROUP JURISDICTIONS

Core Team from Montgomery County

- Kenneth Rose, Director Business Development Center
- Alex Kuttesch, Senior Planner
- Stephanie Battisti, Economic Development
- Jeff Kaczor, Emergency Management
- Eric Mead, DPW



Participating Jurisdictions (17)*

- Ames (V)
- Amsterdam (C & V)
- Canajoharie (T&V)
- Charleston (T)
- Florida (T)
- Fonda (V)
- Fort Plain (V)
- Fultonville (V)
- Glen (T)
- Minden (T)
- Mohawk (T)
- Nelliston (V)
- Palatine Bridge (V)
- St. Johnsville (T & V)

* Three communities, Palatine, Root, and Hagaman have opted to not participate in the Montgomery Multi-Jurisdictional HMP.

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WHY PREPARE A HAZARD MITIGATION PLAN?

- Required to qualify for Hazard Mitigation Grants per Disaster Mitigation Act of 2000, 44 CRF Part 201.6
- Documents historic impacts from natural hazards and community vulnerability
- Educates the public on the risk of natural hazards to people, property damage, and public health, and the benefits of mitigating hazards so the community is better prepared and can recover more quickly
- Prioritizes mitigation projects to meet multiple community goals
- May improve scoring for Community Rating System, results in lower flood insurance premiums
- Improves chances for obtaining other State and Federal Grants

FEMA

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WHY ARE WE HERE?

Help Montgomery County Build Resilience and Preparedness:

- Build on the County and local existing emergency management capabilities
- Planning for more frequent and intense weather events
- Improve pre-event planning, response & recovery, and long-term actions
- Maintain functions, protect residents and businesses, and be ready for future storm events and a changing climate

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MULTI-HAZARD MITIGATION PLAN GUIDANCE

- Disaster Mitigation Act of 2000, 44 CRF Part 201.6
- New York State Hazard Mitigation Plan 2019
- FEMA Local Mitigation Planning Handbook, March 2013
- FEMA Local Mitigation Planning Policy Guide, April 19, 22/23
  1. Document the Planning Process
  2. Document Methodologies Used
  3. Incorporate Climate Change
  4. Involve Larger Community
  5. Address FEMA concerns from 2016

FEMA

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PURPOSE OF PUBLIC MEETING

- **Introduce the Hazard Mitigation Plan Risk Assessment Summary**
- **Discuss next phase of the Project**
- **Provide Q&A opportunity**
- **Comply with state and federal public meeting requirements**

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CLIMATE CHANGE

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NEW YORK'S CHANGING CLIMATE

Changing Weather

- Higher Temperatures
- Shorter Winters
- More frequent and intense storms
- Droughts

Amplifies existing risks

- Community and regional infrastructure
- Local and regional economies
- Public Health
- Natural resources and our environment

Goal for Building Resilience to a Changing Climate:

Protect life, property, natural resources, and the economy

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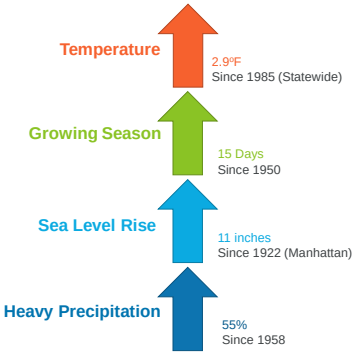
NEW YORK OBSERVED CLIMATE CHANGES



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NEW YORK STATE CLIMATE PROJECTIONS

- By the end of century

Rising Temperatures

Changes in Precipitation

Extreme Weather

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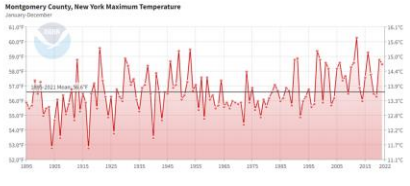

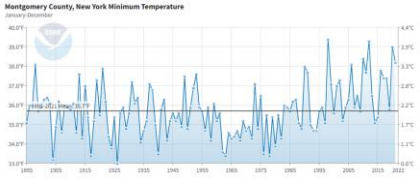

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CHANGES IN PRECIPITATION

Season	Baseline (inches)	Scenario	2030s	2050s	2070s	2090s
Annual	47.09	High	+0.47	+1.82	+2.62	+3.95
		Low	+0.21	+0.86	+1.65	+1.5
Fall	12.20	High	-0.28	+0.14	-0.37	+0.02
		Low	-0.41	-0.12	+0.05	-0.5
Spring	11.78	High	+0.53	+0.95	+1.62	+1.85
		Low	+0.48	+0.73	+0.83	+0.89
Summer	12.72	High	-0.5	-0.61	-0.52	-0.42
		Low	-0.6	-0.56	-0.56	-0.42
Winter	10.40	High	+0.72	+1.33	+1.89	+2.5
		Low	+0.74	+0.81	+1.33	+1.54

IMPACTS OF CHANGING PRECIPITATION

- Episodic droughts
- Flora and fauna
- Drinking water supply
- Culvert sizing

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EXTREME WEATHER & IMPACTS

Blizzards
- 86 notable events since 1950 and more that 5 in NY since 2011

Nor'easters and Hurricanes
- Upward trend since the 1970s

Tornadoes
- 10 events since 1950. Most recent event was 2020. $25M damages

Thunderstorms
- 147 events since 1950. $2M damages

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IMPACTS OF CLIMATE CHANGE ON MONTGOMERY COUNTY

Increasing Temperatures
- Heat-related illnesses
- Health of plants, animals, and ecosystems
- Reduced crop productions
- Larger demand on energy systems
- Stress on infrastructure

Heavy Precipitation
- Increased total rainfall
- Increase risk of flooding
- Increase damage to property and infrastructure
- Changes to rainfall and snowfall patterns

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NATURAL HAZARD RISK ASSESSMENT

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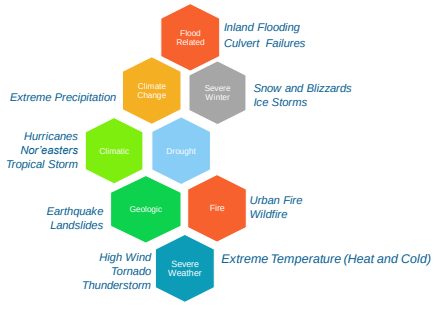
NATURAL HAZARD RISKS FOR MONTGOMERY COUNTY



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HISTORICAL NATURAL HAZARD EVENTS- AREAS OF LOCAL FLOODING

- Mohawk River and East Canada Creek- St. Johnsville
- Northern shore of Mohawk River-St. Johnsville Village
- Zimmerman Creek- St. Johnsville Village
- Ostsquago Creek- Minden
- Confluence of Otsquago Creek and Mohawk River- Fort Plain
- Southern Bank of Mohawk River- -Canajoharie Village
- Southern Bank of Mohawk River across from Fonda- Fultonville
- Brimstone Creek- Ames
- Confluence of Mohawk northern bank and Cayadutta Creek- Fonda
- Confluence of Kayaderosseras Creek and Mohawk River- Fort Johnson
- Schoharie Creek- Burtonville
- Canajoharie Creek- Canajoharie
- North Chuctanunda Creek- Town of Amsterdam
- Knauderack Creek and Mohawk River- Kanatsiohareke Mohawk Community
- Broadway Creek- Fonda

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NATURAL HAZARD RISK INDEX

Type of Natural Hazard	History of Occurrence in Montgomery County	Hazard Probability	Hazard Frequency	Geographic Extent	Severity of Impact	Hazard Risk Ranking
Hydrological Hazards						
Flood Related						
• Heavy Rain	Yes	4	3	3	2	1
• Ice Jams	Yes	4	3	3	2	1
• Beavers	Yes	2	1	1	1	5
• Snow Melt	Yes	3	3	2	2	2
• Dam Failure	Yes	2	2	3	3	3
• Flash Flooding	Yes	4	3	2	3	1
Drought	Yes	2	2	3	2	3
Atmospheric Hazards						
Strong Winds	Yes	4	3	3	2	1
Hurricanes/Tropical Storms	Yes	3	2	3	3	2
Lightning	Yes	4	3	3	2	1
Snowstorm	Yes	4	3	3	2	1
Ice Storms	Yes	4	3	3	3	1
Cold Wave	Yes	4	3	3	2	1
Heat Wave	Yes	4	3	3	2	1
Hail	Yes	3	2	3	1	3
Tornadoes	Yes	3	3	1	2	3
Geological Hazards						
Earthquake	Yes	2	1	1	1	5
Landslide	Yes	2	1	1	2	4
Other Hazards						
Wildfires	Yes	3	2	1	3	3

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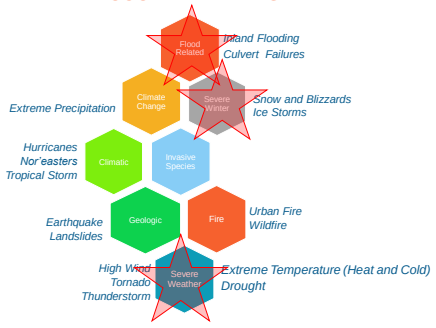
TOP NATURAL HAZARD RISKS FOR MONTGOMERY COUNTY RANKING



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MONTGOMERY COUNTY'S TOP NATURAL HAZARDS

SEVERE WINTER STORMS

OTHER SEVERE WEATHER

INLAND FLOODING

DROUGHT & EXTREME TEMPERATURE

\+ CLIMATE CHANGE =

AMPLIFIED RISKS

- Community and regional infrastructure
- Local and regional economies
- Public Health
- Natural resources and our environment

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SURVEY RESULTS ON NATURAL HAZARDS!

70 replies to survey

Survey link: https://www.surveymonkey.com/r/FJ7LZ93

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WORD CLOUDS FROM SURVEY

Question 12: Recent specific natural hazard events

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COMMUNITY ASSET INVENTORY

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MONTGOMERY COUNTY AND PARTICIPATING JURISDICTION ASSET INVENTORY

- **Identifying community assets allows the County and participating jurisdictions to investigate how they will be impacted by natural hazards**
- **FEMA defines a community asset as anything that is important to the character and function of a community.**
- **Community assets include these categories: Societal, Economy, Built Environment (Infrastructure including critical facilities), and Natural Environment.**

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COMMUNITY ASSET CATEGORIES

FEMA COMMUNITY ASSET CATEGORIES	CRITICAL SECTORS	CHARACTERISTICS OF COMMUNITY ASSETS
People- Societal Assets	Schools, Vulnerable Populations, Cultural and Historical Facilities	Areas of greater population density, or population with unique vulnerabilities or less able to respond and recover during a disaster.
Built Environment-Infrastructural Assets	Critical Municipal Facilities, Water, Wastewater, Energy, Stormwater, Transportation	Critical facilities necessary for a community's response to and recovery from emergencies, infrastructure critical for public health and safety, economic viability, or for critical facilities to operate.
Economic Assets	Seaport, Business District, Food and Medical Supplies, Building Supplies	Major employers, primary economic sectors and commercial centers where loss or inoperability would have severe impact on the community and ability to recover from a disaster.
Environmental Assets	Natural Resources	Areas that provide protective function to reduce magnitude of hazard impact and increase resiliency. Areas of sensitive habitat that are vulnerable to hazard events, protection of areas that are important to community objectives, such as the protection of sensitive habitat, provide socio-economic benefits, etc.

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SURVEY RESULTS ON STRENGTHS & VULNERABLITIES

70 replies to survey

Survey link: https://www.surveymonkey.com/r/FJ7LZ93

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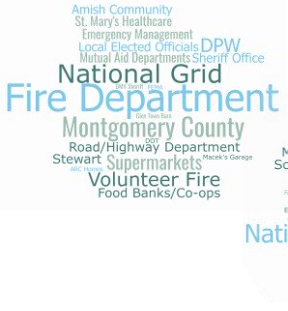
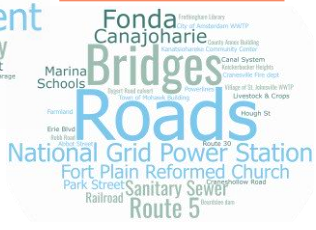
WORD CLOUDS FROM SURVEY

Question 7: Community asset assistance during storm events



Question 8: Impacted Infrastructure caused by storm events



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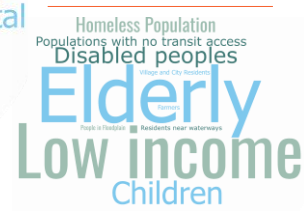
WORD CLOUDS FROM SURVEY

Question 9: Necessary Community Assets

Question 10: Vulnerable Populations



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WORD CLOUDS FROM SURVEY

Question 11: Valued community natural environments

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BUILT ENVIRONMENT

- Dams & Culverts
- Airports/ Helipads
- Water & Wastewater facilities
- Fire and Police facilities
- Highway & DPW facilities
- Government offices (County & Local)
- Rail & Bus service
- Power grid
- Cell Towers and Communications Utilities
- Medical Facilities (listed under societal)
- Schools/town shelters (listed under societal)

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SOCIETAL

- Affordable Housing
- Churches
- Emergency shelters
- Food Pantry
- Historical Places
- Nursing Homes/ Senior Housing
- Cemetery/ Mortuary
- Childcare
- Senior Center
- Mobile Home Parks
- Veterans Services
- Schools
- Special Needs ARC
- Town Library
- Medical Facilities
- Veterinary clinic

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NATURAL ENVIRONMENT

- Conservation lands and open space (e.g., State Forest, open space)
- Schoharie River Center & Nature Preserve
- Mohawk Hudson Land Conservancy- Schoharie Creek Preserve
- George Landis Arboretum
- Farms
- Trails (Mohawk River Trail)
- Major Wetlands and Waterbodies
- Habitat (including vernal pools)

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ECONOMIC

- Grocery
- Dry Goods
- Oil Delivery
- Gas Stations
- Hardware Store
- Industrial Park (Lomar Park)
- Major Employers (24)
- Pharmacies (none listed)
- Restaurants
- Winery & Brewery
- Tree Removal Services (none listed)
- Diversified Agriculture
- Emergency Equipment Supply (tents and portapotties)

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TOUR OF GIS COMMUNITY ASSET TOOL

- https://tighebond.maps.arcgis.com/apps/dashboards/0ed356381c0a4f8c8f66c5802f9ff93e

- Review Layers and Asset Categories
- Review Dashboard Tools
- Vulnerability Analysis for Flooding, Critical Facilities, EJ Areas
- Submit feedback as needed

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VULNERABILITY ASSESSMENT

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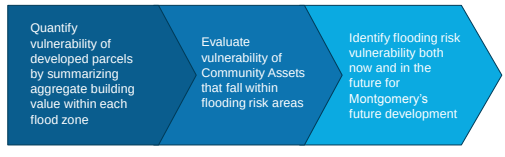
HMP VULNERABILITY ASSESSMENT

- **Identify locations that are at risk from flooding inundation based on current and historic flooding**
  - Use FEMA 100-year and 500-year floodplain



MONTGOMERY COUNTY NY

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SUMMARY OF VULNERABILITY RESULTS

- **100-Year Flood Zone**
  - 51 identified Community Assets are within 100-year flood
  - 10 are critical
    - *Village of Fonda*
    - *Village of Canajoharie*
    - *Village of Fort Plain*
- **500-Year Flood Zone**
  - 16 identified Community Assets are within 500-year flood
  - 7 are critical
    - *Village of Fort Plain*
    - *Village of Canajoharie*
    - *Village of Fort Johnson*

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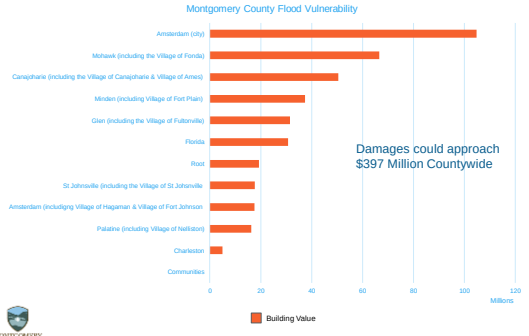
MONTGOMERY COUNTY FLOOD VULNERABILITY



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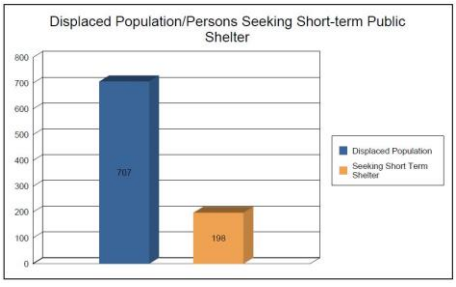
VULNERABILITY RESULTS – SHELTER SUMMARY



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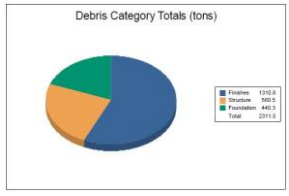
VULNERABILITY RESULTS – DEBRIS SUMMARY

	Finishes	Structures	Foundations	Total
New York				
Montgomery	1,311	560	440	2,312
Total	1,311	560	440	2,312
Scenario Total	1,311	560	440	2,312



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HMP VULNERABILITY ASSESSMENT

- **Identify repetitive loss structures from the National Flood Insurance Program**

Montgomery County has 199 NFIP policies in force over 18 communities in Montgomery County ($39M value)

As of 2022 there are 40 repetitive loss properties in 11 communities

Since 1978, 89 repetitive loss claims have been paid for a total of $3.5 Million

For all NFIP policies, a total of 282 claims were paid totaling more than $8.7 Million

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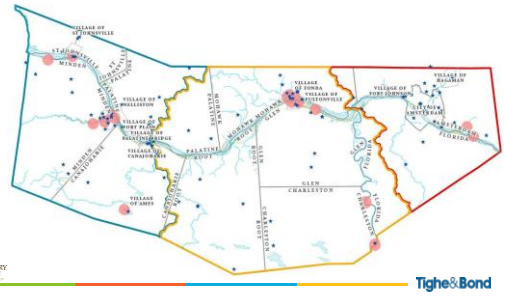
HMP VULNERABILITY ASSESSMENT

- **Most repetitive losses**
  - *Village of Fonda / Minden (13)*
  - *Village of Fort Plain / Mohawk (15)*



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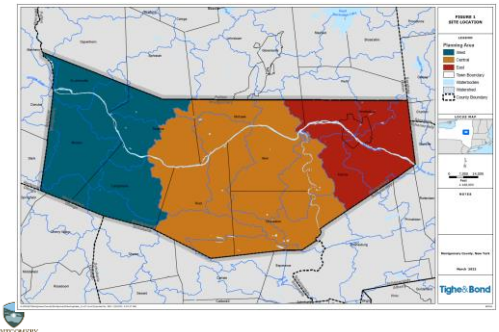
PLANNING AREAS



MITIGATION STRATEGY

STEPS TO COMPLETE MITIGATION STRATEGY

1. Review Goals
2. Update Capabilities Assessment
3. Develop Mitigation Actions

2022 MISSION STATEMENT

A resiliency vision for Montgomery County includes empowering residents, communities and County Leaders to make near, mid and long-term changes that will reduce future climate change impacts, protect its vital community assets, and adapt to changes already occurring. The mitigation actions included in the 2022 Hazard Mitigation Plan complement and support this resiliency vision.

CAPABILITIES ASSESSMENT

1. Review current reports, plans and policies related to Hazard Mitigation planning
2. Update staffing and technical capabilities to implement Hazard Mitigation actions
3. Review opportunities for funding mitigation actions
4. Review opportunities for local Public Education and Awareness
5. Make recommendations for improvements

MITIGATION ACTIONS

1. Review Prior Mitigation Actions and report on status
2. Develop New Mitigation Actions to address key vulnerabilities to current and future natural hazards
3. Prioritize Mitigation Strategies for action over the next 5-year planning period.

TYPES OF MITIGATION ACTIONS

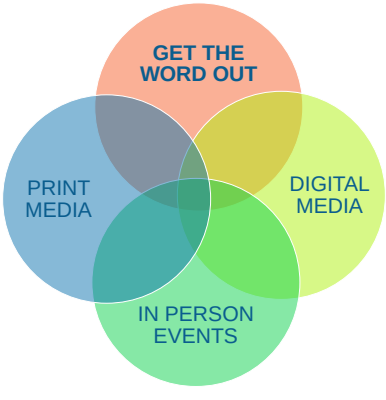
1. Prevention
2. Property Protection
3. Public Education and Awareness
4. Natural Resource Protection and Green Infrastructure
5. Structural Projects
6. Emergency Services Protection

MONTGOMERY COUNTY TOP MITIGATION ACTIONS FROM 2016

- **Prevention**
  - Update local zoning in floodplain, identify evacuation routes, emergency evacuation and safe-haven program for large livestock, code enforcement training, debris management plan
- **Natural Resource Protection**
  - Otsguago Creek and Mohawk River tributaries stream gauge system, Stream channel stabilization projects for Otsquago and Canajoharie Creek
- **Structural Projects**
  - DPW vehicle storage outside of floodplain, flood protection for St. Mary's hospital, Burtonsville Road Spur Bridge upgrade, phased culvert assessment
- **Emergency Services Protection**
  - Upgrade County emergency communications infrastructure, backup power for senior facilities, location for temporary housing for residents displaced by disasters

PUBLIC OUTREACH

- Local Leaders
- Emergency Response
- Public Works
- Neighboring Counties
- Red Cross
- Media
- Faith Leaders
- Social Services
- Elder Care
- Farm Owners
- Business Owners
- Education



OPEN DISCUSSION & QUESTIONS

Contact Information:

- **Sharon Rooney, AICP, Project Manager**
  - SJRooney@tighebond.com
  - 508.221.6667
- **Gabrielle Belfit, CFM, Senior Environmental Scientist**
  - GCBelfit@tighebond.com
  - 508.304.6362

MONTGOMERY COUNTY HAZARD MITIGATION PLAN
MITIGATION STRATEGY - GOALS AND ACTIONS

Montgomery County Public Workshop

September 19, 2023 5-8 PM

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MONTGOMERY COUNTY HAZARD MITIGATION PLAN
CORE TEAM AND LOCAL PLANNING GROUP JURISDICTIONS

Core Team Montgomery County

- Kenneth Rose, Director Business Development Center
- Alex Kuttesch, Senior Planner
- Stephanie Battisti, Economic Development
- Jeff Kaczor, Emergency Management
- Eric Mead, DPW

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MONTGOMERY COUNTY HAZARD MITIGATION PLAN
CORE TEAM AND LOCAL PLANNING GROUP JURISDICTIONS

Participating Jurisdictions* in Eastern Montgomery County

- City of Amsterdam
- Town of Amsterdam
- Town of Florida

*The Village of Hagaman has opted not to participate in the Montgomery County Multi-Jurisdictional HMP 2023 update.

Photo courtesy of AndyArthur.org

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MONTGOMERY COUNTY HAZARD MITIGATION PLAN
CORE TEAM AND LOCAL PLANNING GROUP JURISDICTIONS

Participating Jurisdictions in Western Montgomery County

- Town of Canajoharie
- Town of Minden
- Town of St. Johnsville
- Village of Ames
- Village of Fort Plain
- Village of Nelliston
- Village of Canajoharie
- Village of Palatine Bridge
- Village of St. Johnsville

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MONTGOMERY COUNTY HAZARD MITIGATION PLAN
CORE TEAM AND LOCAL PLANNING GROUP JURISDICTIONS

Participating Jurisdictions in Central Montgomery County

- Town of Charleston
- Town of Glen
- Town of Mohawk
- Village of Fonda
- Village of Fultonville

*The Town of Root has opted not to participate in the Montgomery County Multi-Jurisdictional HMP 2023 update.

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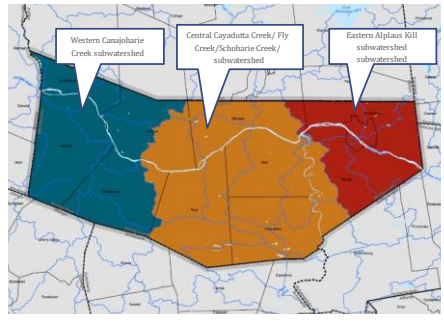
PLANNING AREAS*



* Subwatershed naming conventions based on USGS HUC 10

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PURPOSE OF PUBLIC MEETING

1. Learn about Montgomery County's Hazard Mitigation Strategy
2. Review Local Flooding Risks
3. Review Previous Local Mitigation Actions
4. Brainstorm New Actions for Jurisdictions

RECAP OF HMP PLANNING PROGRESS TO DATE

- Established County Core Team & Jurisdiction Planning Teams
- Included Additional Local Stakeholders
- Public Meeting: Understanding Impacts from Changing Climate
- Survey to Rate Natural Hazard Risk for Montgomery County
- Developed GIS tool to Identify Important Community Assets
- Survey Community Assets Vulnerabilities & Strengths
- Public Meeting: Vulnerability Risk Assessment
- Hazard Mitigation Plan Preparation

RECAP OF HMP PLANNING PROGRESS TO DATE

Section 1	Introduction
Section 2	Planning Process
Section 3	County Profile
Section 4	Natural Hazard Risk
Section 5	Community Asset Inventory
Section 6	Vulnerability Assessment
Section 7	Capabilities Assessment
Section 8	Mitigation Strategy
Section 9	Plan Evaluation and Maintenance
Section 10	Plan Adoption

RECAP FROM MARCH PUBLIC MEETING

NEW YORK'S CHANGING CLIMATE

Changing Weather

- Higher Temperatures
- Shorter Winters
- More frequent and intense storms
- Droughts

Amplifies existing risks

- Community and regional infrastructure
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Goal for Building Resilience to a Changing Climate:

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RECAP FROM MARCH PUBLIC MEETING

IMPACTS OF CLIMATE CHANGE ON MONTGOMERY COUNTY

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RECAP FROM MARCH PUBLIC MEETING

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Thunderstorms

- 147 events since 1950. $2M damages

SECTION 3
NATURAL HAZARD RISK ASSESSMENT

OVERVIEW

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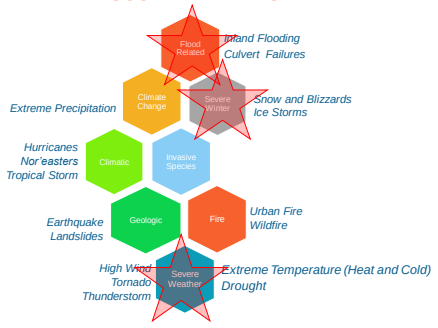
RECAP FROM MARCH PUBLIC MEETING

TOP NATURAL HAZARD RISKS FOR MONTGOMERY COUNTY RANKING



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RECAP FROM MARCH PUBLIC MEETING

NATURAL HAZARD RISK INDEX

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• Beavers	Yes	2	1	1	1	5
• Snow Melt	Yes	3	3	2	2	2
• Dam Failure	Yes	2	2	3	3	3
• Flash Flooding	Yes	4	3	2	3	1
Drought	Yes	2	2	3	2	3
Atmospheric Hazards						
Strong Winds	Yes	4	3	3	2	1
Hurricanes/Tropical Storms	Yes	3	2	3	3	2
Lightning	Yes	4	3	3	2	1
Snowstorm	Yes	4	3	3	2	1
Ice Storms	Yes	4	3	3	3	1
Cold Wave	Yes	4	3	3	2	1
Heat Wave	Yes	4	3	3	2	1
Hail	Yes	3	2	3	1	3
Tornadoes	Yes	3	3	1	2	3
Geological Hazards						
Earthquake	Yes	2	1	1	1	5
Landslide	Yes	2	1	1	2	4
Other Hazards						
Wildfires	Yes	3	2	1	3	3

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RECAP FROM MARCH PUBLIC MEETING

WORD CLOUDS FROM SURVEY

Question 12: Recent specific natural hazard events

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RECAP FROM MARCH PUBLIC MEETING

NATURAL HAZARD RISK INDEX

Type of Natural Hazard	History of Occurrence in Montgomery County	Hazard Probability	Hazard Frequency	Geographic Extent	Severity of Impact	Hazard Risk Ranking
Hydrological Hazards						
Flood Related						
• Heavy Rain	Yes	4	3	3	2	1
• Ice Jams	Yes	4	3	3	2	1
• Beavers	Yes	2	1	1	1	5
• Snow Melt	Yes	3	3	2	2	2
• Dam Failure	Yes	2	2	3	3	3
• Flash Flooding	Yes	4	3	2	3	1
Drought	Yes	2	2	3	2	3
Atmospheric Hazards						
Strong Winds	Yes	4	3	3	2	1
Hurricanes/Tropical Storms	Yes	3	2	3	3	2
Lightning	Yes	4	3	3	2	1
Snowstorm	Yes	4	3	3	2	1
Ice Storms	Yes	4	3	3	3	1
Cold Wave	Yes	4	3	3	2	1
Heat Wave	Yes	4	3	3	2	1
Hail	Yes	3	2	3	1	3
Tornadoes	Yes	3	3	1	2	3
Geological Hazards						
Earthquake	Yes	2	1	1	1	5
Landslide	Yes	2	1	1	2	4
Other Hazards						
Wildfires	Yes	3	2	1	3	3

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SECTION 4
COMMUNITY ASSET INVENTORY

OVERVIEW

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WHAT ARE COMMUNITY ASSETS?

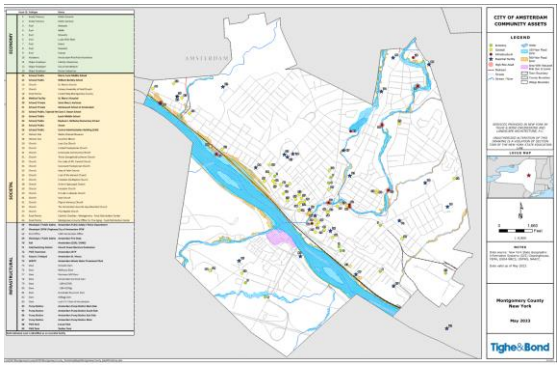
Built Environment: Critical facilities necessary for a community's response to and recovery from emergencies, infrastructure critical for public health and safety, economic viability, or for critical facilities to operate.

Economy: Major employers, primary economic sectors and commercial centers where loss or inoperability would have severe impact on the community and ability to recover from a disaster.

People: Areas of greater population density, or population with unique vulnerabilities or less able to respond and recover during a disaster.

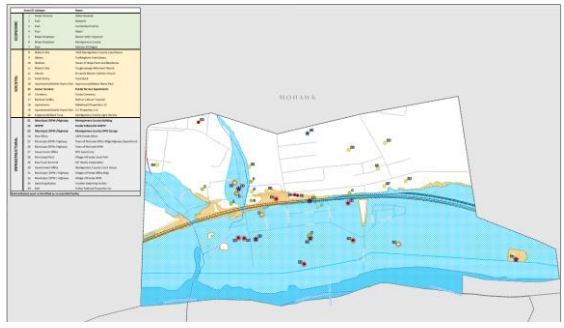
Natural Environment: Areas that provide protective function to reduce magnitude of hazard impact and increase resiliency. Areas of sensitive habitat that are vulnerable to hazard events, protection of areas that are important to community objectives, such as the protection of sensitive habitat, provide socio-economic benefits, etc.

GIS COMMUNITY ASSET TOOL



GIS COMMUNITY ASSET TOOL

GIS COMMUNITY ASSET TOOL



SURVEY RESULTS ON STRENGTHS & VULNERABLITIES

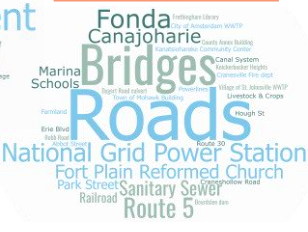
70 replies to survey

Survey link: https://www.surveymonkey.com/r/FJ7LZ93

WORD CLOUDS FROM SURVEY

Question 7: Community asset assistance during storm events

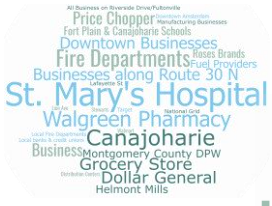
Question 8: Impacted Infrastructure caused by storm events



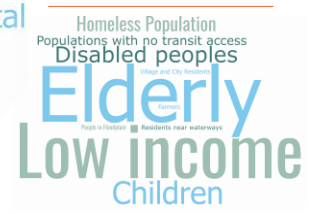
RECAP FROM MARCH PUBLIC MEETING

WORD CLOUDS FROM SURVEY

Question 9: Necessary Community Assets



Question 10: Vulnerable Populations



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RECAP FROM MARCH PUBLIC MEETING

WORD CLOUDS FROM SURVEY

Question 11: Valued community natural environments

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SECTION 5
VULNERABILITY ASSESSMENT
OVERVIEW

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RECAP FROM MARCH PUBLIC MEETING

HMP VULNERABILITY ASSESSMENT

- **Identify locations that are at risk from flooding inundation based on current and historic flooding**
  - Use FEMA 100-year and 500-year floodplain

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RECAP FROM MARCH PUBLIC MEETING

SUMMARY OF VULNERABILITY RESULTS

- **100-Year Flood Zone**
  - 51 identified Community Assets are within 100-year flood
  - 10 are critical
    - *Village of Fonda*
    - *Village of Canajoharie*
    - *Village of Fort Plain*
- **500-Year Flood Zone**
  - 16 identified Community Assets are within 500-year flood
  - 7 are critical
    - *Village of Fort Plain*
    - *Village of Canajoharie*
    - *Village of Fort Johnson*

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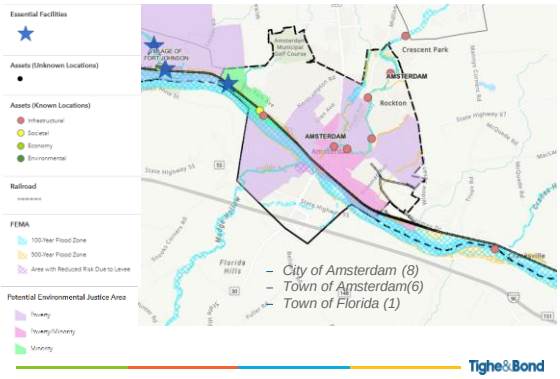
COMMUNITY ASSETS FLOOD VULNERABILITY



- *City of Amsterdam (8)*
- *Town of Amsterdam(6)*
- *Town of Florida (1)*

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COMMUNITY ASSETS FLOOD VULNERABILITY

Essential Facilities in Floodplain:
Village of Ft. Plain (6)
Village of Canajoharie (3)
Village of St. Johnsville (3)

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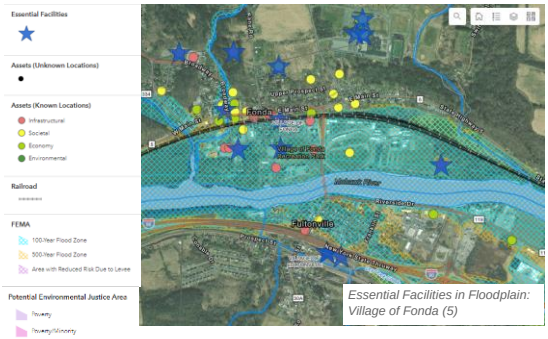
COMMUNITY ASSETS FLOOD VULNERABILITY



Essential Facilities in Floodplain:
Village of Fonda (5)

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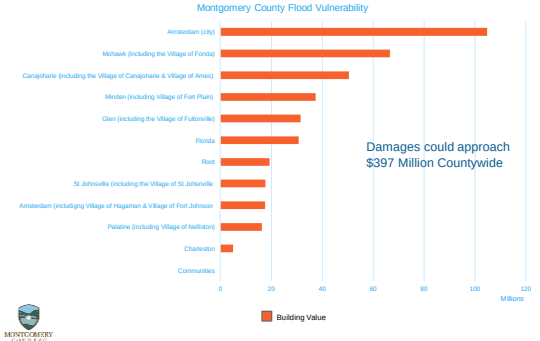
RECAP FROM MARCH PUBLIC MEETING

MONTGOMERY COUNTY FLOOD VULNERABILITY



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RECAP FROM MARCH PUBLIC MEETING

HMP VULNERABILITY ASSESSMENT

- **Identify repetitive loss structures from the National Flood Insurance Program**

Montgomery County has 199 NFIP policies in force over 18 communities in Montgomery County ($39M value)

As of 2022 there are 40 repetitive loss properties in 11 communities

Since 1978, 89 repetitive loss claims have been paid for a total of $3.5 Million

For all NFIP policies, a total of 282 claims were paid totaling more than $8.7 Million

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REPETITIVE LOSSES IN EASTERN MONTGOMERY COUNTY

For City of Amsterdam and Towns of Amsterdam and Florida, repetitive loss claims total $170K in building and content damages.

In total 40 flood claims ($451K) were received for this area between 1979-3/2023.

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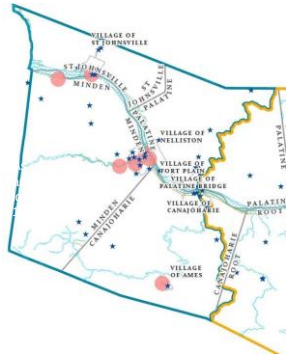
REPETITIVE LOSSES IN WESTERN MONTGOMERY COUNTY

Ames, Fort Plain & Town of St Johnsville

- 17 repetitive loss properties
- cumulative claims $1,598,850 (building and content damages)

A total of 138 flood claims ($4,384,579) were received for this area between 1979-3/2023.



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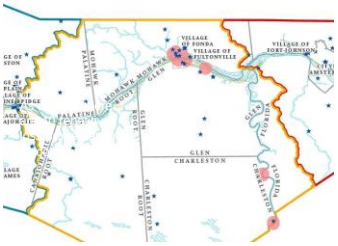
REPETITIVE LOSSES IN CENTRAL MONTGOMERY COUNTY

Fonda, Fultonville & Charleston
- 19 repetitive loss properties
- cumulative claims $1,749,631
- (building and content damages)

A total of 102 flood claims ($3,693,106) were received for this area between 1979-3/2023.



IDENTIFY SHELTERS AND LOCATIONS FOR DISPLACED RESIDENTS

Facility Name	Address	Area	Enroll	Designated Shelter
Saint Mary's Institute	10 Kopernick Blvd	Amsterdam (C)	351	No
Montessori School of Amsterdam	74 Locust Ave	Amsterdam (C)	46	Yes
Amsterdam High School	140 Saratoga Ave	Amsterdam (T)	1145	Yes
Clara S. Bacon School	40 Henrietta Blvd	Amsterdam (C)	250	Yes
Lynch Middle School	53 Brandt Place	Amsterdam (C)	844	Yes
Marie Curie Middle School	9 Brice St	Amsterdam (C)	391	Yes
Raphael J. McNulty Elementary	60 Brandt Place	Amsterdam (C)	406	Yes
William B. Tecler Elementary	210 Northern Blvd	Amsterdam (T)	370	Yes
William Barkley School	66 De Stefano St	Amsterdam (C)	211	Yes
CAB	11 Liberty Street	Amsterdam		Yes
Canajoharie Senior High School	136 Scholastic Way	Canajoharie (V)	404	Yes
Canajoharie East Hill / Middle	25 School District Rd	Canajoharie (V)	414	Yes
Faith Bible Academy	106 Crosby Road	Sprakers	31	No
Fonda-Fultonville Senior HS	112 Old Johnstown Rd	Mohawk	556	Yes
Fonda-Fultonville K-4 School	112 Old Johnstown Rd	Mohawk	578	Yes
Fonda-Fultonville 5-8 School	112 Old Johnstown Rd	Mohawk	517	Yes
Harry Hoag School	25 High St	Fort Plain	648	Yes
Fort Plain High School	1 West St	Fort Plain	317	Yes
Saint Johnsville High School	44 Center Street	St Johnsville (V)		Yes
Twin Mountain Amish School/ Sunset View Amish	163 Buel Road 184 Blaine Rd	Canajoharie (V) Canajoharie (V)	N/A	Unknown
Dygert Road Amish Stone Arabia Amish	Dygert Rd Rd#2 Stone Arabia Rd	Palatine Bridge Minden	N/A	Unknown

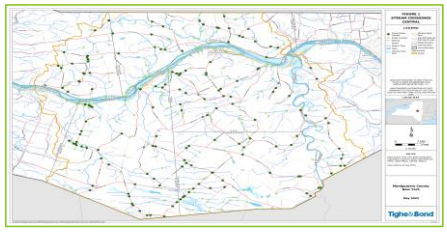
INTRODUCTION TO CULVERT ASSET MANAGEMENT

- Historically how have culverts been managed?
- Why review a community's culvert assets? (Funding)
- How can we be more measured in our approach
- Types of Culverts
  - Road/Stream Crossings
  - Drainage
- Asking for Assistance from the Community

INVENTORY ASSESSMENT

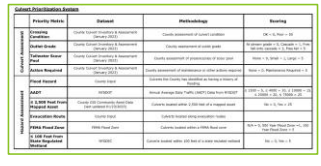
- Focus on Road and Stream Crossing on County Roads
  - More likely to have greater flood impacts
  - More likely to effect evacuation routes
- County Staff Inventoried Culverts on County Roads
  - Stephanie and Karl
- Assessed over 330 culverts across the county
- Including over 80 metrics per culvert

RESULT OF INVENTORY ASSESSMENT IS A MAP



PRIORITIZATION

- Looking to find critical culverts that need replacement
- Reduce 330 culverts down to a manageable Top 20
- 11- total metrics
- Need community feedback on 2 metrics



STREAM CROSSING & EMERGENCY ACCESS ACTIVITY

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ACCESS ACTIVITY DIRECTIONS

Where do you live?
- Review Stream Crossing Maps
- Place blue dots on your home or place of business.

What is your experience with Culvert or Roadway Issues?
- Review Stream Crossing Maps
- Place red dots for areas where flooding continues to be a problem for you or your community.

What Community Assets are critically important to you?
- Review Community Asset Maps
- Place green dots for locations that are critical to be able to reach for food, gas, shelter, schools, or medical services for you or your community.

Have you had evacuation or access Issues during extreme weather events?
- Review Stream Crossing or Community Asset Maps
- *Add comments regarding personal experience with difficulty road navigation during flood or severe winter storm events.*

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SECTION 7 & 8 MITIGATION STRATEGY

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STEPS TO COMPLETE MITIGATION STRATEGY

- Review Goals and Objectives
- Update Capabilities Assessment
- Review Prior Plan Mitigation Actions
- Brainstorm new Mitigation Actions

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NEW HMP MISSION STATEMENT

A resiliency vision for Montgomery County includes empowering residents, communities and County Leaders to make near, mid and long-term changes that will reduce future climate change impacts, protect its vital community assets, and adapt to changes already occurring. The mitigation actions included in the 2023 Hazard Mitigation Plan complement and support this resiliency vision.

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HMP GOAL REVIEW

EXISTING HMP GOALS FROM 2008

1. Protect Life and Property
2. Increase (Public) Awareness of Hazard Risk and Preparedness
3. Encourage Partnerships
4. Provide for Emergency Services
5. Improve Fiscal Mitigation Capabilities

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HMP GOAL REVIEW

EXPANDED HMP GOALS FOR 2023

1. Protect the health and safety of the public
2. Protect existing properties and structures.
3. Minimize hazard risks for future development
4. Increase resilience by protecting and enhancing natural resources
5. Maintain Hazard Awareness
6. Ensure that essential services can function during and after a hazard event.
7. Work regionally to mitigate impacts from natural hazards and to respond and recover from hazard events
8. Determine priorities for directing resources for hazard mitigation and response

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MITIGATION STRATEGY REVIEW OF GOALS AND OBJECTIVES

MEMORANDUM Tighe&Bond

Mitigation Strategy Review for Montgomery County Hazard Mitigation Plan; Part 1 Goals

To: Alex Kuttesch, Montgomery County Business Development Center
From: Gabrielle Belfit, CFM Tighe & Bond
Copy: Montgomery County Multijurisdictional Hazard Mitigation Plan Core Team
Date: May 16, 2023

This Memo is being provided in advance of the planned regional workshops which will focus on updating natural hazard mitigation strategies for Montgomery County and all participating jurisdictions. There are several important items to review from the 2016 Montgomery County All-Hazard Multijurisdictional Mitigation Plan (HMP) Plan including goals and previous mitigation actions. This memo focuses on the review of HMP Goals.

In accordance with 44 Code of Federal Regulations (CFR) §201.6(c)(3)(i), the HMP must include mitigation goals to reduce or avoid long term vulnerabilities from the identified hazards. The HMP must also identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction to reduce the effects of hazards with emphasis on existing and proposed buildings and infrastructure (44 CFR §201.6(c)(3)(ii)).

The 5-year HMP update must be consistent with FEMA's revised local mitigation planning policy that became effective on April 19, 2023. Revisions to the planning policy include ensuring that the mitigation strategy is inclusive of underserved communities and socially vulnerable populations and addresses climate change. Goals specific to public health and safety, at risk populations, protection of natural resources, and planning for future development should be included.

We recommend that the previous plan goals and objectives be reviewed for consistency with the April 19, 2023, planning policy revisions and identified hazards. The updated plan should also outline the specific measures to be taken to protect the community against hazards Montgomery County would most likely encounter within the next 5-year planning period. These mitigation measures should include a range of structural and non-structural mitigation projects addressing planning, policy, education programs, infrastructure, and emergency services. To strengthen the HMP, goals should align with specific mitigation projects and the overarching vision of making Montgomery County more resilient.

1.1 Review of 2016 HMP Goals

Goal: Review previous mitigation strategies goals/objectives and consider updated recommendations.

For your convenience we have provided the previous plan goals and objectives below.

2016 Goals & Objectives (original to 2008 plan):

Goal 1 Protect Life and Property

Objective 1-1: Implement mitigation activities that will assist in protecting lives and property by making homes, businesses, infrastructure, and critical facilities more

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CAPABILITIES ASSESSMENT

1. Review current reports, plans and policies related to Hazard Mitigation planning
2. Update staffing and technical capabilities to implement Hazard Mitigation actions
3. Review opportunities for funding mitigation actions
4. Review opportunities for local Public Education and Awareness
5. Make recommendations for improvements

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CAPABILITIES ASSESSMENT

The capability assessment is used to formulate a viable mitigation strategy late in the planning process. The assessment has three components:

- An inventory of a jurisdiction's existing planning and regulatory tools
- An analysis of its capacity to use them effectively
- A summary of how the mitigation plan will be integrated into other planning mechanisms.

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FEMA CAPABILITIES ASSESSMENT TOOLS

1. Planning and Regulatory Capabilities
2. Administrative and Technical Capability
3. Financial Capability
4. Education and Outreach

Capability Assessment Worksheet- Town of Florida

Planning and Regulatory — COUNTY TO WORK WITH JURISDICTIONS TO ANSWER

Plans	Yes/No Year	Does the plan address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Yes, 2002	
Capital Improvements Plan	Yes	
Economic Development Plan	Yes	
Local Emergency Response Plan	Yes	
Continuity of Operations Plan	?	
Transportation Plan	Yes	
Stormwater Management Plan	Yes	
Watershed Management Plan	Yes	
Floodplain Management Basin Plan	Yes	
Open Space and Recreation Plan		
Building Code, Permitting, and Inspections	**Yes/No**	**Are codes adequately enforced?**
Building Code	Yes	
Building Code Effectiveness Grading Schedule (BCEGS) Score	Yes?	
Fire department ISO rating	Yes	
Site plan review requirements	Yes	
Land Use Planning and Ordinances	**Yes/No**	**Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?**
Zoning ordinance	Yes	
Subdivision ordinance	Yes	
NFIP Flood Damage Prevention Ordinance	Yes	
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	
Flood insurance rate maps	?	
Acquisition of land for open space and public recreation uses	?	
Stormwater Management Ordinance	No	
Growth Management Ordinance	Yes	
Real Estate Disclosure Requirements	Yes	

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FEMA CAPABILITIES ASSESSMENT TOOLS

Safe Growth Audit

Use this worksheet to identify gaps in your community's growth guidance instruments and improvements that could be made to reduce vulnerability to future development.

Comprehensive Plan	Yes	No
Land Use		
1. Does the future land-use map clearly identify natural hazard areas?		
2. Do the land-use policies discourage development or redevelopment within natural hazard areas?		
3. Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas?		
Transportation		
1. Does the transportation plan limit access to hazard areas?		
2. Is transportation policy used to guide growth to safe locations?		
3. Are movement systems designed to function under disaster conditions (e.g., evacuation)?		

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MITIGATION ACTIONS

1. Review Prior Mitigation Actions and report on status
2. Develop New Mitigation Actions to address key vulnerabilities to current and future natural hazards
3. Prioritize Mitigation Strategies for action over the next 5-year planning period.

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TYPES OF MITIGATION ACTIONS

1. Prevention
2. Property Protection
3. Public Education and Awareness
4. Natural Resource Protection and Green Infrastructure
5. Structural Projects
6. Emergency Services Protection

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TYPES OF MITIGATION ACTIONS

1. Prevention

Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built, and direct public activities to reduce hazard losses.

Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.

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TYPES OF MITIGATION ACTIONS

2. Property Protection

Modification or removal of existing buildings or infrastructure to protect them from a hazard.

Examples include acquisition, elevation, relocation, structural retrofits, flood proofing, storm shutters, and shatter resistant glass.

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TYPES OF MITIGATION ACTIONS

3. Public Education and Awareness

Actions to inform and educate citizens, elected officials, and property owners about the potential risks from hazards and ways to mitigate them.

Such actions include outreach projects, real estate disclosure requirements, hazard information centers, and school-age and adult education programs.

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TYPES OF MITIGATION ACTIONS

4. Natural Resource Protection and Green Infrastructure

Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems.

These actions include low impact development, sediment and erosion control, stream corridor restoration, watershed management, urban forest and vegetation management, and wetland restoration and preservation.

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TYPES OF MITIGATION ACTIONS

5. Structural Projects

Actions that involve the construction of structures to reduce the impact of a hazard.

Such structures include storm water controls (e.g., culverts), floodwalls, seawalls, retaining walls, and safe rooms.

TYPES OF MITIGATION ACTIONS

6. Emergency Services Protection

Actions that will protect emergency services before, during, and immediately after an occurrence.

Examples of these actions include protection of warning system capability, protection of critical facilities, and protection of emergency response infrastructure.

MONTGOMERY COUNTY PRIORITY MITIGATION ACTIONS FROM 2016

- **Prevention**
  - Update local zoning in floodplain, identify evacuation routes, emergency evacuation and safe-haven program for large livestock, code enforcement training, debris management plan
- **Natural Resource Protection**
  - Otsguago Creek and Mohawk River tributaries stream gauge system, Stream channel stabilization projects for Otsquago and Canajoharie Creek
- **Structural Projects**
  - DPW vehicle storage outside of floodplain, flood protection for St. Mary's hospital, Burtonsville Road Spur Bridge upgrade, phased culvert assessment
- **Emergency Services Protection**
  - Upgrade County emergency communications infrastructure, backup power for senior facilities, location for temporary housing for residents displaced by disasters

MITIGATION ACTIONS ACTIVITY

REVIEW OF PREVIOUS MITIGATION ACTIONS

- **Local input is required to review projects that were included in the previous HMP, specific to each Annex Jurisdiction**
- **Tables available for each jurisdiction with required review instructions**
- **NYDHSES requires additional information for each project completed in the last five years to track success of the HMP program.**

PART 1: REVIEW OF PREVIOUS MITIGATION ACTIONS

Insert Jurisdiction's Name Here

Past Mitigation Accomplishments

Proj #	Project Name	Hazard Addressed	Brief Summary of the Original Problem and the Solution (Project)	Evaluation of Success	
				Cost	
				Level of Protection	
				Damages Avoided; Evidence of Success	
				Cost	
				Level of Protection	
				Damages Avoided; Evidence of Success	
				Cost	
				Level of Protection	
				Damages Avoided; Evidence of Success	

MITIGATION ACTIVITY DIRECTIONS

1. **Review the list of 2016 actions.**
2. **For each action, update the status column to identify the current status as follows:**
   a. The action has been completed.
   b. The action is still in progress and should be kept as part of the 2023 list of mitigation actions.
   c. The community wishes to delete it.
   d. The action will be tabled for future consideration.
   e. The action needs to be modified and included as part of the 2023 list of mitigation actions.
3. **Update the explanation of status as needed to clarify information relevant to any of the mitigation action headings.**

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PART 2: NEW MITIGATION ACTIONS

- Local input is required to develop new projects to be included in the updated HMP, specific to each Annex Jurisdiction
- NYDHSES requires a minimum of 2 new projects to be put forward for each Jurisdiction
- Mitigation Worksheets must be completed for each new project

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ONCE ALL PROJECTS ARE SELECTED COMMUNITY MUST FORMALIZE PRIORITIZATION:

- Funding availability and terms
- Consensus in community for project
- Needed to advancing longer-term outcomes (e.g. phase of a project)
- Does it contribute towards meeting local and regional planning objectives

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NEXT STEPS

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NEXT STEPS

- Prioritize Mitigation Actions
- Complete Individual Annexes
- Finalize County Draft HMP
- Public Review on County Draft HMP
- Respond to Public Comments and prepare Final Draft
- Final Draft to NYDHSES, then FEMA
- FEMA approves
- Communities & County must adopt the FEMA approved plan

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LOCAL CONTACT INFORMATION

Organization	Name	Title	Primary POC	Secondary POC
Montgomery County (Core Team Members)	Kenneth Rose	Code Enforcement Officer	X	
	Alex Kutbirsch	Senior Planner/GIS		X
	Jeff Kacmar	Emergency Management Deputy Director		
	Stephanie Battisti	Economic Development Specialist		
Amen (Village)	Mike McMahon	Mayor	X	
City of Amsterdam	Mike Clark	City Engineer	X	
	Anthony Agresta	Fire Chief		X
Amsterdam (Town)	Thomas DiMezza	Town Supervisor	X	
	Bart Tessiero	Highway Superintendent		X
Canajoharie (Town)	Benny Goldstein	Town Supervisor	X	
	Erica Hayes	Town Clerk		X
Canajoharie (Village)	Peter Briele	Superintendent of Highway	X	
	Scott Spraglue	Trustee		X
Charleston (Town)	Ellen McHale	Board Member	X	
	David Weiner	Chairman, Planning Board		X
Florida (Town)	Steve Anderson		X	
	Eric Mead	Supervisor		X
Fonda (Village)	Bill Foster	Mayor	X	
	Scott Sprague	Trustee		X
Ft. Plain (Village)	Patrick Hanifin	Mayor	X	
	Rodney Strait	Deputy Mayor		X
Fultonville (Village)	Tim Morford	Deputy Mayor	X	
	Vickie Romano	Village Clerk		X
Glen (Town)	Tim Reilly	Supervisor		
	Russ Kelly	Town of Glen Council		
Minden (Town)	Joseph Hanifin	Superintendent of Highway	X	
	Cheryl Reese	Supervisor		X
Mohawk (Town)	Bill Hoheg	Highway Superintendent	X	
	Janet DePalma	Deputy Supervisor		X
Nelliston (Village)	Edward Watt	Village Clerk	X	
Palatine Bridge (Village)	James Post	Mayor	X	
	Barbara Millington	Village Clerk		X
St. Johnsville (Town)	Phoebe Sitterly	Town Supervisor	X	
	Joyce Cool	Village Clerk	X	
St. Johnsville (Village)	Marissa Nellis	Deputy Clerk		X
	Dawn White	Mayor		X

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OPEN DISCUSSION & QUESTIONS

Contact Information:

- **Brandee Nelson, PE, LEED AP Project Director**
  - BNelson@tighebond.com
  - 518.965.5786
- **Sharon Rooney, AICP, Principal Planner**
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  - 508.221.6667
- **Ryan Morrison, PE, Project Manager**
  - RMorrison@tighebond.com
  - 845.417-7990
- **Gabrielle Belfit, CFM, Senior Environmental Scientist**
  - GCBelfit@tighebond.com
  - 508.304.6362

DEVELOPING AND PRIORITIZING FUTURE MITIGATION ACTIONS

Montgomery County Public Hazard Mitigation Plan Workshop #2

November 16, 2023 10AM -12PM

Tighe&Bond

1

PURPOSE OF PUBLIC MEETING

1. Review Tools for Annex Development
2. Review Steps for Mitigation Strategy
3. Problem Statements for Action Identification
4. STAPLEE Method for Prioritizing Actions

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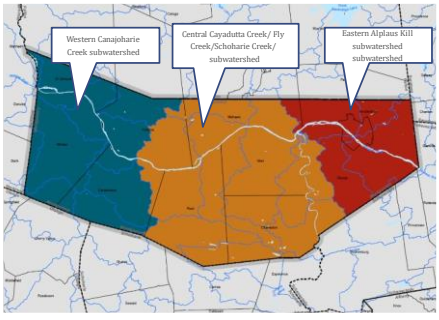
2

PLANNING AREAS*



* Subwatershed naming conventions based on USGS HUC 10

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3

RECAP OF HMP PLANNING PROGRESS TO DATE

- Established County Core Team & Jurisdiction Planning Teams
- Included Additional Local Stakeholders
- Public Meeting: Understanding Impacts from Changing Climate
- Survey to Rate Natural Hazard Risk for Montgomery County
- Developed GIS tool to Identify Important Community Assets
- Survey Community Assets Vulnerabilities & Strengths
- Public Meeting: Vulnerability Risk Assessment
- Survey Capabilities of County and Jurisdictions
- Draft Annex for Jurisdictions

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RECAP OF HMP PROGRESS TO DATE

Section 1	Introduction
Section 2	Planning Process
Section 3	County Profile
Section 4	Natural Hazard Risk
Section 5	Community Asset Inventory
Section 6	Vulnerability Assessment
Section 7	Capabilities Assessment
Section 8	Mitigation Strategy
Section 9	Plan Evaluation and Maintenance
Section 10	Plan Adoption

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JURISDICTION ANNEX PROGRESS

- **Draft Annexes completed**
- **Jurisdictions review and return to MC**
- **NYDHES to review and revisions made as needed**
- **Final Annexes must be adopted by all Jurisdictions to be included in the County Hazard Mitigation Plan**

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TOOLS FOR ANNEX DEVELOPMENT

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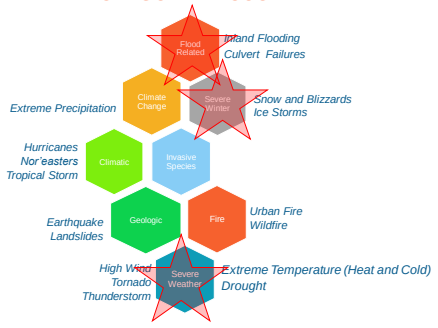
RECAP FROM MARCH PUBLIC MEETING

TOP NATURAL HAZARD RISKS IDENTIFIED FOR MONTGOMERY COUNTY



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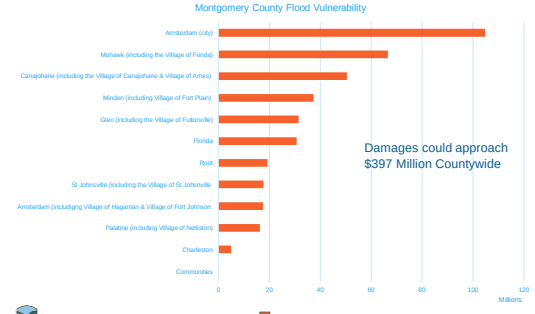
RECAP FROM MARCH PUBLIC MEETING

LOCAL FLOOD VULNERABILITY



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RECAP FROM MARCH PUBLIC MEETING

ANNEX MAPS

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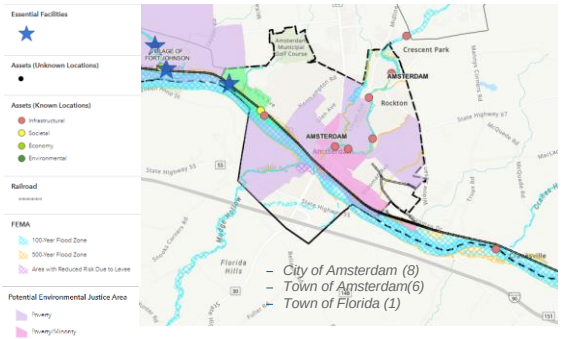
COMMUNITY ASSETS- SOCIAL VULNERABILITY



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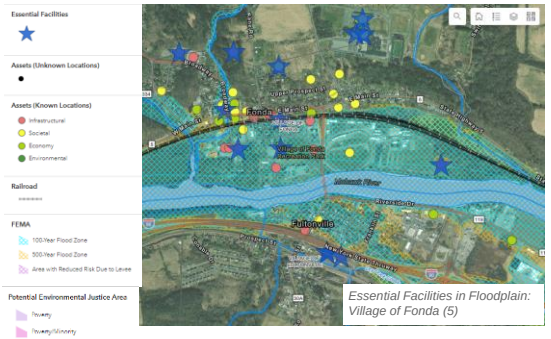
COMMUNITY ASSETS – FLOODING VULNERABILITY



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COMMUNTIY REPETITIVE LOSS DATA

For City of Amsterdam and Towns of Amsterdam and Florida, repetitive loss claims total $170K in building and content damages.

In total 40 flood claims ($451K) were received for this area between 1979-3/2023.

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COMMUNITY SHELTERS

Facility Name	Address	Area	Enroll	Designated Shelter
Saint Mary's Institute	10 Kopernick Blvd	Amsterdam (C)	351	No
Montessori School of Amsterdam	74 Locust Ave	Amsterdam (C)	46	Yes
Amsterdam High School	140 Saratoga Ave	Amsterdam (T)	1145	Yes
Clara S. Bacon School	40 Henrietta Blvd	Amsterdam (C)	250	Yes
Lynch Middle School	53 Brandt Place	Amsterdam (C)	844	Yes
Marie Curie Middle School	9 Brice St	Amsterdam (C)	391	Yes
Raphael J. McNulty Elementary	60 Brandt Place	Amsterdam (C)	406	Yes
William B. Tecler Elementary	210 Northern Blvd	Amsterdam (T)	370	Yes
William Barkley School	66 De Stefano St	Amsterdam (C)	211	Yes
CAB	11 Liberty Street	Amsterdam		Yes
Canajoharie Senior High School	136 Scholastic Way	Canajoharie (V)	404	Yes
Canajoharie East Hill / Middle	25 School District Rd	Canajoharie (V)	414	Yes
Faith Bible Academy	106 Crosby Road	Sprakers	31	No
Fonda-Fultonville Senior HS	112 Old Johnstown Rd	Mohawk	556	Yes
Fonda-Fultonville K-4 School	112 Old Johnstown Rd	Mohawk	578	Yes
Fonda-Fultonville 5-8 School	112 Old Johnstown Rd	Mohawk	517	Yes
Harry Houg School	25 High St	Fort Plain	648	Yes
Fort Plain High School	1 West St	Fort Plain	317	Yes
Saint Johnsville High School	44 Center Street	St Johnsville (V)		Yes
Twin Mountains Amish School/ Sunset View Amish	163 Hoel Road 184 Blaine Rd	Canajoharie (V) Canajoharie (V)	N/A	Unknown
Dygert Road Amish Stone Arabia Amish	Dygert Rd Rd#2 Stone Arabia Rd	Palatine Bridge Minden	N/A	Unknown

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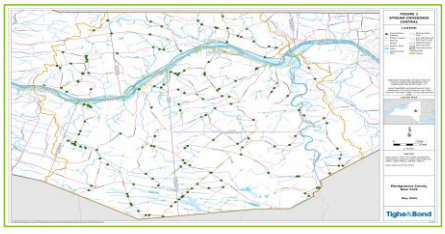
COMMUNITY CULVERT ASSESSMENT



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MITIGATION STRATEGY

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MITIGATION ACTIONS ACTIVITY

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STEPS TO COMPLETE MITIGATION STRATEGY

- Review Goals and Objectives
- Update Capabilities Assessment
- Review Prior Plan Mitigation Actions
- Develop and Prioritize New Mitigation Actions

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NEW MITIGATION ACTIONS (2024-2029)

1. Develop New Mitigation Actions to address key vulnerabilities to current and future natural hazards
2. Prioritize Mitigation Strategies for action over the next 5-year planning period.

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MITIGATION ACTION REQUIREMENTS INCLUDE COMPREHENSIVE RANGE OF ACTIONS

- Must address top natural hazards
- Must include flooding if in SFHA
- Emphasis on reducing risk to existing buildings, structures and infrastructure as well as new and redevelopment
- Be specific and clearly link actions to vulnerabilities and impacts

- Actions must be achievable and demonstrate how risk is mitigated.
- Actions must identify responsible party to implement
- Actions to benefit underserved communities and socially vulnerable populations
- Actions must be prioritized

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TYPES OF MITIGATION ACTIONS

1. Prevention
2. Property Protection
3. Public Education and Awareness
4. Natural Resource Protection and Green Infrastructure
5. Structural Projects
6. Emergency Services Protection

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TYPES OF MITIGATION ACTIONS

1. Prevention

- building codes
- planning and zoning
- open space preservation
- capital improvement programs
- stormwater management regulations

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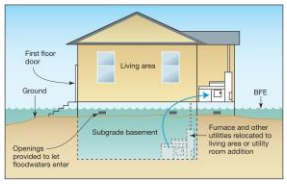
TYPES OF MITIGATION ACTIONS

2. Property Protection

- acquisition
- elevation
- relocation
- structural retrofits
- flood proofing
- storm shutters
- shatter resistant glass



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TYPES OF MITIGATION ACTIONS

3. Public Education and Awareness

- outreach projects
- hazard information centers
- real estate disclosure requirements
- school-age and adult education programs

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TYPES OF MITIGATION ACTIONS

4. Natural Resource Protection and Green Infrastructure

- low impact development
- sediment and erosion control
- stream corridor restoration
- watershed management
- urban forest and vegetation management
- wetland restoration and preservation

TYPES OF MITIGATION ACTIONS

5. Structural Projects

- storm water controls (e.g., culverts)
- floodwalls
- retaining walls
- safe rooms

TYPES OF MITIGATION ACTIONS

6. Emergency Services Protection

- protection of warning system capability
- protection of critical facilities
- protection of emergency response infrastructure

EAS Emergency Alert System

DEVELOPING PROBLEM STATEMENTS

- To communicate vulnerabilities, develop problem statements that:
  - Are clear and concise
  - Are not overly technical
  - Identify key issues or problems
  - Are based on the results of the risk assessment
  - Pertain to specific community assets or hazards

DEVELOPING PROBLEM STATEMENTS

- The problem statement should answer:
- Location of problem
- Cause and contributing factors creating the problem
- Significance of impacts
- Who is impacted, if applicable

DEVELOPING PROBLEM STATEMENTS

IMPACT	VICTIM	THREAT
▪ Casualties ▪ Property Damage ▪ Business Interruption ▪ Financial Loss ▪ Environmental Contamination	▪ School Children in High Hazard Areas ▪ Care Facilities in High Hazard Areas ▪ Vulnerable Population Exposed to Hazards	▪ Increased Fuels due to Drought ▪ Hotter, Drier Climate ▪ More Intense Storms ▪ Impervious Surfaces = Greater Runoff ▪ Increases of Invasive Species

DEVELOPING PROBLEM STATEMENTS

- Goal to have at least one mitigation action for each problem statement

- Problems
- The Town does not have adequate generators for loss of power during mass sheltering events. Generators are needed at the Community and Senior Center.

- Action:
- **Construct backup generators at sheltering locations to respond to hazard events in loss of power**

DEVELOPING PROBLEM STATEMENTS

- Problems
- Streams and waterways are seeing significant erosion throughout the City. One major point of erosion is at a 90 degree bend in Ulatis Creek as it turns to parallel East Main.

- Action:
- **Assess and implement erosion and flood control options for Ulatis Creek at intersection with Main Street**

DEVELOPING PROBLEM STATEMENTS

- Problems
- While the City maintains trees to reduce power outages from high wind, many problematic trees are located on private property.
-
- Action:
- **Develop cost share program to help private landowners with tree maintenance to avoid power outages and damage during windstorms.**

Table 6. Amsterdam Problem Statements.

Add to problem statements as needed.

Problem Area	Description
Primary Hazards of Concern	
Trees	Tree related hazards are widespread during hurricane/tropical storm and severe winter storm events, particularly downing electrical lines, and when falling and blocking roads that isolate many rural areas throughout town and pose life/safety threat due to a lack of emergency access. Hazardous trees on Town-owned property are also a significant and costly concern. There are many diseased trees that create an additional threat to wires.
Geographic Areas of Concern	
Fort Johnson Kayaderosseras Creek	**Local Areas of Flooding-**
Harrower District North Chuctanunda Creek	Chapman Drive (County Rd 157) from the City of Amsterdam line to Truax Road. This road experiences flooding at all times of the year.
Cranesville Cranes Hollows Creek	Upper Van Dyke Avenue. Water runs down from Route 30 flooding roadway (often causing road closure) and then on to municipal golf course. The road is damaged.
Mohawk River	Fort Johnson, Route 5 at intersection of Route 67 and Lepper Road along Route 5
Vulnerable Community Assets	
Shelters	Two shelters exist in Amsterdam.
Bridges	Crescent Ave and Prospect Street Bridges are vulnerable to flooding
Pump Stations	Amsterdam Pump Station 1 and Brant Street Pumpstation are in flood zone

Table 6. Village of Fultonville Problem Statements.

Add to problem statements as needed.

Problem Area	Description
Primary Hazards of Concern	
Trees	Tree related hazards are widespread during hurricane/tropical storm and severe winter storm events, particularly downing electrical lines, and when falling and blocking roads that isolate many rural areas throughout town and pose life/safety threat due to a lack of emergency access. Hazardous trees on Town-owned property are also a significant and costly concern.
Geographic Areas of Concern	
Dry Dock Creek Mohawk River	Local Areas of Flooding- The Mohawk River floods Village infrastructure and properties on nearly an annual basis. Over the past 20 years, the Village has been flooded an estimated 15 times, with the four most devastating recent events occurring in 2006 and 2011 and followed by Hurricane Sandy in 2012. In 2006, severe storms and flooding damaged infrastructure and private property, with costs exceeding $3 million. In 2011, the Village saw Hurricane Irene and Tropical Storm Lee cause over $775,000 in damage to the area. The most frequent flooding occurs from Dry Dock Creek to the west of the Village, through two thruway culverts to the south When the water elevation of the Mohawk River rises by even small amounts thruway culverts back up and flood homes and business
Vulnerable Community Assets	
Shelters	There are no designated Shelters in Fultonville.
Bridges	Town Bridges Route 30A
Emergency Service	

Table 6. Canajoharie Problem Statements.

Add to problem statements as needed.

Problem Area	Description
Primary Hazards of Concern	
Trees	Tree related hazards are widespread during hurricane/tropical storm and severe winter storm events, particularly downing electrical lines, and when falling and blocking roads that isolate many rural areas throughout town and pose life/safety threat due to a lack of emergency access. Hazardous trees on Town-owned property are also a significant and costly concern.
Geographic Areas of Concern	
Canajoharie Creek Mohawk River	**Local Areas of Flooding-** Dygert Road
Vulnerable Community Assets	
Shelters	There are no local shelters identified in Canajoharie.
Bridges/ Culverts	Mapletown Road, Clinton Road and Old Sharon Road culverts are in poor condition and need repairs
Critical Facilities	The DPW Barn is located in a flood zone in the Village of Ames. It is mentioned in the Village of Ames Annex, but is included in the Town of Canajoharie as a mitigation action.

(Name of Jurisdiction)

NYS DHSES Action Worksheet

Project Name:	
Project Number:	
Risk / Vulnerability	
Hazard of Concern:	
Description of the Problem:	
Action or Project Intended for Implementation	
Description of the Solution:	
Is this project related to a Critical Facility?	Yes ☐ No ☐
(If yes, this project must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater.)	
Level of Protection:	
Useful Life:	Estimated Benefits (losses avoided):
Estimated Cost:	
Plan for Implementation	
Prioritization:	Desired Timeframe for Implementation:
Estimated Time Required for Project Implementation:	Potential Funding Sources:
Responsible Organization:	Local Planning Mechanisms to be Used in Implementation, if any:

Three Alternatives Considered (including No Action)

Alternatives:	Action	Estimated Cost	Evaluation
	No Action	$0	

Progress Report (for plan maintenance)	
Date of Status Report:	
Report of Progress:	
Update Evaluation of the Problem and/or Solution:	

PRIOIRITZTION METHOD FOR MITIGATION ACTIONS

STAPLEE METHOD
Seven criteria are used to evaluate each mitigation action:

- Social
- Technical
- Administrative
- Political
- Legal
- Economic
- Environmental

STAPLEE BENEFIT COST REVIEW TABLE

STAPLEE Criteria	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
Considerations for Alternative Actions →	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws

All actions are entered into a spread sheet and scored based on the seven STAPLEE criteria

The total score of each action determines prioritization over the full range of actions

MEET WITH YOUR LOCAL PLANNING TEAM!

Review Annex information
Develop Problem Statements
Generate New Mitigation Actions
Prioritize Mitigation Actions

OPEN DISCUSSION & QUESTIONS

Contact Information:

- **Brandee Nelson, PE, LEED AP Project Director**
  - BNelson@tighebond.com
  - 518.965.5786
- **Sharon Rooney, AICP, Principal Planner**
  - SJRooney@tighebond.com
  - 508.221.6667
- **Gabrielle Belfit, CFM, Senior Environmental Scientist**
  - GCBelfit@tighebond.com
  - 508.304.6362

State of New York
County of Montgomery
ss.;

Lisa Spenziero of the City of Schenectady, being duly sworn, says that she is Principal Clerk in the office of The Recorder published in the City of Amsterdam and that the notice/advertisement, of which the annexed is a printed copy, has been regularly published in Recorder as follows:

1 insertion(s):

03/27/2024

Lisa Spenziero (signature)

Lisa Spenziero (printed name)

NOTARY PUBLIC
Sworn to me on this 27 day of March 2024

Notary Signature: Heather E. Walker

Heather E Walker
NOTARY PUBLIC STATE OF NEW YORK
Registration No. 01WA6422732
Qualified in Schenectady County
Commission Expires 09/27/2025

Montgomery County is currently updating the County Multi-jurisdiction Natural Hazard Mitigation Plan (HMP) and is seeking public comment at this time.

DRAFT MULTI-JURISDICTION NATURAL HAZARD MITIGATION PLAN UPDATE

The Multi-Jurisdiction Hazard Mitigation Plan is a FEMA prescribed effort which enables the County to obtain Federal Grants for planning and mitigation projects. The purpose of the Multi- Jurisdiction Hazard Mitigation Plan is to identify and profile the County's risk and vulnerability to potential natural hazards, including all jurisdictions within the County. Specifically, this plan assesses the potential impacts of hurricanes, winter storms, extreme precipitation and flooding, earthquakes, drought/wildfire, and dam/culvert failure and identifies properties, resources, and critical facilities which may be impacted by these hazard events. The plan identifies mitigation strategies and actions aimed at reducing the loss of or damage to life, property, infrastructure, and natural, cultural, and economic resources. A corresponding implementation plan was prepared to address the prioritization and administration of the identified strategies and actions.

To review the plan and learn more please go to: https://www.co.montgomery.ny.us/web/sites/departments/hazardmitigation/default.asp
For more information or to provide comments please contact, Alex Kuttesch, at akuttesch@co.montgomery.ny.us with "2024 MCHMP Public Comments" in the subject line.

BY: Matthew Ossenfort
Montgomery County Executive
3/27 8432

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MONTGOMERY COUNTY EXECUTIVE
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NANCY SZCZEPANIK
FONDA, NY 12068

Acct#:9130
Ad#:8432
Phone#:518-853-4304
Date:03/27/2024

Salesperson: VDRYSDALE | Classification: Legals Recorder | Ad Size: 1.0 x 78.00

Advertisement Information:

Description	Start	Stop	Ins.	Cost/Day	Total
Amsterdam Recorder	03/27/2024	03/27/2024	1	30.42	30.42

Payment Information:

Date:	Order#	Type
03/25/2024	8432	ACCOUNT:Bill at Expiry

Total Amount: 30.42
Amount Due: 30.42

Thank you for your business.

Ad Copy

State of New York
County of Montgomery
ss.;

Randall W. Lewis of the City of Schenectady, being duly sworn, says that he is Principal Clerk in the office of The Recorder published in the City of Amsterdam and that the notice/advertisement, of which the annexed is a printed copy, has been regularly published in Recorder as follows:

1 insertion(s):

04/26/2024

(signature)

Randall W. Lewis (printed name)

NOTARY PUBLIC
Sworn to me on this 26 day of April 2024

Notary Signature: Heather E. Walker

Heather E Walker
NOTARY PUBLIC STATE OF NEW YORK
Registration No. 01WA6422732
Qualified in Schenectady County
Commission Expires 09/27/2025

Friday May 3 at 10:10am
Legislative Chambers
64 Broadway
Fonda, NY 12068

RESOLUTION SCHEDULING PUBLIC HEARING - MONTGOMERY COUNTY ALL-HAZARD MITIGATION PLAN 5 - YEAR UPDATE

WHEREAS, the Disaster Mitigation Act of 2000 requires that local governments have either a single-jurisdiction or a multi-jurisdiction all-hazard mitigation plan that has been approved by the Federal Emergency Management Agency (FEMA) to receive project funding from the Hazard Mitigation Grant Program; and

WHEREAS, the New York State Division of Homeland Security and Emergency Services has awarded a Planning Grant Application from Montgomery County and their jurisdictions to update the existing 2016 All-Hazard Mitigation Plan; and

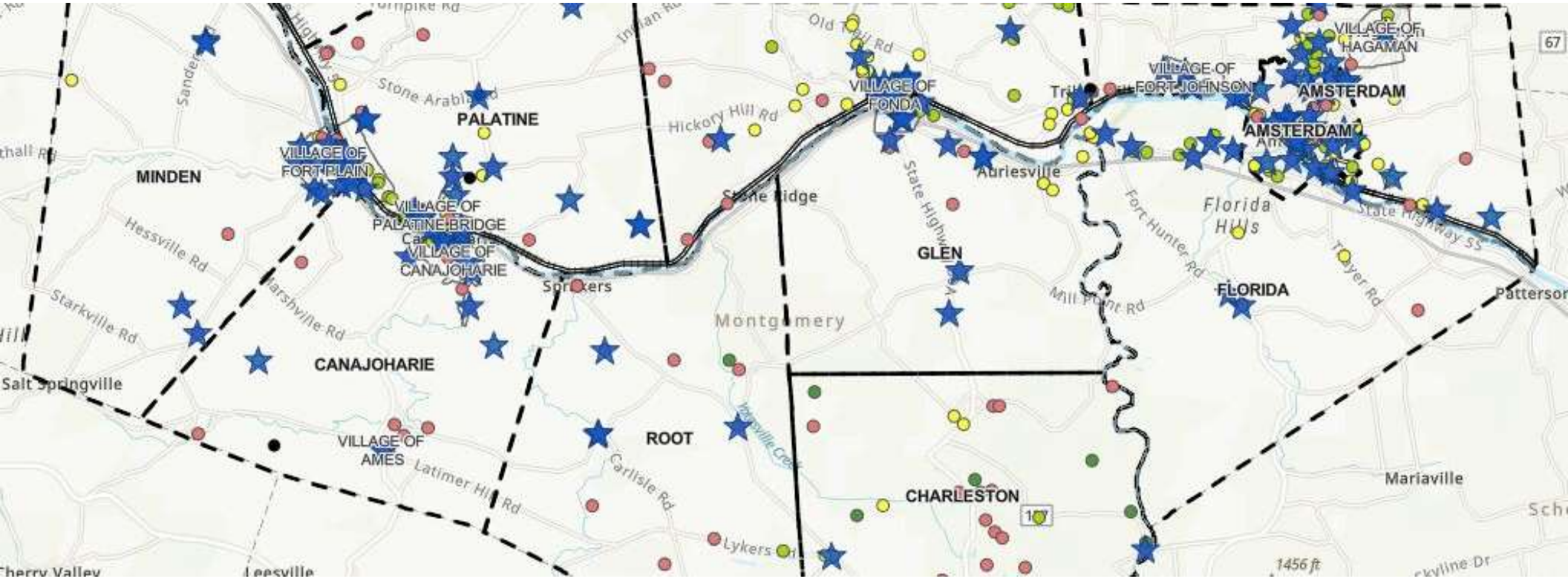
WHEREAS, the Federal Emergency Management Agency (FEMA) has directed the Montgomery County Legislature to hold a public hearing for comments on the draft final plan; and

RESOLVED, that the County Legislature hereby schedules a Public Hearing on the Hazard Mitigation Plan grant to be held at 5:55 pm, on May 7, 2024, in the Chambers of the County Legislature, County Office Building, Fonda, New York.

BY:
Matthew Ossenfort
Montgomery County Executive
4/26 9961

APPENDIX C MONTGOMERY COUNTY CULVERT ASSESSMENT

Appendix C Montgomery County Culvert Assessment



MONTGOMERY COUNTY HAZARD MITIGATION PLAN

Stream Crossing Activity

Project Lead: Ryan Morrison, PE

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INTRODUCTION TO CULVERT ASSET MANAGEMENT

- Historically how have culverts been managed?
- Why review a community's culvert assets? (Funding)
- How can we be more measured in our approach
- Types of Culverts
  - Road/Stream Crossings
  - Drainage
- Asking for Assistance from the Community

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INVENTORY ASSESSMENT

- **Focus on Road and Stream Crossing on County Roads**
  - More likely to have greater flood impacts
  - More likely to effect evacuation routes
- **County Staff Inventoried Culverts on County Roads**
  - Stephanie and Karl
- **Assessed over 330 culverts across the county**
- **Including over 80 metrics per culvert**

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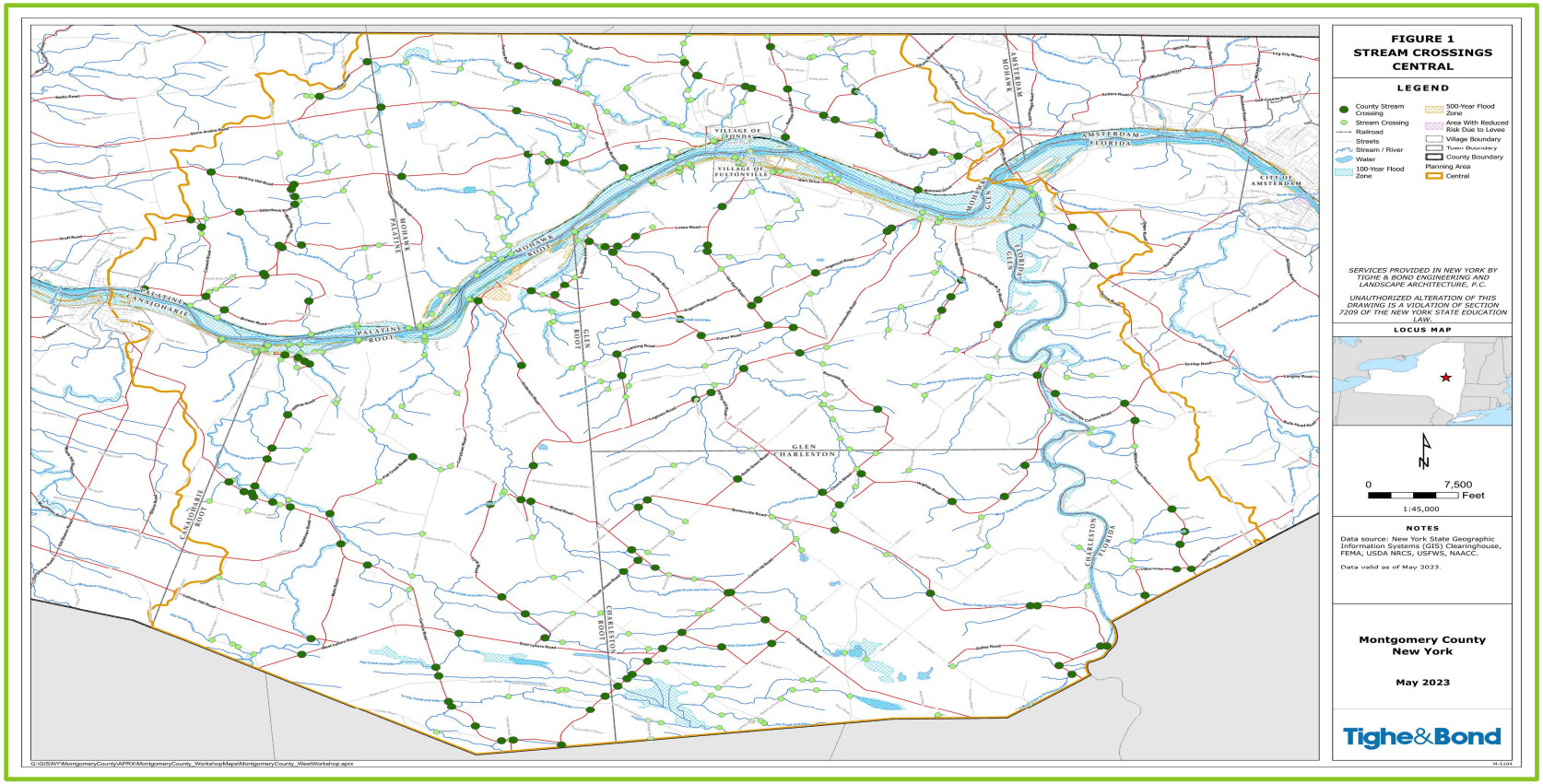
RESULT OF INVENTORY ASSESSMENT IS A MAP



PRIORITIZATION

- Looking to find critical culverts that need replacement
- Reduce 330 culverts down to a manageable Top 20
- 11- total metrics
- Need community feedback on 2 metrics

Culvert Prioritization System

	Priority Metric	Dataset	Methodology	Scoring
Culvert Assesment	**Crossing Condition**	County Culvert Inventory & Assessment (January 2023)	County assessment of culvert condition	OK = 0, Poor = 50
	Outlet Grade	County Culvert Inventory & Assessment (January 2023)	County assessment of outlet grade	At stream grade = 0, Cascade = 1, Free fall onto cascade = 3, Free fall = 5
	Tailwater Scour Pool	County Culvert Inventory & Assessment (January 2023)	County assessment of presence/size of scour pool	None = 0, Small = 1, Large = 5
	Action Required	County Culvert Inventory & Assessment (January 2023)	County assessment of maintenance or other actions required	None = 0, Maintenance Required = 5
Hazard Assessment	**Flood Hazard**	County Input	Culverts the County has identified as having a history of flooding	
	AADT	NYSDOT	Annual Average Daily Traffic (AADT) Data from NYSDOT	≤ 1500 = 5, ≤ 4000 = 10, ≤ 10000 = 15, ≤ 25000 = 20, ≤ 75000 = 25
	≤ 2,500 Feet from Mapped Asset	County GIS Community Asset Data (last updated 01/23/2023)	Culverts located within 2,500 feet of a mapped asset	No = 0, Yes = 25
	Evacuation Route	County Input	Culverts located along evacuation routes	
	FEMA Flood Zone	FEMA Flood Zone	Culverts located within a FEMA flood zone	N/A = 0, 500 Year Flood Zone =1, 100 Year Flood Zone = 5
	≤ 100 Feet from State Regulated Wetland	NYSDEC	Culverts located within 100 feet of a state reulated wetland	No = 0, Yes = 5

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COMMUNITY FEEDBACK

- **In room will have hard copies**
  - Use color coding for each
- **Remote users will use the Montgomery County Community Asset Dashboard**
  - Link to be provided in breakout rooms
- **Example**
  - Asset Category
  - Name and Address
  - Coordinate / Location
  - Additional Comments

Culvert Prioritization System

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	Action Required	County Culvert Inventory & Assessment (January 2023)	County assessment of maintenance or other actions required	None = 0, Maintenance Required = 5
Hazard Assessment	**Flood Hazard**	County Input	Culverts the County has identified as having a history of flooding	
	AADT	NYSDOT	Annual Average Daily Traffic (AADT) Data from NYSDOT	≤ 1500 = 5, ≤ 4000 = 10, ≤ 10000 = 15, ≤ 25000 = 20, ≤ 75000 = 25
	≤ 2,500 Feet from Mapped Asset	County GIS Community Asset Data (last updated 01/23/2023)	Culverts located within 2,500 feet of a mapped asset	No = 0, Yes = 25
	Evaucation Route	County Input	Culverts located along evacuation routes	
	FEMA Flood Zone	FEMA Flood Zone	Culverts located within a FEMA flood zone	N/A = 0, 500 Year Flood Zone =1, 100 Year Flood Zone = 5
	≤ 100 Feet from State Regulated Wetland	NYSDEC	Culverts located within 100 feet of a state reulated wetland	No = 0, Yes = 5

Montgomery County Culvert Asset Management Plan Prioritization

Tighe&Bond

											Culvert Assessment				Hazard Assessment					
Culvert ID	Road	Crossing Condition	Structure Material	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Crossing Condition	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Total	Ranking
MC-MO-30-250	Old Trail Road	Poor	Metal	Free fall onto cascade	<Null>	<Null>	≤ 1500	Yes	N/A	<Null>	50	3	0	0	5	25	0	0	83	1
MC-CJ-92-349	Mapletown Road	Poor	Plastic	At stream grade	None	No	≤ 1500	Yes	N/A	<Null>	50	0	0	0	5	25	0	0	80	2
MC-MO-33-233	Hickory Hill Road	Poor	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	50	0	1	0	5	0	0	5	61	3
MC-G-110-143	Logtown Road	Poor	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	50	0	5	0	5	0	0	0	60	4
MC-CJ-90-57	Old Sharon Road	Poor	Metal	Cascade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	1	1	0	5	0	0	0	57	5
MC-FL-151-118	Pattersonville Road	Poor	Metal	Cascade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	1	1	0	5	0	0	0	57	6
MC-CH-162-101	Green Road (North)	Poor	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	0	1	0	5	0	0	0	56	7
MC-CJ-80-65	Clinton Road	Poor	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	0	1	0	5	0	0	0	56	8
MC-FL-145-126	Fort Hunter Road	Poor	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	0	1	0	5	0	0	0	56	9
MC-G-164-151	Noeltner Road	Poor	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	0	1	0	5	0	0	0	56	10
MC-MO-33-229	Hickory Hill Road	Poor	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	0	1	0	5	0	0	0	56	11
MC-R-96-314	Hiltop Road	Poor	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	50	0	1	0	5	0	0	0	56	12
MC-MO-27-230	Main Street	OK	Concrete	At stream grade	Large	No	≤ 4000	Yes	100 Year Flood Zone	<Null>	0	0	5	0	10	25	5	0	45	13
MC-A-15-28	Wallins Corners Road	OK	Concrete	At stream grade	Small	No	≤ 10000	Yes	N/A	<Null>	0	0	1	0	15	25	0	0	41	14
MC-CH-127-94	Burtonville Road	OK	Concrete	At stream grade	Small	No	≤ 4000	Yes	N/A	Yes	0	0	1	0	10	25	0	5	41	15
MC-MO-34-244	Stone Arabia Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	100 Year Flood Zone	Yes	0	0	1	0	5	25	5	5	41	16
MC-CJ-81-47	Vadeusenville Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	5	0	5	25	5	0	40	17
MC-CJ-92-45	Mapletown Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	5	0	5	25	5	0	40	18
MC-FL-144-112	Dunlap Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	5	0	5	25	5	0	40	19
MC-FL-145-111	Fort Hunter Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	5	0	5	25	5	0	40	20
MC-R-107-322	Speakers Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	5	0	5	25	5	0	40	21
MC-R-98-302	Flat Creek Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	5	0	5	25	5	0	40	22
MC-MN-61-227	Bridge Street	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	Yes	100 Year Flood Zone	Yes	0	0	0	0	5	25	5	5	40	23
MC-FL-27-127	Main Street	OK	Metal	At stream grade	Small	No	≤ 4000	Yes	500 Year Flood Zone	<Null>	0	0	1	0	10	25	1	0	37	24
MC-G-117-153	Ingersoll Road	OK	Metal	Free fall	Small	No	≤ 1500	Yes	N/A	<Null>	0	5	1	0	5	25	0	0	36	25
MC-P-44-258	Brower Road	OK	Concrete	Free fall	Small	No	≤ 1500	Yes	N/A	<Null>	0	5	1	0	5	25	0	0	36	26
MC-P-44-265	Groff Road	OK	Metal	Free fall	Small	No	≤ 1500	Yes	N/A	<Null>	0	5	1	0	5	25	0	0	36	27
MC-R-93-330	Carlisle Road	OK	Metal	Free fall	Small	No	≤ 1500	Yes	N/A	<Null>	0	5	1	0	5	25	0	0	36	28
MC-A-39-33	Maple Ave Ext	OK	Metal	At stream grade	Small	No	≤ 4000	Yes	N/A	<Null>	0	0	1	0	10	25	0	0	36	29
MC-A-8-15	Widow Susan Road	OK	Concrete	At stream grade	Small	No	≤ 4000	Yes	N/A	<Null>	0	0	1	0	10	25	0	0	36	30
MC-A-8-8	Widow Susan Road	OK	Metal	At stream grade	Small	No	≤ 4000	Yes	N/A	<Null>	0	0	1	0	10	25	0	0	36	31
MC-CA-19-1	Steadwell Road	OK	Concrete	At stream grade	Small	No	≤ 4000	Yes	N/A	<Null>	0	0	1	0	10	25	0	0	36	32
MC-MN-70-212	Fordsbush Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	Yes	0	0	1	0	5	25	0	5	36	33
MC-MO-27-234	Main Street	OK	Metal	At stream grade	Small	No	≤ 4000	Yes	N/A	<Null>	0	0	1	0	10	25	0	0	36	34
MC-R-104-331	Corbin Hill Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	Yes	0	0	1	0	5	25	0	5	36	35
MC-A-2-4	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	1	0	5	25	5	0	36	36
MC-CH-160-81	Burtonville Road Spur	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	100 Year Flood Zone	<Null>	0	0	1	0	5	25	5	0	36	37
MC-CH-104-78	Corbin Hill Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	N/A	<Null>	0	0	5	0	5	25	0	0	35	38
MC-P-48-287	Wagners Hollow Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	N/A	<Null>	0	0	5	0	5	25	0	0	35	39
MC-R-110-307	Logtown Road	OK	Concrete	At stream grade	Large	No	≤ 1500	Yes	N/A	<Null>	0	0	5	0	5	25	0	0	35	40
MC-G-116-163	Van Epps Road	OK	Plastic	Free fall	None	No	≤ 1500	Yes	N/A	<Null>	0	5	0	0	5	25	0	0	35	41
MC-A-9-18	Mannys Corners Road	OK	Metal	At stream grade	None	No	≤ 4000	Yes	N/A	<Null>	0	0	0	0	10	25	0	0	35	42
MC-R-108-321	Speakers Hill Road	OK	Concrete	Cascade	Small	No	≤ 1500	Yes	N/A	<Null>	0	1	1	0	5	25	0	0	32	43
MC-FL-152-116	Pattersonville Road	OK	Combination	Free fall	Small	No	≤ 75000	<Null>	N/A	<Null>	0	5	1	0	25	0	0	0	31	44
MC-A-2-10	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	45
MC-A-2-12	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	46
MC-A-2-13	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	47
MC-A-23-19	Sacandaga Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	48
MC-A-3-20	Antlers Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	49
MC-CH-104-77	Corbin Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	50
MC-CH-127-80	Burtonville Road Spur	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	51
MC-CH-127-95	Burtonville Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	52
MC-CH-128-96	Polin Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	53
MC-CJ-80-66	Clinton Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	54
MC-CJ-94-48	Carlisle Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	55
MC-CJ-94-49	Old Sharon Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	56
MC-FL-147-120	Belldons Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	57
MC-MN-69-193	Pickle Hill Road	OK	Plastic	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	58
MC-MN-79-187	Freysbush Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	59

Montgomery County Culvert Asset Management Plan Prioritization

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											Culvert Assessment				Hazard Assessment					
Culvert ID	Road	Crossing Condition	Structure Material	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Crossing Condition	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Total	Ranking
MC-MO-30-253	Old Trail Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	60
MC-P-41-263	Old McKinley Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	61
MC-P-42-262	McKinley Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	62
MC-P-47-283	Nellis Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	63
MC-P-48-278	Wagners Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	64
MC-P-48-279	Wagners Hollow Road	OK	Metal	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	65
MC-R-108-320	Speakers Hill Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	66
MC-R-130-306	Brand Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	67
MC-SJ-56-340	Lasselsville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	Yes	N/A	<Null>	0	0	1	0	5	25	0	0	31	68
MC-CJ-91-59	Blaine Road	OK	Metal	At stream grade	None	No	≤ 1500	Yes	N/A	<Null>	0	0	0	0	5	25	0	0	30	69
MC-MO-30-345	Old Trail Road	OK	Metal	At stream grade	<Null>	<Null>	≤ 1500	Yes	N/A	<Null>	0	0	0	0	5	25	0	0	30	70
MC-FL-152-115	Pattersonville Road	OK	Metal	At stream grade	Small	No	≤ 75000	<Null>	N/A	<Null>	0	0	1	0	25	0	0	0	26	71
MC-MO-33-236	Hickory Hill Road	OK	Metal	Free fall	Large	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	5	5	0	5	0	5	0	20	72
MC-MN-76-353	Starkville Road	OK	Plastic	Free fall	Small	Maintenance required	≤ 1500	<Null>	N/A	<Null>	0	5	1	5	5	0	0	0	16	73
MC-R-93-312	Carlisle Road	OK	Metal	Free fall	Small	Maintenance required	≤ 1500	<Null>	N/A	<Null>	0	5	1	5	5	0	0	0	16	74
MC-MO-29-254	Albany Bush Road	OK	Concrete	Free fall	Small	No	≤ 1500	<Null>	N/A	Yes	0	5	1	0	5	0	0	5	16	75
MC-P-37-284	Indian Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	Yes	0	5	1	0	5	0	0	5	16	76
MC-CJ-80-52	Clinton Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	5	0	5	0	5	0	15	77
MC-CJ-81-50	Vadeusenville Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	5	0	5	0	5	0	15	78
MC-CJ-88-46	Latimer Hill Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	5	0	5	0	5	0	15	79
MC-G-129-168	Hughes Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	5	0	5	0	5	0	15	80
MC-R-93-301	Carlisle Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	5	0	5	0	5	0	15	81
MC-R-96-311	Hiltop Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	5	0	5	0	5	0	15	82
MC-R-108-319	Speakers Hill Road	OK	Concrete	Free fall onto cascade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	3	1	0	5	0	5	0	14	83
MC-MN-50-202	Otsquago Club Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	500 Year Flood Zone	<Null>	0	0	5	0	5	0	1	0	11	84
MC-MO-26-228	Mohawk Drive	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	500 Year Flood Zone	<Null>	0	0	5	0	5	0	1	0	11	85
MC-CH-130-91	Brand Road	OK	Metal	At stream grade	Small	Maintenance required	≤ 1500	<Null>	N/A	<Null>	0	0	1	5	5	0	0	0	11	86
MC-CJ-90-63	Maple Hill Road	OK	Metal	At stream grade	Small	Maintenance required	≤ 1500	<Null>	N/A	<Null>	0	0	1	5	5	0	0	0	11	87
MC-A-1-3	Swart Hill Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	88
MC-CJ-80-69	Clinton Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	89
MC-FL-151-113	Bulls Head Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	90
MC-FL-154-106	Sulpher Springs Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	91
MC-G-110-165	Logtown Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	92
MC-G-114-157	Lusso Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	93
MC-G-114-160	Lusso Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	94
MC-G-117-150	Ingersoll Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	95
MC-MN-65-216	River Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	96
MC-MN-66-215	Sanders Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	97
MC-MN-67-207	Airport Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	98
MC-MN-68-203	Paris Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	99
MC-MN-70-217	Fordsbush Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	100
MC-MN-73-186	Brookmans Corners Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	101
MC-MN-75-180	Salt Springsville Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	102
MC-MN-75-181	Salt Springsville Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	103
MC-MN-75-182	Salt Springsville Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	104
MC-MN-76-175	Starkville Road	OK	Concrete	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	105
MC-MN-76-176	Starkville Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	106
MC-MN-76-354	Starkville Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	107
MC-MN-76-356	Starkville Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	108
MC-P-48-280	Wagners Hollow Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	109
MC-P-48-289	Wagners Hollow Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	110
MC-R-106-318	Anderson Road	OK	Plastic	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	111
MC-R-92-300	Mapletown Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	112
MC-R-93-328	Carlisle Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	113
MC-R-93-329	Carlisle Road	OK	Metal	Free fall	Small	No	≤ 1500	<Null>	N/A	<Null>	0	5	1	0	5	0	0	0	11	114
MC-A-38-27	McDonald Drive	OK	Concrete	At stream grade	Small	No	≤ 4000	<Null>	N/A	<Null>	0	0	1	0	10	0	0	0	11	115
MC-A-40-26	McKay Road	OK	Metal	At stream grade	Small	No	≤ 4000	<Null>	N/A	<Null>	0	0	1	0	10	0	0	0	11	116
MC-CH-104-75	Corbin Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	117
MC-CH-104-83	Corbin Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	118

Montgomery County Culvert Asset Management Plan Prioritization

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MC-CH-131-82	Esperance Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	119
MC-CJ-80-64	Clinton Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	120
MC-CJ-85-60	Dygert Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	121
MC-CJ-94-62	Old Sharon Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	122
MC-G-111-164	Lansing Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	123
MC-MN-68-205	Airport Road	OK	Metal	At stream grade	Small	No	≤ 4000	<Null>	N/A	<Null>	0	0	1	0	10	0	0	0	11	124
MC-MN-74-183	Hessville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	125
MC-MO-28-242	Stoners Trail	OK	Metal	At stream grade	Small	No	≤ 4000	<Null>	N/A	<Null>	0	0	1	0	10	0	0	0	11	126
MC-MO-28-251	Stoners Trail	OK	Metal	At stream grade	Small	No	≤ 4000	<Null>	N/A	<Null>	0	0	1	0	10	0	0	0	11	127
MC-MO-33-232	Hickory Hill Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	128
MC-P-33-275	Hickory Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	129
MC-P-33-276	Hickory Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	130
MC-P-33-277	Hickory Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	131
MC-R-110-313	Logtown Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	132
MC-R-112-325	Argersinger Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	133
MC-R-93-333	Carlisle Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	Yes	0	0	1	0	5	0	0	5	11	134
MC-MO-29-245	Albany Bush Road	OK	Metal	Cascade	None	No	≤ 1500	<Null>	N/A	Yes	0	1	0	0	5	0	0	5	11	135
MC-A-2-6	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	136
MC-CJ-82-51	Cherry Valley Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	137
MC-FL-154-105	Sulpher Springs Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	138
MC-MN-73-194	Freysbush Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	139
MC-MN-76-174	Starkville Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	140
MC-MN-77-171	Indian Trail Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	141
MC-MN-77-172	Indian Trail Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	142
MC-MN-77-173	Indian Trail Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	143
MC-MN-80-169	Clinton Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	144
MC-R-105-323	Currytown Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	145
MC-R-89-294	Latimer Hill Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	100 Year Flood Zone	<Null>	0	0	1	0	5	0	5	0	11	146
MC-CH-126-90	Green Road (South)	OK	Metal	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	147
MC-CH-127-85	Burtonville Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	148
MC-CH-127-87	Burtonville Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	149
MC-CH-130-84	Brand Road	OK	Metal	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	150
MC-CJ-90-61	Maple Hill Road	OK	Metal	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	151
MC-CJ-94-36	Old Sharon Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	152
MC-FL-151-108	Bulls Head Road	OK	Metal	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	153
MC-G-110-141	Logtown Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	154
MC-G-118-145	Fisher Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	155
MC-MN-66-201	Sanders Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	156
MC-MN-68-211	Paris Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	157
MC-MN-73-191	Brookmans Corners Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	158
MC-MN-79-192	Freysbush Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	159
MC-P-41-264	Oswegatchie Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	160
MC-P-48-285	Wagners Hollow Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	161
MC-P-48-290	Wagners Hollow Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	162
MC-P-48-291	Wagners Hollow Road	OK	Concrete	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	163
MC-R-93-305	Carlisle Road	OK	Metal	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	164
MC-R-93-332	Carlisle Road	OK	Metal	At stream grade	Large	No	≤ 1500	<Null>	N/A	<Null>	0	0	5	0	5	0	0	0	10	165
MC-CJ-90-55	Maple Hill Road	OK	Metal	Free fall	None	No	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	166
MC-G-115-351	Borden Road	OK	Metal	Free fall	None	No	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	167
MC-MN-65-223	River Road	OK	Concrete	Free fall	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	168
MC-MN-75-178	Salt Springsville Road	OK	Metal	Free fall	None	No	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	169
MC-MO-30-247	Old Trail Road	OK	Metal	Free fall	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	170
MC-P-42-261	McKinley Road	OK	Concrete	Free fall	None	No	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	171
MC-R-43-324	Dillenback Road	OK	Plastic	Free fall	None	No	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	172
MC-SJ-58-339	Mill Road	OK	Metal	Free fall	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	5	0	0	5	0	0	0	10	173
MC-CH-104-73	Corbin Hill Road	OK	Concrete	At stream grade	None	No	≤ 1500	<Null>	N/A	Yes	0	0	0	0	5	0	0	5	10	174
MC-CJ-94-348	Old Sharon Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	Yes	0	0	0	0	5	0	0	5	10	175
MC-MO-31-255	Switzer Hill Road	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	Yes	0	0	0	0	5	0	0	5	10	176
MC-MN-65-221	River Road	OK	Metal	Free fall onto cascade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	3	0	0	5	0	0	0	8	177

Montgomery County Culvert Asset Management Plan Prioritization

Tighe&Bond

											Culvert Assessment				Hazard Assessment					
Culvert ID	Road	Crossing Condition	Structure Material	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Crossing Condition	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Assset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Total	Ranking
MC-SJ-55-338	Kringsbrush Road	OK	Combination	Free fall onto cascade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	3	0	0	5	0	0	0	8	178
MC-CJ-89-39	Latimer Hill Road	OK	Metal	Cascade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	1	1	0	5	0	0	0	7	179
MC-CJ-94-40	Old Sharon Road	OK	Plastic	Cascade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	1	1	0	5	0	0	0	7	180
MC-FL-152-121	Pattersonville Road	OK	Metal	Cascade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	1	1	0	5	0	0	0	7	181
MC-MO-34-243	Stone Arabia Road	OK	Metal	Cascade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	1	1	0	5	0	0	0	7	182
MC-A-11-29	Hammondtown Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	183
MC-A-20-23	Lepper Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	184
MC-A-20-32	Lepper Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	185
MC-A-21-34	Wilds Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	186
MC-A-2-14	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	187
MC-A-2-16	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	188
MC-A-23-30	Sacandaga Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	189
MC-A-23-35	Sacandaga Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	190
MC-A-2-7	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	191
MC-A-2-9	Cranes Hollow Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	192
MC-A-38-31	McDonald Drive	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	193
MC-CH-104-89	Corbin Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	194
MC-CH-126-92	Green Road (South)	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	195
MC-CH-127-76	Burtonville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	196
MC-CH-127-86	Burtonville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	197
MC-CH-127-98	Burtonville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	198
MC-CH-128-100	Polin Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	199
MC-CH-129-97	Hughes Road	OK	Combination	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	200
MC-CH-129-99	Hughes Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	201
MC-CH-130-88	Brand Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	202
MC-CH-130-93	Brand Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	203
MC-CH-131-79	Esperance Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	204
MC-CH-159-102	Hughes Road Spur	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	205
MC-CJ-80-67	Clinton Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	206
MC-CJ-82-44	Cherry Valley Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	207
MC-CJ-88-41	West Ames Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	208
MC-CJ-91-56	Blaine Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	209
MC-CJ-92-42	Mapletown Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	210
MC-CJ-94-37	Old Sharon Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	211
MC-CJ-94-54	Old Sharon Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	212
MC-CJ-94-58	Carlisle Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	213
MC-CJ-97-68	Heiser Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	214
MC-CJ-97-70	Heiser Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	215
MC-CJ-97-71	Heiser Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	216
MC-FL-140-134	Peck Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	217
MC-FL-140-135	Peck Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	218
MC-FL-142-133	Millers Corners Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	219
MC-FL-142-136	Millers Corners Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	220
MC-FL-142-137	Millers Corners Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	221
MC-FL-142-138	Millers Corners Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	222
MC-FL-143-130	Youngs Corners Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	223
MC-FL-145-122	Fort Hunter Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	224
MC-FL-145-128	Fort Hunter Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	225
MC-FL-145-129	Fort Hunter Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	226
MC-FL-146-124	Snooks Corners Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	227
MC-FL-146-125	Snooks Corners Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	228
MC-FL-149-114	Langley Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	229
MC-FL-151-110	Bulls Head Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	230
MC-FL-152-119	Pattersonville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	231
MC-FL-152-123	Pattersonville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	232
MC-FL-154-104	Sulpher Springs Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	233
MC-FL-154-107	Sulpher Springs Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	234
MC-G-110-140	Logtown Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	235
MC-G-111-142	Lansing Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	236

Montgomery County Culvert Asset Management Plan Prioritization

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											Culvert Assessment				Hazard Assessment					
Culvert ID	Road	Crossing Condition	Structure Material	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Crossing Condition	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Total	Ranking
MC-G-115-154	Borden Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	237
MC-G-115-156	Borden Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	238
MC-G-116-148	Van Epps Road	OK	Combination	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	239
MC-G-116-155	Van Epps Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	240
MC-G-116-158	Van Epps Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	241
MC-G-117-161	Ingersoll Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	242
MC-G-117-162	Ingersoll Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	243
MC-G-118-147	Fisher Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	244
MC-G-120-167	Co-Daugh-Ri-Ty Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	245
MC-G-121-139	Polin Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	246
MC-G-164-152	Noeltner Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	247
MC-G-43-159	Dillenback Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	248
MC-MN-65-357	River Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	249
MC-MN-67-213	Airport Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	250
MC-MN-68-200	Paris Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	251
MC-MN-68-208	Paris Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	252
MC-MN-69-195	Pickle Hill Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	253
MC-MN-69-196	Pickle Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	254
MC-MN-70-219	Fordsbush Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	255
MC-MN-74-188	Hessville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	256
MC-MN-75-184	Salt Springsville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	257
MC-MN-75-185	Salt Springsville Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	258
MC-MN-76-170	Starkville Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	259
MC-MN-76-177	Starkville Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	260
MC-MN-76-179	Starkville Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	261
MC-MN-76-355	Starkville Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	262
MC-MN-79-189	Freysbush Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	263
MC-MN-79-190	Freysbush Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	264
MC-MO-30-235	Old Trail Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	265
MC-MO-30-237	Old Trail Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	266
MC-MO-30-239	Old Trail Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	267
MC-MO-30-240	Old Trail Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	268
MC-MO-30-241	Old Trail Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	269
MC-MO-35-231	Martin Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	270
MC-MO-36-249	Persse Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	271
MC-MO-36-252	Persse Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	272
MC-P-33-274	Hickory Hill Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	273
MC-P-34-281	Stone Arabia Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	274
MC-P-37-288	Indian Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	275
MC-P-43-271	Dillenback Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	276
MC-P-43-272	Dillenback Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	277
MC-P-43-273	Dillenback Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	278
MC-P-44-257	Brower Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	279
MC-P-47-282	Nellis Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	280
MC-P-48-286	Wagners Hollow Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	281
MC-R-102-293	East Lykers Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	282
MC-R-103-296	West Lykers Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	283
MC-R-104-327	Corbin Hill Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	284
MC-R-93-292	Carlisle Road	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	285
MC-R-93-299	Carlisle Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	286
MC-R-93-303	Carlisle Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	287
MC-R-93-308	Carlisle Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	288
MC-R-93-310	Carlisle Road	OK	Plastic	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	289
MC-R-96-309	Hiltop Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	290
MC-R-96-316	Hiltop Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	291
MC-R-98-315	Flat Creek Road	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	292
MC-R-99-295	Lynk Street	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	293
MC-R-99-297	Lynk Street	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	294
MC-R-99-298	Lynk Street	OK	Concrete	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	295

Montgomery County Culvert Asset Management Plan Prioritization

Tighe&Bond

											Culvert Assessment				Hazard Assessment					
Culvert ID	Road	Crossing Condition	Structure Material	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Crossing Condition	Outlet Grade	Tailwater Scour Pool	Action Required	AADT	≤ 2,500 Feet from Mapped Asset	FEMA Flood Zone	≤ 100 Feet from State Regulated Wetland	Total	Ranking
MC-R-99-304	Lynk Street	OK	Metal	At stream grade	Small	No	≤ 1500	<Null>	N/A	<Null>	0	0	1	0	5	0	0	0	6	296
MC-MN-63-347	Mindenville Drive	OK	Plastic	Cascade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	1	0	0	5	0	0	0	6	297
MC-R-96-317	Hiltop Road	OK	Metal	Cascade	None	No	≤ 1500	<Null>	N/A	<Null>	0	1	0	0	5	0	0	0	6	298
MC-SJ-331-344	Crum Creek Road	OK	Metal	Cascade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	1	0	0	5	0	0	0	6	299
MC-A-10-21	Jones Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	300
MC-A-4-17	Belfance Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	301
MC-CJ-91-43	Blaine Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	302
MC-CJ-91-53	Blaine Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	303
MC-CJ-94-38	Old Sharon Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	304
MC-FL-142-132	Millers Corners Road	OK	Concrete	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	305
MC-FL-149-109	Langley Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	306
MC-G-118-144	Fisher Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	307
MC-G-164-166	Noeltner Road	OK	Plastic	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	308
MC-MN-63-225	Mindenville Drive	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	309
MC-MN-63-346	Mindenville Drive	OK	Metal	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	310
MC-MN-65-218	River Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	311
MC-MN-65-220	River Road	OK	Metal	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	312
MC-MN-65-222	River Road	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	313
MC-MN-65-224	River Road	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	314
MC-MN-65-226	River Road	OK	Combination	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	315
MC-MN-66-199	Sanders Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	316
MC-MN-68-209	Paris Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	317
MC-MN-69-197	Pickle Hill Road	OK	Plastic	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	318
MC-MO-30-248	Old Trail Road	OK	Metal	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	319
MC-MO-31-246	Switzer Hill Road	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	320
MC-P-42-259	McKinley Road	OK	Concrete	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	321
MC-P-43-268	Dillenback Road	OK	Concrete	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	322
MC-P-44-260	Brower Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	323
MC-P-45-267	Caswell Road	OK	Metal	At stream grade	None	No	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	324
MC-SJ-53-336	Burwell Road	OK	Metal	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	325
MC-SJ-55-337	Kringsbrush Road	OK	Metal	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	326
MC-SJ-57-341	Crum Creek Road	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	327
MC-SJ-57-342	Crum Creek Road	OK	Metal	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	328
MC-SJ-59-343	Clay Hill Road	OK	Concrete	At stream grade	<Null>	<Null>	≤ 1500	<Null>	N/A	<Null>	0	0	0	0	5	0	0	0	5	329

APPENDIX D FEMA/ NYS DHSES HMP PLAN REVIEW TOOL

Appendix D FEMA/ NYS DHSES HMP Plan Review Tool

Local Mitigation Plan Review Tool

Cover Page

The Local Mitigation Plan Review Tool (PRT) demonstrates how the local mitigation plan meets the regulation in 44 CFR § 201.6 and offers states and FEMA Mitigation Planners an opportunity to provide feedback to the local governments, including special districts.

1. The Multi-Jurisdictional Summary Sheet is a worksheet that is used to document how each jurisdiction met the requirements of the plan elements (Planning Process; Risk Assessment; Mitigation Strategy; Plan Maintenance; Plan Update; and Plan Adoption).
2. The Plan Review Checklist summarizes FEMA's evaluation of whether the plan has addressed all requirements.

For greater clarification of the elements in the Plan Review Checklist, please see Section 4 of this guide. Definitions of the terms and phrases used in the PRT can be found in Appendix E of this guide.

Plan Information	
Jurisdiction(s)	Montgomery County, New York and 20 of its local jurisdictions.
Title of Plan	Montgomery County Multi-Jurisdiction Natural Hazard Mitigation Plan.
New Plan or Update	Update
Single- or Multi-Jurisdiction	Multi Jurisdiction.
Date of Plan	February 7, 2025
Local Point of Contact	
Title	Ken F. Rose, Director
Agency	Montgomery County Business Development Center
Address	113 Park Street, PO Box 277 Fultonville, NY 12072
Phone Number	518-853-8334
Email	krose@co.montgomery.ny.us

Additional Point of Contact	
Title	Click or tap here to enter text.
Agency	Click or tap here to enter text.
Address	Click or tap here to enter text.
Phone Number	Click or tap here to enter text.
Email	Click or tap here to enter text.

Review Information	
State Review	
State Reviewer(s) and Title	Betsy Parmerter, DHSES Hazard Mitigation Contractor Elizabeth O'Reilly, Hazard Mitigation Planner Michael Tarasoff, Hazard Mitigation Planner Scott Feuerstein, Hazard Mitigation Planner Kevin Clapp, Supervisor - Hazard Mitigation Planning
State Review Date	April 7, 2025
FEMA Review	
FEMA Reviewer(s) and Title	Paul Hoole, Mitigation Planner.
Date Received in FEMA Region	April 7, 2025.
Plan Not Approved	Click or tap to enter a date.
Plan Approvable Pending Adoption	April 15, 2025
Plan Approved	May 22, 2025

Multi-Jurisdictional Summary Sheet

#	Jurisdiction Name	Requirements Met (Y/N)						
		A. Planning Process	B. Risk Assessment	C. Mitigation Strategy	D. Plan Maintenance	E. Plan Update	F. Plan Adoption	G. State Requirements
1	City of Amsterdam	Y	Y	Y	Y	Y	Y	
2	Town of Amsterdam	Y	Y	Y	Y	Y	**Y**	
3	Town of Canajoharie	Y	Y	Y	Y	Y	**Y**	
4	Town of Charleston	Y	Y	Y	Y	Y	**Y**	
5	Town of Florida	Y	Y	Y	Y	Y	**Y**	
6	Town of Glen	Y	Y	Y	Y	Y	**Y**	
7	Town of Minden	Y	Y	Y	Y	Y	**Y**	
8	Town of Mohawk	Y	Y	Y	Y	Y	**Y**	
9	Town of Palatine	Y	Y	Y	Y	Y	**Y**	
10	Town of Root	Y	Y	Y	Y	Y	**Y**	
11	Town of St. Johnsville	Y	Y	Y	Y	Y	**Y**	
12	Village of Ames	Y	Y	Y	Y	Y	**Y**	
13	Village of Canajoharie	Y	Y	Y	Y	Y	**Y**	
14	Village of Fonda	Y	Y	Y	Y	Y	**Y**	
15	Village of Fort Plain	Y	Y	Y	Y	Y	**Y**	
16	Village of Fultonville	Y	Y	Y	Y	Y	**Y**	
17	Village of Hagaman	Y	Y	Y	Y	Y	**Y**	
18	Village of Nelliston	Y	Y	Y	Y	Y	**Y**	
19	Village of Palatine Bridge	Y	Y	Y	Y	Y	**Y**	
20	Village of St. Johnsville	Y	Y	Y	Y	Y	**Y**	
21	Montgomery County	Y	Y	Y	Y	Y	**Y**	

Plan Review Checklist

The Plan Review Checklist is completed by FEMA. States and local governments are encouraged, but not required, to use the PRT as a checklist to ensure all requirements have been met prior to submitting the plan for review and approval. The purpose of the checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been "met" or "not met." FEMA completes the "required revisions" summary at the bottom of each element to clearly explain the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is "not met." Sub-elements in each summary should be referenced using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each element and sub-element are described in detail in Section 4: Local Plan Requirements of this guide.

Plan updates must include information from the current planning process.

If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that.

Multi-jurisdictional elements must cover information unique to all participating jurisdictions.

Element A: Planning Process

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))		
A1-a. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan's development, as well as who was involved?	Section 2.1 Page 2-2	Met
A1-b. Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?	Section 2.1, 2.3 and Table 2.5 pages 2-1 to 2-8	Met
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))		
A2-a. Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?	Section 2.4.1 and Table 2.4, page 2-5 and Appendix B.	Met

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))		
A3-a. Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?	Section 2.4.2 page 2-6 and Table 2.5 page 2-8	Met
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))		
A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?	Appendix A, Bibliography and Section 7.2 page 7.2	Met
ELEMENT A REQUIRED REVISIONS		
Required Revision: None		

Element B: Risk Assessment

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))		
B1-a. Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?	Section 4.1.2 and Table 4-1 page 4-2	Met
B1-b. Does the plan include information on the location of each identified hazard?	See Section 4.2 starting on Page 4-6 to page 4-63	Met
B1-c. Does the plan describe the extent for each identified hazard?	See Section 4.2 starting on Page 4-6 to page 4-63	Met
Element B Requirements	**Location in Plan (section and/or page number)**	**Met / Not Met**
B1-d. Does the plan include the history of previous hazard events for each identified hazard?	See Section 4.2 starting on Page 4-6 to page 4-63	Met
B1-e. Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?	See Section 4.2 starting on Page 4-6 to page 4-63	Met
B1-f. For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?	For Each Annex see Section 2.1 Natural Hazard Events History Specific to the Municipality	Met
B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))		

B2-a. Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?	For each Annex see Section 2 Natural Hazard Risk and Vulnerability Assessment	Met
B2-b. For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?	For each Annex see Section 2.5 Vulnerability Asset: Exposure Analysis	Met
B2-c. Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?	See Section 4.3.1.4 and Section 8.4 on page 8-19 for each annex see Section 2.4 Repetitive Loss and Severe Repetitive Loss Properties, and Section 4.2 NFIP participation and Compliance Table 7 and 4.2.1 Improvement Opportunities	Met

ELEMENT B REQUIRED REVISIONS
Required Revision: None

Element C: Mitigation Strategy

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C1. Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))		
C1-a. Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?	Section 7 in its entirety, Section 7.4.3 Page 7-8 and Tables 7-3, 7-4, 7-5, and 7-6, and Section 7.6 on Page 7-26 For each annex, this information is included in Section 4 Capabilities	Met
C1-b. Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?	For each annex, this information is included in Section 4 Capabilities.	Met
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C2-a. Does the plan contain a narrative description or a table/list of their participation activities?	Section 7.5 Page 7-23 and Table 7-7 on Page 7-25	Met
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))		
C3-a. Does the plan include goals to reduce the risk from the hazards identified in the plan?	See Section 8.1.1, Page 8.1	Met
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?	See Section 8.2 Page 8-4 to 8.19	Met
C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?	For each annex, this information is included in Section 5 Mitigation Strategy	Met

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))		
C5-a. Does the plan describe the criteria used for prioritizing actions?	See Section 8.2 Page 8-10 to 8.11	Met
C5-b. Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?	See Table 8.3 Page 8-12 to 8-17. Also, for each Annex, See Table 9 Updated Mitigation Actions	Met
ELEMENT C REQUIRED REVISIONS		
Required Revision: None		

Element D: Plan Maintenance

Element D Requirements	Location in Plan (section and/or page number)	Met / Not Met
D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))		
D1-a. Does the plan describe how communities will continue to seek future public participation after the plan has been approved?	See Section 2.4.3 and Section 9.6	Met
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))		
D2-a. Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?	See Section 9.2.1	Met
D2-b. Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.	See Section 9.2.	Met
D2-c. Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?	See Section 9.2.3.	Met
D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))		
D3-a. Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?	See Section 1.3 and Section 9.2.4	Met
D3-b. Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?	See Section 9.5, Section 7 9.and for each annex plan see Section 5	Met
D3-c. For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?	See Section 5 for each annex plan	Met
ELEMENT D REQUIRED REVISIONS		
Required Revision: None		

Element E: Plan Update

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))		
E1-a. Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved?	Section 5.1 on page 5-2 including Land use trends, and Anticipated Future Development. Including Table 5-3 Areas slated for development within 10 years	Met
E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))		
E2-a. Does the plan describe how it was revised due to changes in community priorities?	Section 8.5 Page 8-19	Met

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?	Section 8 Page 8-4 and Table 8.1 on Page 8-5	Met
E2-c. Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?	For each Annex see Section 5	Met
ELEMENT E REQUIRED REVISIONS		
Required Revision: None		

Element F: Plan Adoption

Element F Requirements	Location in Plan (section and/or page number)	Met / Not Met
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		

F1-a. Does the participant include documentation of adoption?	N/A	Choose an item.
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F2-a. Did each participant adopt the plan and provide documentation of that adoption?	See Section 10.3. Will be included in front of plan.	Met
ELEMENT F REQUIRED REVISIONS		
Required Revision: None		

Element G: High Hazard Potential Dams (Optional)

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and technical information for HHPDs?		
HHPD1-a. Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?	Click or tap here to enter text.	Not Met
HHPD1-b. Does the plan incorporate information shared by the state and/or local dam owners?	Click or tap here to enter text.	Not Met
HHPD2. Did the plan address HHPDs in the risk assessment?		
HHPD2-a. Does the plan describe the risks and vulnerabilities to and from HHPDs?	Click or tap here to enter text.	Not Met
HHPD2-b. Does the plan document the limitations and describe how to address deficiencies?	Click or tap here to enter text.	Not
HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?		
HHPD3-a. Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?	Click or tap here to enter text.	Met.

HHPD3-b. Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?	Click or tap here to enter text.	Not Met
HHPD4-a. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?		
HHPD4-a. Does the plan describe specific actions to address HHPDs?	Click or tap here to enter text.	Not Met
HHPD4-b. Does the plan describe the criteria used to prioritize actions related to HHPDs?	Click or tap here to enter text.	Not Met
HHPD4-c. Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs?	Click or tap here to enter text.	Not Met

HHPD Requirements	**Location in Plan (section and/or page number)**	**Met / Not Met**
HHPD Required Revisions		
Required Revision: None because the plan did not seek to meet the optional HHPD enhanced requirements.		

Element H: Additional State Requirements (Optional)

Not reviewed by FEMA

Element H Requirements	**Location in Plan (section and/or page number)**	**Met / Not Met**
H1. Do jurisdictions identify critical facilities, assess vulnerabilities and ensure protection to a 0.02% chance event or worst-case scenario?		
H1-a. Does the plan document the name of facility, type of facility, jurisdictional location, and exposure to a 1% (100-year) and 0.02% chance event?	Yes, see Section 2.3 in each annex Table 3 and Section 3 Problem statements for discussion on vulnerable community assets	Met

H1-b. Does the plan document those critical facilities are protected to a 0.02% flood event, or previous worst case flood event?	Yes, see Section 2.3 in each annex Table 3 and Section 3 Problem statements for discussion on vulnerable community assets	Met
H1-c. For those that do not meet this level of protection (0.02%), the plan must include an action to meet or go beyond this criterion or explain why it is not feasible to do so.	Section 5 in each annex Table 8 and 9, mitigation actions.	Met
H2. Does the plan include an annex for every jurisdiction within the County's boundaries, including the County?		
H2-a. Is there an annex for each jurisdiction seeking FEMA approval within County's boundaries, including the County?	Yes	Met
H2-b. Does the plan include a table in the introduction section clearly identifying all jurisdictions which are seeking FEMA approval?	Yes.	Met

H3. Within each jurisdictional annex, are projects developed in accordance with the NYS DHSES Proposed Projects Table?		
H3-a. Does the plan include a minimum of two (2) new or carryover (not started) proposed mitigation actions that include all information requested in the NYS DHSES LHMP Proposed Action spreadsheet?	Yes, See Section 5 in each annex	Met
H3-b. For jurisdictions containing an SFHA, one (1) of these actions must be for a project that addresses flooding.	Yes, See Section 5 in each annex	Met
H4. Was the draft plan posted for public comment?		
H4-a. Was the draft plan posted in full (except for discretionary sensitive information) for 30 days for public comment or the time prescribed by local law, whichever is greater.	The plan was posted for public comments on March 26, 2024	Met

H4-b. Is a description included of the efforts to gain feedback from underserved areas where residents may not have computer or internet access?	Section 2.4.1 , 2.4.2 Stakeholder Outreach and Appendix B Guidance Document	Met
H4-c. Does the website clearly identify how the public can comment on the plan and include either specific contact information to send comments or a user-friendly form or survey?	Yes, Website included specific contact information See Appendix B Public Outreach – Public Notices	Met
Element H Required Revisions		
Required Revision:		

Plan Assessment

These comments can be used to help guide your annual/regularly scheduled updates and the next plan update.

Element A. Planning Process

Strengths

-

Opportunities for Improvement

- A2-a: The Montgomery County HMP, section 2.4.1, Table 2-4, page 2-5 lists general categories of stakeholders invited to participate in the HMP update process. A few examples include "Community Lifeline Employers," "Agencies and Institutions," and "School Districts." The HMP can be improved if the persons and agencies invited to participate were more specifically identified in Table 2-4. Also, the column in Table 2-4 that is designated to identify the means for which the invitation was extended is often left blank. The HMP can be improved if the blank table cells were filled in.

- A3-a: The Montgomery County HMP repeatedly states public feed-back received was incorporated into the HMP as appropriate. The HMP can be improved if a few specific examples were provided that describe how public feedback was used to modify and update the HMP.
- A4-a: The series of maps that begin on appendix page 270, as well as each annex map of risks, references a secondary GIS source rather than the primary, original FIRM retrieved from the FEMA Map Service Center. The legend or accompanying narrative of each annex map should identify the original source and year of data presented in the map so that it is clear whether the regulatory FIRMs or the Preliminary FIRMS are displayed in the maps.

Element B. Risk Assessment

Strengths

- B1-f: The annexes generally do a very good job describing local history and unique risks facing each jurisdiction. The stories presented in the annexes are enjoyable to read and compelling.
- B2-a/B2-b: Montgomery County jurisdictions place a priority on the preservation and protection of historic sites and identify 32 historic sites dispersed throughout the county. (HMP pages, 44, 97, 161. Tables 5-5 page 99, Table 5-8 page 104, Table 5-12 page 110, Table 6.6 page 128, Table 6.7 page 130). All annexes include a Table 4 that cites the number of at-risk properties and historic assets vulnerable to each hazard type.

Opportunities for Improvement

- B1-f: The HMP and annexes report high vacancy rates for many jurisdictions within Montgomery County. In particular, the Towns of Minden, Mohawk, and Village of Ames that have significantly high residential vacancy and poverty rates also report issues with private wells that are vulnerable during periods of drought (HMP pages, 453, 477, 567-568). The annexes can be improved if they discussed whether there is a correlation or connection between the high residential vacancy rates, poverty rates, and failing private wells most vulnerable during periods of drought.

- The Towns of Minden, Mohawk, and Village of Ames have unique vulnerabilities because they lack public water and residents nearly exclusively rely on private wells, (HMP annex pages 60, 453, 477). Although drought conditions in 2016 and 2017 left many residents without potable water and forced many to dig new wells, the Village of Ames and Towns of Minden and Mohawk do not discuss

or quantify the potential future impact of drought on residents and socially vulnerable and under-represented population groups.

Element C. Mitigation Strategy

Strengths

- Each annex includes a table of NFIP participant activities that is well organized and easy to review.

Opportunities for Improvement

- C4-a: Each annex can be improved if, in addition to heating and cooling centers at municipal or senior facilities, the HMP and annexes considered a broader range of alternative types of solutions to mitigate vulnerabilities and risks associated to extreme temperatures. This could demonstrate a broad range of solutions for extreme temperatures have been considered and strengthen the HMP and annexes.
    - All Montgomery County annexes recently propose an action to install generators at facilities that can serve as heating and cooling centers. The HM strategy, goals, and objectives have not been updated to directly support the establishment of emergency shelters and heating and cooling centers. The HMP Volume 1, Section 8 "Mitigation Strategy" can be improved if the strategy, goals and objectives were updated to complement the shifting emphasis towards heating and cooling centers and the protection of persons and seniors most vulnerable to extreme temperatures. Also, HMP Volume 1, "Executive Summary" that describes how the HMP has changed since the last version should be updated to summarize these shifting priorities.

- C4-b: Annexes currently propose an action to install a backup generator in an emergency shelter or other municipal facility, which can also serve as a "heating and cooling center as needed." Comments to establish heating and cooling centers are currently presented as a brief side-comment within the action to install backup generators. Each annex/mitigation spreadsheet can be improved if proposed actions to establish heating and cooling centers were presented separately, as specific dedicated action.

- Each Annex intends to develop a post disaster substantial damage plan. These plans will benefit by the County seeking Substantial Damage training from the NYSDEC.

- The Plan includes a range of mitigation actions. The plan would be improved if a range of mitigation actions was considered for each vulnerability being mitigated. A team from each jurisdiction could brainstorm their options and weigh them against criteria they choose, before selecting the best option to pursue as a mitigation action.

Element D. Plan Maintenance

Strengths

-

Opportunities for Improvement

-

Element E. Plan Update

Strengths

-

Opportunities for Improvement

- E1-a: Numerous jurisdictions report surprisingly high housing vacancy rates, (see page references presented in E1-a required comments and B1-f suggested comments for HMP improvement). The most significant vacancy rates are reported in the Villages of Fort Plain, Ames, Fonda, Minden and the City of Amsterdam with rates of 32%, 35%, and 22% respectively. These vacancy rates are reported without explanation. The HMP and annexes can be improved if circumstances that put high vacancy rates into perspective were added to the HMP or annexes. As a suggestion, helpful information that could potentially be added includes:
  - A table comparison of vacancy rates over several decades to show trends.
  - An explanation of potential causes of the increasing vacancy rates.
  - A correlation of vacancy rates to community income, employment status, poverty rates, and substandard housing conditions.
  - A discussion of issues related to housing vacancy and sub-standard compliance to building codes.
  - A map that displays vacant units in proximity to areas of repeated flooding.

  Any inabilities to report this information could be added as a mitigation action item or as an opportunity to collaborate with other agencies that follow these issues.

Element G. HHPD Requirements (Optional)

Strengths

-

Opportunities for Improvement

-

Element H. Additional State Requirements (Optional)

Strengths

-

Opportunities for Improvement

-

Technical Issues

-

APPENDIX E RISK ASSESSMENT GRAPHICS

Appendix E Risk Assessment Graphics

FIGURE 2
STREAM CROSSINGS
WEST - PRIORITY

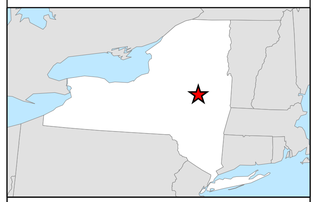
LEGEND

- County Stream Crossing
- Stream Crossing
- Top 20 Prioritized Stream Crossings as Ranked by Tighe & Bond
- Railroad
- Streets
- Stream / River
- Water
- 100-Year Flood Zone
- 500-Year Flood Zone
- Area With Reduced Risk Due to Levee
- Village Boundary
- Town Boundary
- County Boundary

Planning Area
- West

SERVICES PROVIDED IN NEW YORK BY TIGHE & BOND ENGINEERING AND LANDSCAPE ARCHITECTURE, P.C.

LOCUS MAP



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NOTES

Data source: New York State Geographic Information Systems (GIS) Clearinghouse, FEMA, USDA NRCS, USFWS, NAACC.

Data valid as of May 2023.

Montgomery County
New York

May 2023

Tighe&Bond

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M-5104

FIGURE 2
STREAM CROSSINGS CENTRAL - PRIORITY

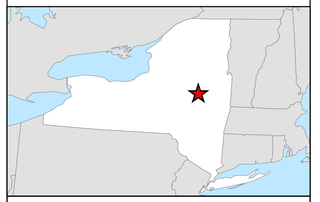
LEGEND

- County Stream Crossing
- Stream Crossing
- Top 20 Prioritized Stream Crossings as Ranked by Tighe & Bond
- Railroad
- Streets
- Stream / River
- Water
- 100-Year Flood Zone
- 500-Year Flood Zone
- Area With Reduced Risk Due to Levee
- Village Boundary
- Town Boundary
- County Boundary

Planning Area
- Central

SERVICES PROVIDED IN NEW YORK BY TIGHE & BOND ENGINEERING AND LANDSCAPE ARCHITECTURE, P.C.

LOCUS MAP



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NOTES

Data source: New York State Geographic Information Systems (GIS) Clearinghouse, FEMA, USDA NRCS, USFWS, NAACC.

Data valid as of May 2023.

Montgomery County
New York

May 2023

Tighe&Bond

FIGURE 2
STREAM CROSSINGS
EAST - PRIORITY

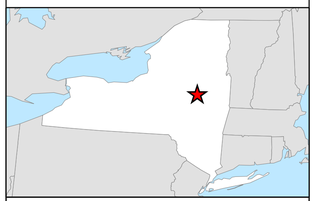
LEGEND

- County Stream Crossing
- Stream Crossing
- Top 20 Prioritized Stream Crossings as Ranked by Tighe & Bond
- Railroad
- Streets
- Stream / River
- Water
- 100-Year Flood Zone
- 500-Year Flood Zone
- Area With Reduced Risk Due to Levee
- Village Boundary
- Town Boundary
- County Boundary

Planning Area
- East

SERVICES PROVIDED IN NEW YORK BY TIGHE & BOND ENGINEERING AND LANDSCAPE ARCHITECTURE, P.C.

LOCUS MAP



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NOTES

Data source: New York State Geographic Information Systems (GIS) Clearinghouse, FEMA, USDA NRCS, USFWS, NAACC.

Data valid as of May 2023.

Montgomery County
New York

May 2023

Tighe&Bond

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