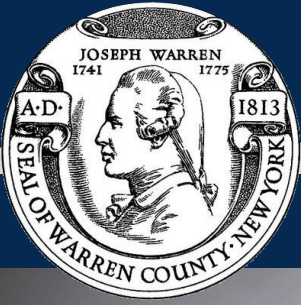


# HAZARD MITIGATION PLAN

Warren County, New York



## APPENDICES



2023



Prepared By:  
Tetra Tech, Inc.  
6 Century Drive, Suite 300  
Parsippany, NJ 07054



## APPENDIX A. ADOPTION RESOLUTIONS

The Warren County and municipal adoption resolutions will be included in this appendix upon receipt of the Federal Emergency Management Agency (FEMA) Approval Pending Adoption (APA) status. Please refer to Section 8 (Planning Partnership) for additional information on plan adoption procedures.

This appendix also includes an example resolution to be submitted by Warren County and participating jurisdictions authorizing adoption of the Warren County Hazard Mitigation Plan Update.



RESOLUTION NO. XXXX-XX  
A RESOLUTION OF THE **Governing Body** OF THE **Jurisdiction Name**  
AUTHORIZING THE ADOPTION OF THE  
2023 WARREN COUNTY, NY  
HAZARD MITIGATION PLAN UPDATE

WHEREAS the **(local governing body)** recognizes the threat that natural hazards pose to people and property within **(local government)**; and

WHEREAS the **(local government)** has prepared a multi-hazard mitigation plan, hereby known as the 2023 Warren County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2023 Warren County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in **(local community)** from the impacts of future hazards and disasters; and

WHEREAS adoption by the **(local governing body)** demonstrates their commitment to hazard mitigation and achieving the goals outlined in the (title and date of mitigation plan).

NOW THEREFORE, BE IT RESOLVED BY THE **(LOCAL COMMUNITY), (STATE)**, THAT:

In accordance with **(local rule for adopting resolutions)**, the **(local governing body)** adopts the 2023 Warren County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

ADOPTED by a vote of \_\_\_\_ in favor and \_\_\_\_ against, and \_\_\_\_ abstaining, this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_.

By: \_\_\_\_\_

(print name)

ATTEST: By: \_\_\_\_\_

(print name)

APPROVED AS TO FORM: By: \_\_\_\_\_

(print name)

ABSTAIN: \_\_\_\_\_

Mayor, **City/Town/Village** of \_\_\_\_\_

ATTEST: \_\_\_\_\_

Clerk, **City/Town/Village** of \_\_\_\_\_



# PARTICIPATION MATRIX

Appendix B includes the participation matrix for meetings convened during the development of the Warren County Hazard Mitigation Plan Update.





Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Tammie DeLorenzo	Assistant to the County Administrator	Warren County Administrators Office	X	X		X	X			X				X		
Aaron Frankendorf	Staff Director. Adirondack/Glens Falls Transportation Council	ADK Glens Falls Transportation Council	X	X			X				X					
Sara Frankendorf	GIS Coordinator	Warren County	X	X			X			X	X		X			
Ethan Gaddy	WC Planner/Climate Smart	Warren County Planning Department	X	X			X		X	X	X			X		
Kevin Hajos	Superintendent	Warren County Department of Public Works	X	X											X	X
Sandy LeBarron	Director of Environmental Health and Safety	Finch Paper	X	X						X			X			X
Jim Lieberum, CPESC	District Manager/County Hazard Mitigation Coordinator	Warren County Soil and Water Conservation District (WCSWCD)	X	X		X	X	X	X	X	X	X	X	X	X	X
Ann Marie Mason	Director/Emergency Manager	Warren County	X	X		X	X	X	X		X		X	X		X



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Ashley Rivers	Emergency Services Coordinator	Warren County	X	X		X		X			X		X			X
Scott Royale	Sustainability Coordinator	SUNY	X	X												
Laura Stebbins	Director of Emergency Preparedness	Glens Falls Hospital	X	X			X	X	X				X	X		X
Bob Bradshaw	Managing Partner	Contingency Management Consulting Group			X	X										
Jennifer Ramsey	Public Safety Committee	Warren County		X		X			X		X					
John Gibb	Emergency Management	Contingency Management Consulting Group				X					X		X	X		X
Joshua Westfall, AICP	Planner	Bolton, Town		X				X	X			X			X	
Cheryl Bolton	Planning and Zoning Secretary	Bolton, Town													X	
Matt Coon	Dep. Highway Superintendent	Bolton, Town													X	
Marion Eagan	Deputy Supervisor	Chester, Town		X								X		X	X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Larry Turcotte	Councilman	Chester, Town		X												
Marion Eagan	Planning and Zoning	Chester, Town		X				X								
Jeremy Little	Zoning Administrator	Chester, Town		X				X							X	
Jessica Leerkes	Engineer	Chester, Town		X								X		X	X	
Craig Leggett	Supervisor	Chester, Town													X	
Mindy Conway	Town Clerk	Chester, Town		X										X		
James P. Schrammel	Fire Chief	City of Glens Falls	X	X						X						
Kris Vanderzee	Code Enforcement Officer	Glens Falls, City		X	X											
William Norton	Superintendent, Water & Sewer	Glens Falls, City		X				X	X			X				
Sheila Mender	Engineering Department	Glens Falls, City		X										X	X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Justin Reckner	Code Enforcement Officer, Building & Codes	Glens Falls, City													X	
Philip Cancelliere	Building Inspector	Glens Falls, City													X	
Edna A. Frasier	Town Supervisor	Hague, Town		X										X	X	
Matther Coffin	Deputy Highway Superintendent	Hague, Town		X												
Matthew Magee	Zoning Administrator	Hague, Town		X											X	
Cathy Clark	Zoning Enforcement Officer	Hague, Town		X										X	X	
Tim Fiallo	Highway Clerk	Hague, Town													X	
Michael N. Geraci	Supervisor	Horicon, Town		X				X	X			X		X	X	
Darian Granger	Highway Superintendent	Horicon, Town		X								X			X	
Matthew Magee	Zoning Administrator	Horicon, Town													X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Danae Tucker	Bookkeeper	Johnsburg, Town		X				X	X					X	X	
Fred Comstock	Highway Superintendent	Johnsburg, Town		X				X							X	
Mike Dunkley	Deputy Highway Superintendent	Johnsburg, Town		X				X				X			X	
Ernie Dunkley	Safety Officer	Johnsburg, Town		X				X				X		X	X	
Colin Mangan	Zoning Enforcement Officer	Johnsburg, Town													X	
Dan Barusch	Village and Town of George Planner	Village and Town of Lake George	X	X			X		X		X	X	X	X	X	
Rob Lanfear	Highway Department	Lake George, Town/Village		X				X						X	X	
Keith Lanfear	Superintendent Public Works	Lake George, Town/Village		X				X	X			X			X	
Doug Frost	Code Enforcement Officer	Lake George, Town													X	
Robert Blais	Mayor	Lake George, Village		X											X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
John Helms	DPW Foreman	Lake George, Village		X											X	
Eugene J. Merlino	Town Supervisor	Lake Luzerne, Town		X				X	X						X	
Ronnie Deuel	Highway Superintendent	Lake Luzerne, Town		X											X	
Karen Putney	Zoning Officer	Lake Luzerne, Town		X				X	X			X		X	X	
Khristopher Kassay	Deputy Zoning Enforcement Officer	Lake Luzerne, Town		X							X			X	X	
Frank E. Thomas	Supervisor	Stony Creek, Town		X					X			X			X	
Ed Lowell, Jr.	Councilman	Stony Creek, Town		X												
Deb Runyon	Supervisor	Thurman, Town		X				X	X			X			X	
Patrick Wood	Highway Superintendent	Thurman, Town		X												
James S. Hull	Code Enforcement Officer	Warrensburg, Town		X				X				X		X	X	





Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Kevin B. Geraghty	Town Supervisor	Warrensburg, Town		X												
Patti Corlew	Floodplain Administrator	Warrensburg, Town													X	
John Strough	Supervisor	Queensbury, Town		X					X			X		X		
Laura Moore	Planner	Queensbury, Town	X	X			X			X	X		X	X		X
John O'Brien	Director of Building and Code Enforcement	Queensbury, Town		X				X								
Mike Palmer	Fire Marshal	Queensbury, Town		X				X								
Laura Moore	Planning and Zoning	Queensbury, Town		X				X				X				X
Dave Duell	Highway Superintendent	Queensbury, Town		X				X	X			X				
Mark DeMers	Deputy Highway Superintendent	Queensbury, Town		X								X				
Don Lehman	Public Information Officer	Warren County			X					X			X	X		



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Elizabeth O'Reilly	Planning Manager	NYSDHSES	X		X		X	X	X					X		X
Shannon Clarke	Planner	NYSDHSES	X		X		X									
Shelby Meyers	Planner	NYSDHSES	X		X		X	X								
Betsy Parmerter	Planner	NYSDHSES			X									X		
Kevin Clapp	Planner	NYSDHSES			X									X		
Roland Paperman	Planner	NYSDHSES			x									X		
John Wilkerson	Planner	NYSDHSES			X									X		
Paul Hoole	Mitigation Planner	FEMA			X		X	X	X					X		



## APPENDIX C. MEETING DOCUMENTATION

Appendix C includes meeting agendas, sign-in sheets, and minutes (where applicable and available) for meetings convened during the development of the Warren County Hazard Mitigation Plan Update.

**WARREN COUNTY HAZARD MITIGATION PLAN - 2023 UPDATE**  
**Project Management Team Meeting – Agenda**  
**9/9/2022 at 10:00 am**



- Scope and Schedule
  - Brief review of our approved proposal
  - Grand performance period (copy of Grant Agreement)
  - Project schedule
- Municipal Participation – Letters of Intent to Participate
  - Email to all municipal coordinators (Email and LOIP template)
  - Identify any group meetings to leverage for the mitigation planning process
- Review Steering Committee Composition - refer to 2011 Steering Committee members
- Information and Data Collection
  - GIS Point of Contact for spatial data
    - Previous (2017) critical facility list – PCII data
      - Arrange GIS collection meeting
      - Data Wish List
    - Lifelines – FEMA incorporating into mitigation
    - NFIP data request
    - CAV dates and list of floodplain administrators
    - CEPA
  - Point of Contact for reviewing Public Information (brochure/surveys/announcements)
    - Draft content for website update, newsletter, social media content, and public meeting announcements
- Meeting Logistics
  - Schedule first Steering Committee meeting
  - Schedule HMP Kick-Off (public?)
    - Date and Location
- Hazard of Concern Identification
- Plan Style Guide
- Communications Guide
- In-Kind Tracking
  - County can begin tracking all time with the development of RFP, reviews, meetings, this call etc.
  - Tetra Tech to track meeting attendance for all participants

Documents:

Municipal Letter of Participation Request

Project Schedule

Data Wish List

In-Kind Tracker

NFIP Request Letter/ISAA



**WARREN COUNTY HAZARD MITIGATION PLAN - 2023 UPDATE**  
**Project Management Team Meeting – Agenda**  
**9/16/2022 at 2:00 pm**



Attendees: Ashley Rivers, Ann Marie Mason, Jim Lieberum, Bob Bradshaw, Jennifer Ramsey, John Gibb, Tammy Delorenzo

- Scope and Schedule
  - Brief review of our approved proposal
  - Grand performance period (copy of Grant Agreement) PoP ending 12/2024.
  - Project schedule-hold for input from the state.
  - Project reporting milestones submitted to NYSDHSES: March 2023; T Bolton, and County Public Works have pending funding-must confirm funding mechanisms-County to with DHSES on the status and timing re: need for an approved HMP.
- Municipal Participation – Letters of Intent to Participate
  - Email to all 13 municipal coordinators (Email and LOIP template)-COMPLETE. Tt to create OneDrive to share information. Jim to post.
  - Identify any group meetings to leverage for the mitigation planning process. LEPC-October (10/21) and quarterly, board of supervisors monthly (and invite mayors?), subcommittee on environmental concerns, kick-off right after board of supervisor's meeting (in-person or hybrid?).
- Review Steering Committee Composition - refer to 2011 Steering Committee members
  - In 2011-six persons, 2 County, Town of Queensbury, City of Glens Falls fire chief.+, LEPC has reps from hospital and Finch  
Major businesses: Hospital, Price Chopper, Finch, Lake George Land Conservancy, Lake George Association; Champlain Watershed Improvement Coalition of NY (CWICNY); Upper Hudson River Watershed Coalition. Agency for SVAs, Tt to provide crosswalk and old SC and suggestions for new committee.
- Core working group: meet bi-weekly-half hour on Wednesdays, 9 am on 9/21, 9/28 and bi-weekly thereafter.
- Information and Data Collection
  - GIS Point of Contact for spatial data-Sarah Frankenfeld to provide GIS files. Last plan redacted municipal water supply; high hazard dam element for HMP has been approved. County to send to us.
    - Previous (2017) critical facility list – PCII data
      - Arrange GIS collection meeting
      - Data Wish List
    - Lifelines – FEMA incorporating into mitigation
    - NFIP data request-Tt to send email request for data to Ann.
    - CAV dates and list of floodplain administrators. Tt to send request email to Ann.
    - CEPA-County to provide CEPA
  - Point of Contact for reviewing Public Information (brochure/surveys/announcements)
    - Draft content for website update, newsletter, social media content, and public meeting announcements Tt to provide social media info and brochure for outreach. Don Lehman (public info officer and director of Public Affairs) to review and provide branding.



**WARREN COUNTY HAZARD MITIGATION PLAN - 2023 UPDATE**  
**Project Management Team Meeting – Agenda**  
**9/16/2022 at 2:00 pm**



- 
- Meeting Logistics-[discuss next week](#).
    - Schedule first Steering Committee meeting
    - Schedule HMP Kick-Off (public?)
      - Date and Location
  - Hazard of Concern Identification- [Tt to send survey prior to SC Kick-Off](#)
  - Plan Style Guide – [ask Don](#)
  - Communications Guide – [copy John Gibb in meetings](#).
  - In-Kind Tracking-[Jim tracking in-kind](#)
    - County can begin tracking all time with the development of RFP, reviews, meetings, this call etc.
    - Tetra Tech to track meeting attendance for all participants

Documents:

Municipal Letter of Participation Request

Project Schedule

Data Wish List

In-Kind Tracker

NFIP Request Letter/ISAA







**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #1 – AGENDA**  
**MEETING DATE/TIME: October 27, 2022 – 9:00 am**



Remote – MS Teams Link [Click here to join the meeting](#) (preferred for screen sharing)

Remote – Dial-in by phone (audio only) - [+1 518-300-1367,,453227155#](#) United States, Albany; Phone Conference ID: 453 227 155#

- 1. Welcome and Introductions**
- 2. Hazard Mitigation Plan Overview**
- 3. Project Organization**
- 4. Steering Committee Composition and Ground Rules**
- 5. In-Kind Services Tracking**
- 6. Planning Process and Data Collection Status**
- 7. Hazards of Concern Identification**
- 8. Critical Facilities and Lifelines**
- 9. Mission Statement, Goals, and Objectives**
- 10. Conclusion and Next Steps**



# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Hybrid In-person and Teleconference Teams Meeting
Date of Meeting:	October 27, 2022, 9:00 am – 10:15 am

## Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ethan Gaddy	Warren County Planning Department, CSC
Aaron Frankenfeld	ADK Glens Falls Transportation Council, Director
Tammie DeLorenzo	Warren County Administrators Office
Ann Marie Mason	Warren County, Director of Emergency Services
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Dan Barusch	Town/Village Lake George, Planner
Elizabeth O'Reilly	NYSDHSES, Planning Manager
Shannon Clarke	NYSDHSES, Planner
Shelby Meyers	NYSDHSES, Planner
Paul Hoole	FEMA, Mitigation Planning
Cynthia Addonizio-Bianco	Tetra Tech
Erika Corsi	Tetra Tech

## Agenda Summary:

Item No.	Description	Action item(s):
1	<b>Welcome and Opening Remarks</b> <ul style="list-style-type: none"> <li>Meeting started at 9:05 pm</li> <li>Jim Lieberum, Director of Warren County Soil and Water Conservation District gave opening remarks providing an overview of the importance of this planning process and thanking the participants for agreeing to serve on the Steering Committee.</li> <li>Cynthia Addonizio-Bianco, project manager from Tetra Tech (Tt), also thanked participants.</li> <li>Elizabeth O'Reilly of NYSDHSES noted that hazard mitigation is a diverse subject and can cross the line between recovery and response. The purpose of the mitigation plan is to reduce the amount of response potentially necessary against natural hazards. She indicated that NYSDHSES will provide support as needed throughout the mitigation planning process.</li> <li>Each participating member introduced themselves and provided input on their participation in the process: <ul style="list-style-type: none"> <li>Resiliency</li> </ul> </li> </ul>	Steering Committee to provide additional relevant plans to review and incorporation into the mitigation plan.



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



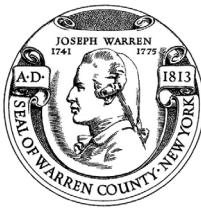
	<ul style="list-style-type: none"><li>○ Intersection of hazard mitigation and climate adaptation mitigation through Climate Smart Communities program</li><li>○ Communication with other municipalities that has technical capacity restrictions</li><li>○ Help inform communities on their land use impacts to resiliency</li><li>○ Maintaining Queensbury codes. Queensbury identified as busiest community in terms of development and economic driver for the County</li><li>○ Bridge information throughout the County</li></ul>	
2	<p><b>Project Overview</b></p> <ul style="list-style-type: none"><li>● Ms. Addonizio-Bianco provided the following information:<ul style="list-style-type: none"><li>○ An overview of hazard mitigation, what it is and how it can provide increase resilience through the development of a FEMA-approved Hazard Mitigation Plan. She also noted the need to track time spent working on the plan outside of meetings through in-kind tracking to provide match for federal funding support for the planning effort. An online tracker will be sent out to all plan participants.</li><li>○ An overview of the phases of the hazard mitigation planning process including description of the project organization:<ul style="list-style-type: none"><li>■ Core Planning Team (CPT)</li><li>■ Warren County Emergency Services</li><li>■ Warren County Soil and Water Conservation District</li><li>■ Tetra Tech</li></ul></li><li>○ Steering Committee (SC)<ul style="list-style-type: none"><li>■ Numerous County Departments, Major Businesses, Outside Agencies, 1 municipal representatives</li></ul></li><li>○ Planning Partnership (PP)<ul style="list-style-type: none"><li>■ All participating municipalities and Steering Committee members.</li></ul></li><li>○ FEMA</li><li>○ Stakeholders</li></ul></li><li>● Steering Committee roles and responsibilities:<ul style="list-style-type: none"><li>○ Provide guidance and leadership</li><li>○ Oversee the planning process</li><li>○ Act as point of contact for partners and stakeholders</li></ul></li><li>● Focus on updating the 2017 critical facilities inventory to ensure completeness and identify lifeline facilities. The County and planning partners will provide input to update the list of critical facilities and lifelines via an online survey. Once updated, the information will be used during the risk assessment and mitigation strategy development.</li><li>● DHSES will notify the County when the draft plan has been submitted to FEMA for review.</li><li>● FEMA will notify the County and jurisdictions to let them know the submitted plan is approvable.</li><li>● Request for relevant plans and studies. (Post meeting note: The attached presentation has been updated to reflect the list of plans</li></ul>	<ul style="list-style-type: none"><li>● Tt to provide SC member access to the project OneDrive site and Steering Committee members to confirm access to OneDrive – access to be provided in separate email</li><li>● Critical facility inventory survey to be distributed by Tt to the County and municipal representatives.</li></ul>



# Warren County Hazard Mitigation Plan Update Meeting Notes

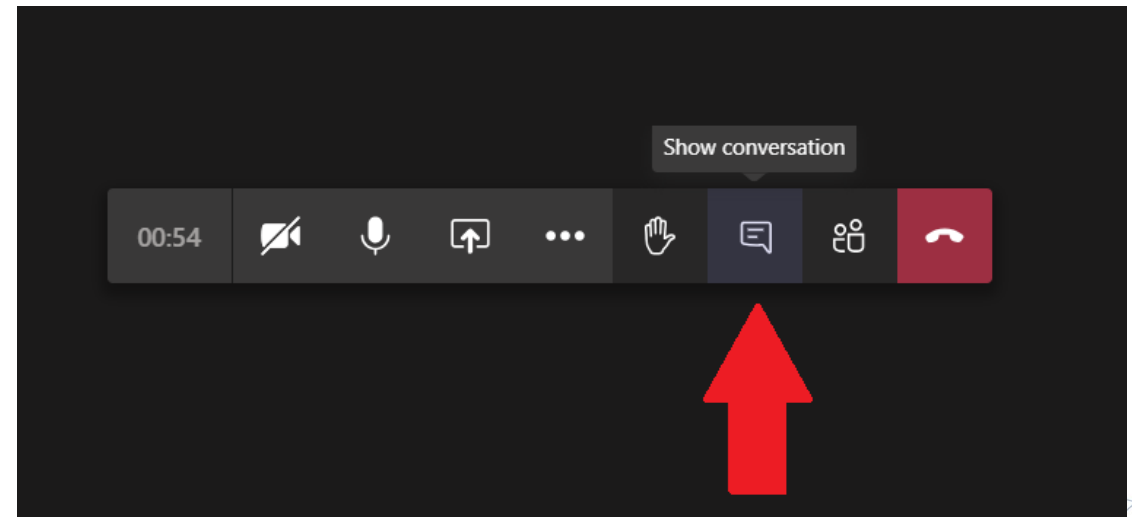


	<p>collected to date.) The committee members are requested to review the list and forward links to additional plans that may be relevant to the planning process.</p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco noted that participants will be given access to OneDrive to share documents and information.</li> </ul>	
3	<p><b>Risk Assessment and Hazards of Concern</b></p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco discussed the process of the risk assessment and reviewed the hazards of concern identified in the last HMP. These hazards of concern will need to be reviewed and updated as necessary. A survey will be sent out to the Steering Committee.</li> <li>One action is needed for every hazard of concern that impacts a municipality.</li> </ul>	<ul style="list-style-type: none"> <li>Steering Committee to provide input to update Hazards of Concern– to be distributed by and returned to Tt via email.</li> </ul>
4	<p><b>Goals and Objectives</b></p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco introduced the goals and objectives from the last HMP and provided suggestions to update them to align with current priorities. The Steering Committee as tasked with reviewing the mission statement, goals and objectives to provide feedback to guide the plan update.</li> <li>The Steering Committee recommending creating a goal and objective that addresses daily and long-term activities</li> </ul>	<ul style="list-style-type: none"> <li>Steering Committee to provide input – to be distributed by and returned to Tt via email.</li> <li>Steering Committee to clarify definition of ‘daily and long-term activities’</li> </ul>
5	<p><b>Upcoming Meetings</b></p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco reviewed upcoming meetings: <ul style="list-style-type: none"> <li>Steering Committee Meeting – October 27<sup>th</sup>, 2022*</li> <li>Planning Partnership – November 2<sup>nd</sup>, 2022</li> <li>Risk Assessment Meeting – February, 2023 (<i>tentative</i>)</li> <li><i>Planning Partnership Risk Assessment Meeting – February, 2023 (tentative)</i></li> <li>Mitigation Strategy Workshop – March, 2023 (<i>tentative</i>)</li> </ul> </li> </ul>	
6	<p><b>Next Steps</b></p> <ul style="list-style-type: none"> <li>Attend Planning Partnership Meeting</li> <li>Determine Hazards of Concern to include in the HMP</li> <li>Strengths, Weaknesses, Obstacles and Opportunities (SWOO)</li> <li>Review Hazard Profiles</li> <li>Review Risk Assessment Results</li> <li>Identify Problems and Problem Areas</li> <li>Develop Mitigation Strategy</li> <li>Review Draft Plan</li> <li>Submit Draft Plan for NYSDHSES/FEMA Review</li> <li>Adopt FEMA-Approved Plan</li> <li>Implement Projects and Maintain the Plan and Increase Resilience</li> </ul>	
7	<p><b>Conclusion</b> - The meeting concluded at 10:15 am.</p>	



# Welcome!

- If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.
  - Bring your mouse to the lower part of the screen until a set of buttons appears. They may also be at the top of your screen.
  - Click “Show Conversation.”



# **Warren County, New York Hazard Mitigation Plan – 2023 Update**

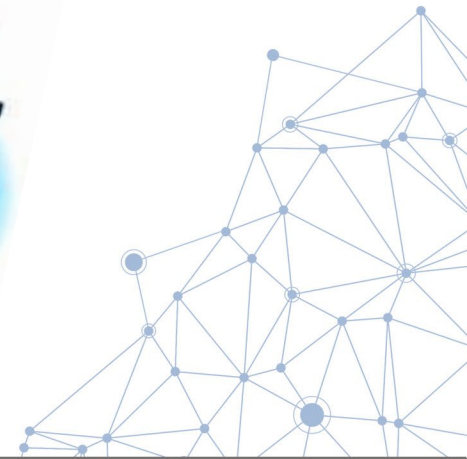
**Steering Committee Kick-Off Meeting | October 27,  
2022**

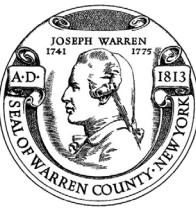




# Agenda

- Welcome and Introductions
- In-Kind Services Tracking
- Benefits of Hazard Mitigation
- Hazard Mitigation Planning Overview
- Project Organization
- Steering Committee Responsibilities
- Public and Stakeholder Outreach
- Update Hazards of Concern and Risk Assessment
- Critical Facilities and Lifelines
- Goals and Objectives
- Schedule
- Questions/Next Steps/Wrap Up





# Introductions

- Tell us...
  - What's your name?
  - Where you are from?
  - What is your mitigation experience?
  - What do you want to focus on during this process or what is your area of expertise?
  - What are your resilience concerns for Warren County?





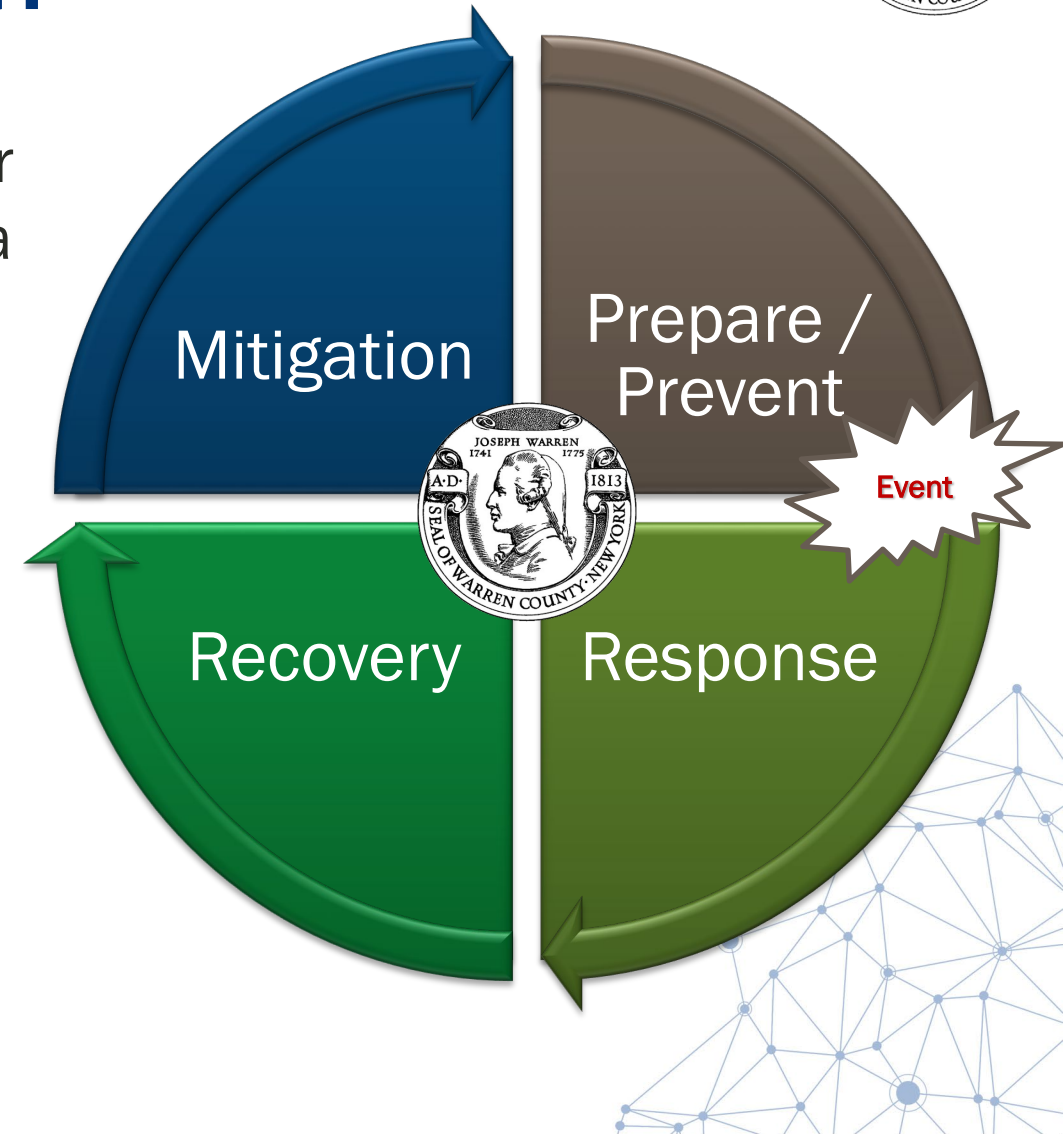
# Hazard Mitigation – What is it?

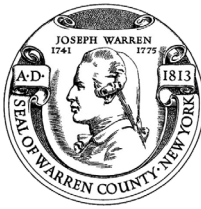
Mitigation is a sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event

-or-

Any action taken to reduce future disaster losses

“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).








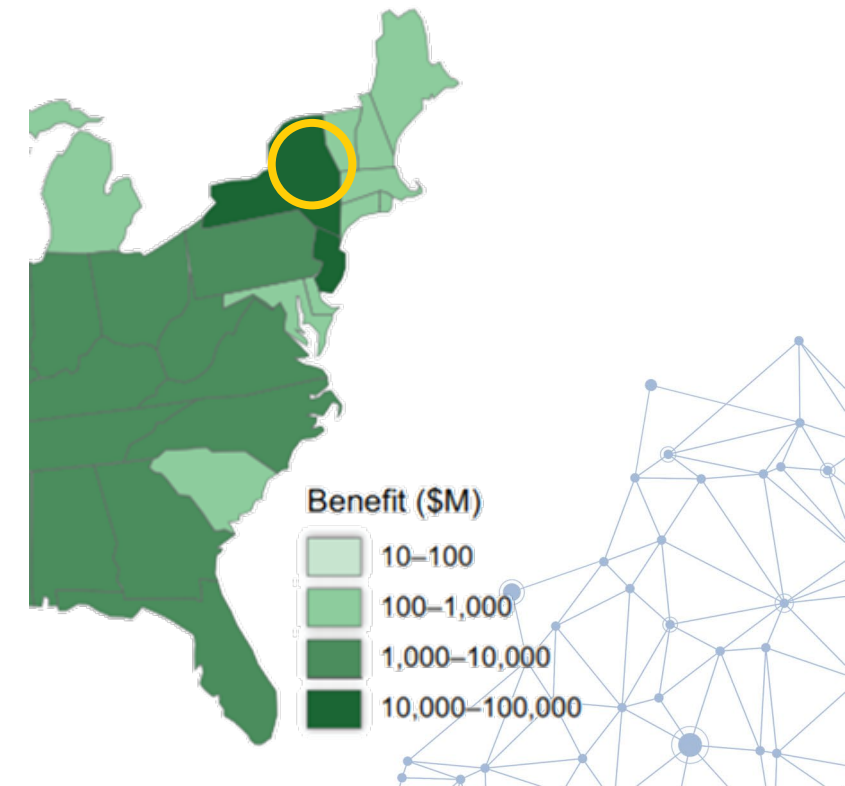


# Hazard Mitigation Works!

- According to the January 2019 National Institute of Building Sciences Natural Hazard Mitigation Saves: 2018 Interim Report, federal mitigation grants save \$6 for every \$1 spent!

Mitigation saves in every in state! New York has saved up to \$100 million in benefits.

National Benefit-Cost Ratio Per Peril <small>*BCR numbers in this study have been rounded</small>		Federally Funded
Overall Hazard Benefit-Cost Ratio		<b>6:1</b>
 <b>Riverine Flood</b>		<b>7:1</b>
 <b>Hurricane Surge</b>		Too few grants
 <b>Wind</b>		<b>5:1</b>
 <b>Earthquake</b>		<b>3:1</b>
 <b>Wildland-Urban Interface Fire</b>		<b>3:1</b>



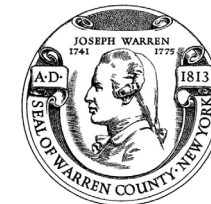


# Why Update?

- The mitigation plan update will:
  - Help the County prepare for and mitigate the effects of disasters
  - Continue to allow the County and participating partners to be eligible for pre- and post-disaster mitigation funding
  - Support CRS participation/rating of municipalities

Hazard	Losses (\$)
Blizzard	Losses not reported
Drought	Losses not reported
Excessive Temperature	Losses not reported
Flash Flood	\$22.36 million
Flood	\$6.24 million
Hail	\$13,000
Heavy Rain	Losses not reported
Heavy Snow	\$35,000
High Wind	\$731,000
Hurricane/Tropical Storm	Losses not reported
Lightning	\$77,000
Strong Wind	\$193,000
Thunderstorm Wind	\$10.62 million
Tornado/Funnel Cloud	\$252,500
Winter Storm	\$182,300
Winter Weather	\$1,000
<b>Total</b>	<b>\$42.345 million</b>

Source: NOAA-NCEI 2022





# What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480



4 Flood



4 Hurricane



4 Severe Storm(s)



2 Biological



2 Other



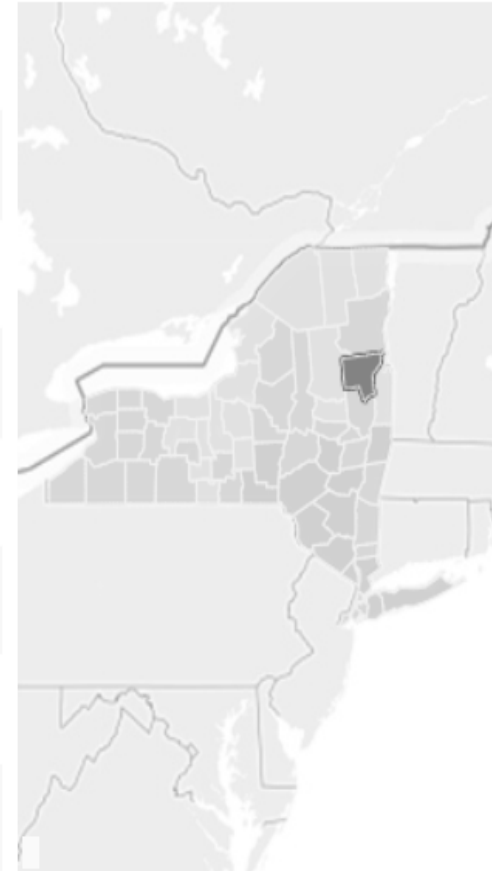
1 Earthquake



1 Fire

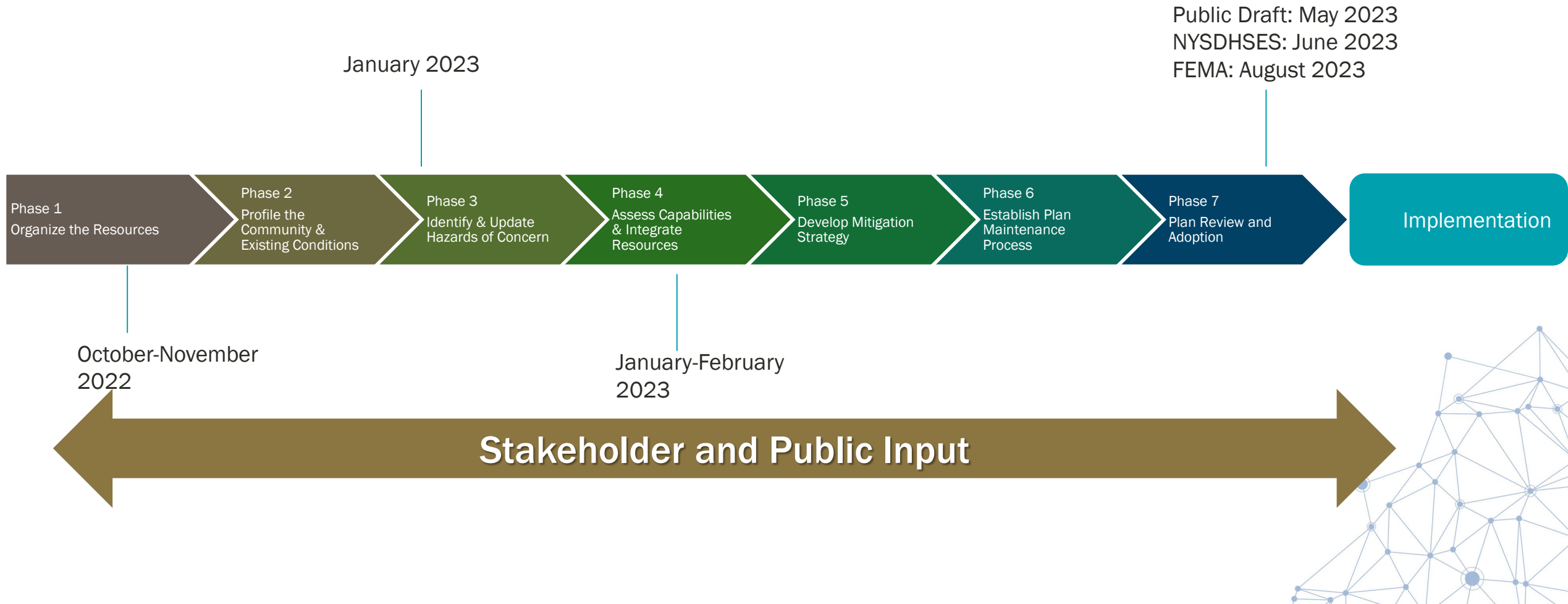


1 Snow

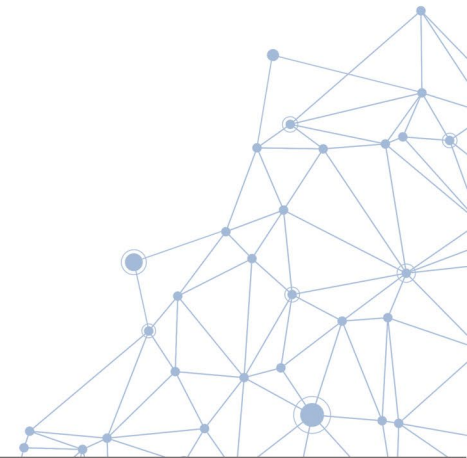
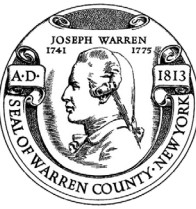




# Planning Process Overview



# Project Organization







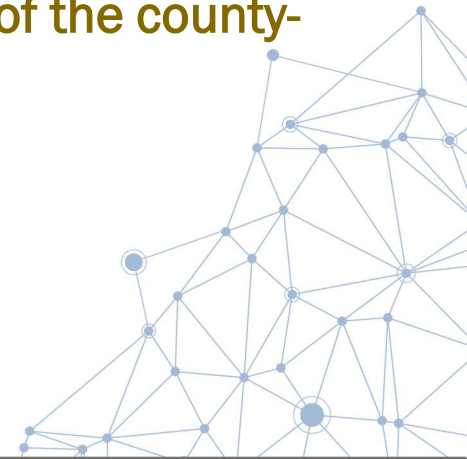
# Hazard Mitigation Committee Composition

## Steering Committee Members

Warren County Soil and Water Conservation District	Adirondack / Glens Falls Transportation Council
Warren County Office of Emergency Services	City of Glens Falls
Warren County Department of Planning and Community Development	Village of Lake George
Warren County Department of Public Works	SUNY Adirondack
Town of Queensbury – Planning Department	Glens Falls Hospital
	Finch Pryne
	Board of Supervisors

## Role

- ✓ Guide the Planning Partnership through the planning process
- ✓ Identify the natural hazards of concern
- ✓ Develop mitigation goals and objectives
- ✓ Develop public and stakeholder outreach strategy
- ✓ Support the development of the county-level mitigation strategy
- ✓ Review plan documents





# Steering Committee Roles and Responsibilities



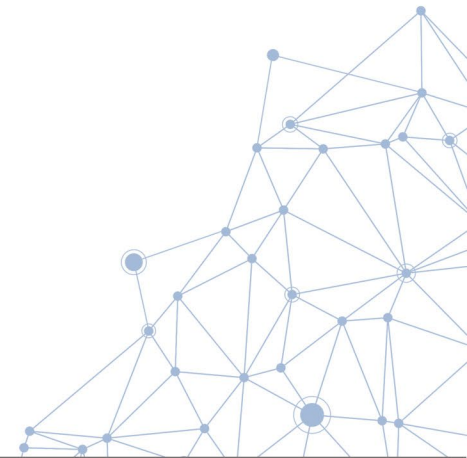
PROVIDE GUIDANCE AND  
LEADERSHIP THROUGHOUT  
THE PLANNING PROCESS

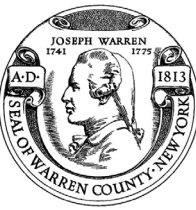


OVERSEE THE PLANNING  
PROCESS



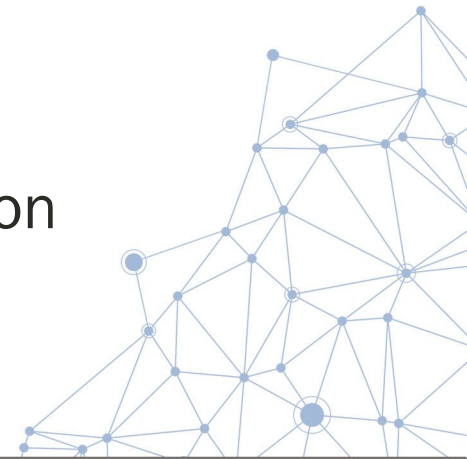
ACT AS THE POINT OF CONTACT FOR  
ALL PARTNERS AND STAKEHOLDERS





# Early Progress

- Requested/Received NFIP Community Assistance Visit Data
- Requested NFIP Data
- GIS Data Collection
- Review of Hazards of Concern/Distributed Worksheet to Steering Committee
- HMP website – In development
- HMP Fact Sheet, Citizen Survey, Agency Surveys - in progress
- County-Level/Regional Plan Collection
- Planning Partnership Outreach/Letter of Intent to Participate Distribution
- Planning Partnership Kick-Off Meeting Scheduled (November 2<sup>nd</sup> at 9am)

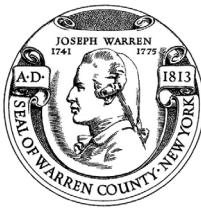




# In-Kind Services

Name of Team Member: \_\_\_\_\_

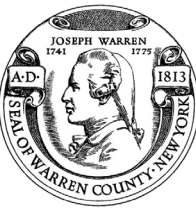
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes – sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



# Data Collection Status

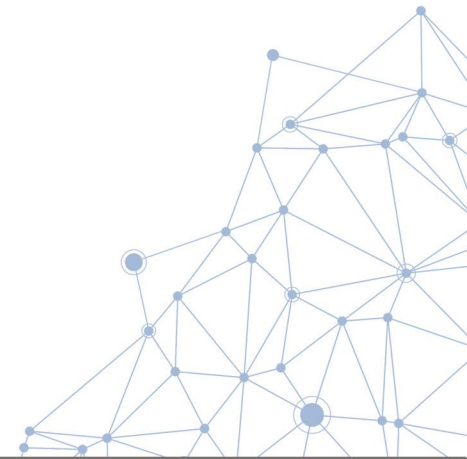
- Letters of Intent to Municipalities
- Critical Facility Inventory (County providing initial data)
- Reports and Plans – Initial collection of reports, plans, and codes available online
- Capability Assessments
- Mitigation Strategy Updates



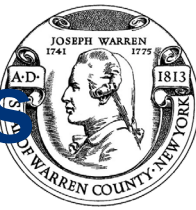


# Public and Stakeholder Outreach

- HMP is in development-  
<https://www.warrencountynyhmp.com>
- Social Media
- Stakeholder Survey
- Public Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey



# Relevant County and Regional Plans and Studies



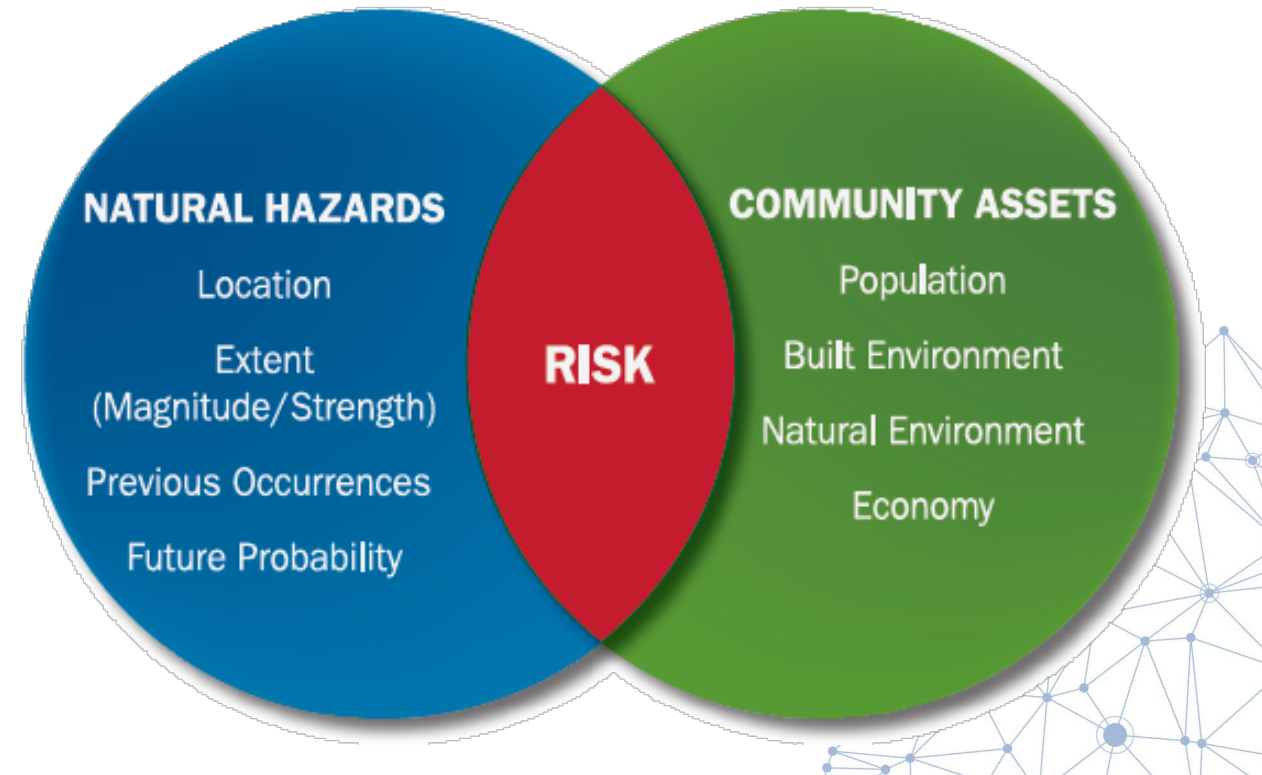
Name of Plan/Document	Date of Plan	Jurisdiction
Excessive Heat Plan	2022	Countywide
Schroon Lake Watershed Management Plan Addendum	2019	Chester (T)
Lake Champlain Watershed Roadside Erosion Assessment	-	Bolton (T), Hague (T), Lake George (T), Queensbury (T)
Upper Hudson River Watershed Management Plan	2020	Countywide
Friends Lake Watershed Assessment	2017	Chester (T)
LC Nonpoint Source Pollution Watershed Assessment and Management Plan	2018	Countywide
LG HAB Plan 2022 Update	2022	Lake George (T), Bolton (T)
Loon Lake Watershed Report	2021	Loon Lake, Chester (T)
Warren County - Dam Risk into Local HMG Plans	2021	Countywide

- Others?

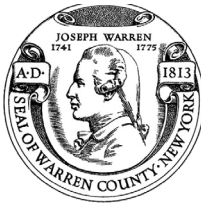


# Update Risk Assessment

- Update assets
- Examine previous impacts
- Analyze risks
- Review with Steering Committee
- Risk assessment meeting



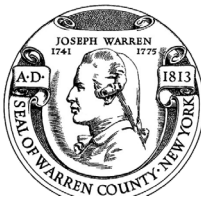




# NYS DHSES Requirements



- Establish Jurisdictional Teams
- Assess Critical Facilities
- Plan for Displaced Residents
  - Intermediate (Temporary Housing) and Long-Term (Permanent Housing)
- Plan for Evacuation and Sheltering
- Document Past Mitigation Accomplishments
- Include Jurisdictional Annexes
- Develop Mitigation Actions (minimum of 2 projects)
- Plan for Climate Change



# EXERCISE – Identifying Hazards of Concern

Thinking back over the last few years...

- The 2017 plan included:
  - Disease Outbreak
  - Earthquake
  - Flood
  - Infestation
  - Landslide
  - Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
  - Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
  - Wildfire
- In review...
  - Have additional hazards impacted the County since 2017?
  - Have hazard been mitigated and no longer cause damage?
  - Should hazards be regrouped to minimize number or required actions?
  - Should additional hazards be included?

- Have additional hazards impacted Warren County since 2017?
- Have hazards been mitigated and no longer cause damage or put the County at risk?
- Should hazards be regrouped to align with the 2019 State HMP?

2019 NY State HMP	Identified Hazard in the 2017 Warren HMP	2017 Warren HMP Ranking	2021 CEPA Ranking**	Has the frequency, severity, or location of the hazard changed in your community?  NC = No Change; I = <u>Increase</u> ; D = Decrease  (Please provide an explanation for any hazards marked I or D in this column)	2023 Warren HMP* (indicate 'keep', combine with other hazard, or provide comments for any changes)
<b>Natural Hazards</b>					
Avalanche	-	-			
Coastal Hazards					
<del>Coldwave</del>	-	-			
Drought	-	-	Low		
Earthquake	X	High	Low		Keep
Flooding	X	Medium	Very High		Keep
Hail	X	Severe Storm: High			Keep

Please identify any other hazards that you believe should be considered in the 2023 update of the Warren County Hazard Mitigation Plan (e.g. landslides, wildfires, invasive species, etc.)

What are the natural hazards that present the most risk to your jurisdiction today?

- |  |  |
|--|--|
| <input type="checkbox"/> Climate Change                            | <input type="checkbox"/> Severe Weather (high wind, tornado, thunderstorm, hail) |
| <input type="checkbox"/> Dam Failure                               | <input type="checkbox"/> Severe Winter Weather (heavy snow, blizzard, ice)       |
| <input type="checkbox"/> Drought                                   | <input type="checkbox"/> Wildfire  |
| <input type="checkbox"/> Earthquake                                | <input type="checkbox"/> Hazardous Materials (fixed site, in-transit)            |
| <input type="checkbox"/> Extreme Temperature (heat and cold)       | <input type="checkbox"/> Disease Outbreak  |
| <input type="checkbox"/> Flood (riverine, dam failure, beaver dam) | <input type="checkbox"/> Invasive Species  |
| <input type="checkbox"/> Geologic (landslide, subsidence/sinkhole) | <input type="checkbox"/> Other: _____  |

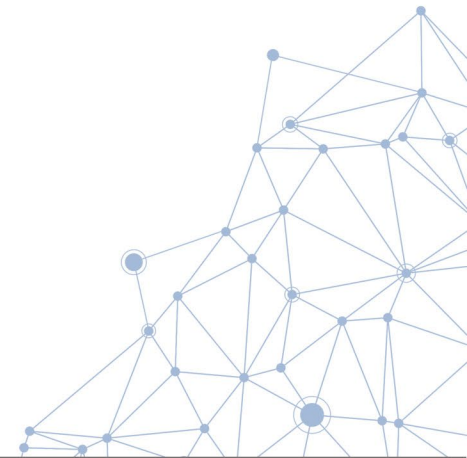


# Community Lifelines

- Review 2017 critical facility inventory to ensure complete
- Crosswalk and identify lifelines

***Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security*

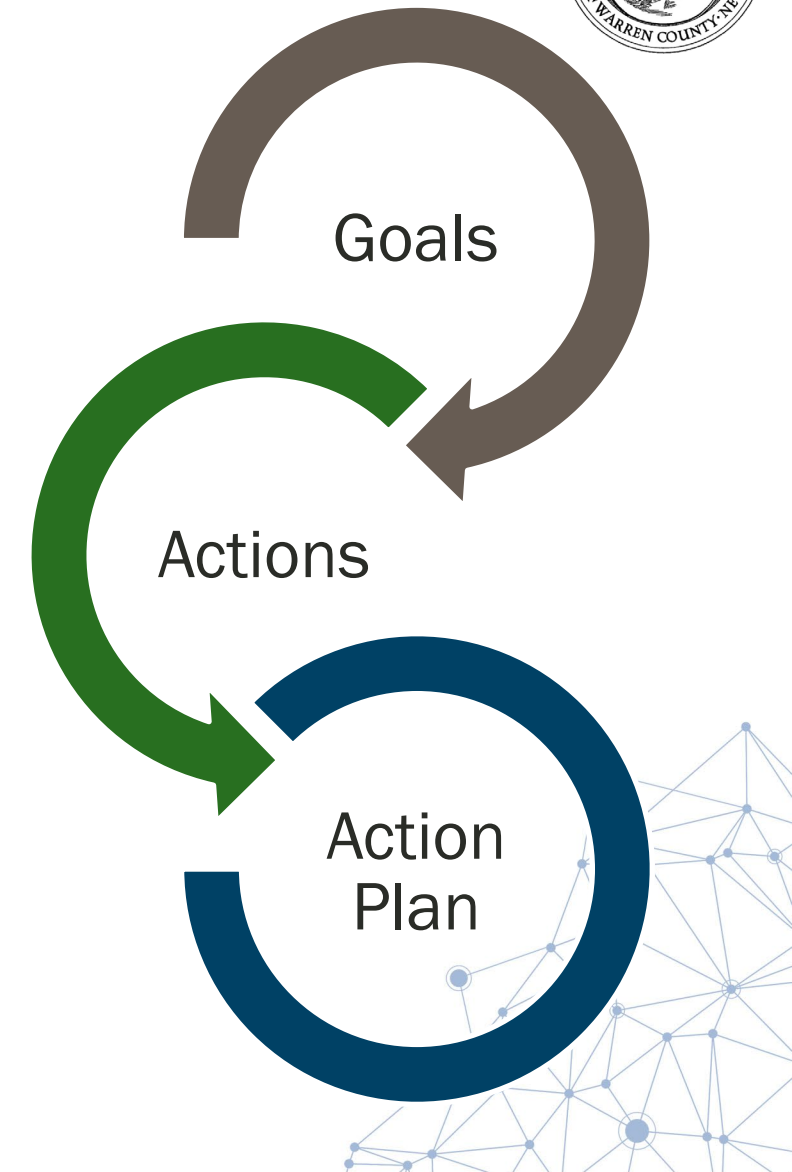
***Essential facilities** are a subset of lifelines that include those facilities that are important to ensure a full recovery following the occurrence of a hazard event. For the County risk assessment, this category includes police, fire, EMS, schools/colleges, shelters, senior facilities, and medical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

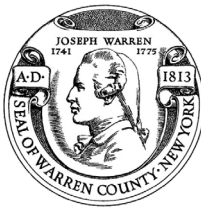




# Mitigation Strategy

- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce risk from hazards?
- Action Plan
  - How will the actions be prioritized and implemented?



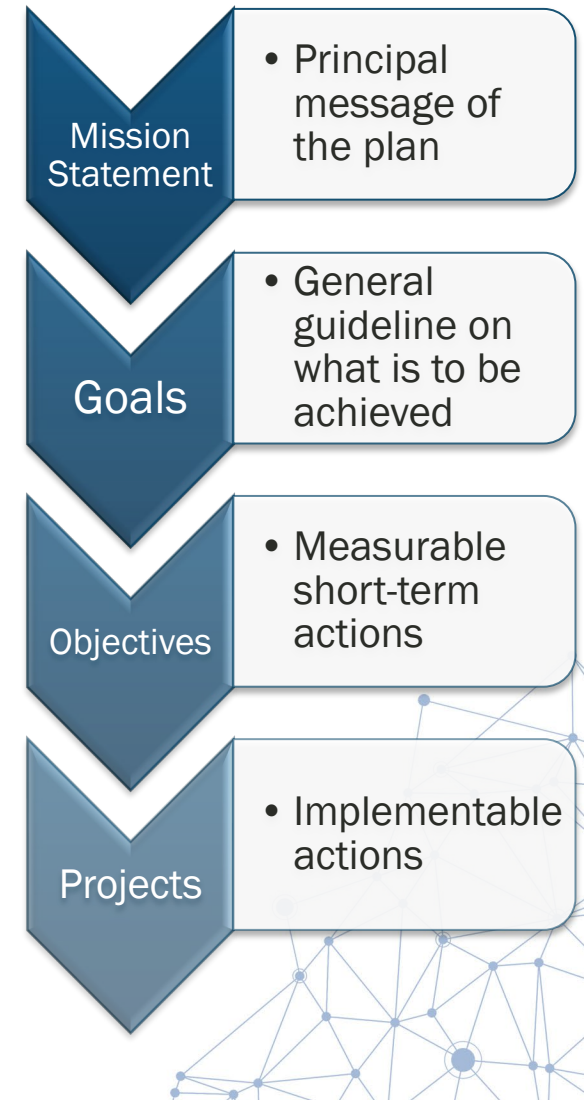


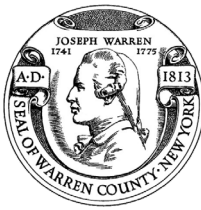
# Update Mission Statement?

As part the of the 2017 update process, the Steering Committee reviewed the mission statement and elected to maintain it without edit or amendment, as noted below. At this time, the committee is requested to review the Mission Statement to update to align with current County, state, and local policy. The committee is requested to consider adding the concept of equity and inclusiveness of socially vulnerable populations to the mission statement and the goals and objectives as well as additional adjustments to align with count, state, and local policy.

## *2017 HMP Mission Statement*

*To create communities whose daily activities reflect a comprehensive commitment by government, business, non-profit organizations and the public to eliminate or reduce risks and adverse impacts from natural, technological and human-caused hazards .*





# Goals and Objectives Review and Update

Goal	Objective
<b>Goal 1:</b>  <b>Protect Life and Property.</b>	1.1: Introduce mitigation activities that will make homes, businesses and critical facilities and infrastructure more hazard resistant and to increase resilience.
	1.2: In areas vulnerable to hazards, encourage businesses and homeowners to take preventive actions when possible .
	1.3: Periodically review existing building codes, safety procedures, municipal and county ordinances to update recent standards for building protection.
	1.4: Immediately enforce existing building codes within the jurisdiction.
	1.5: Encourage owners of home and businesses and renters to purchase appropriate insurance coverage for potential damages from hazards.
<b>Goal 2:</b> <b>Increase Public Awareness</b>	2.1: Continue developing and integrating education and outreach programs in an effort to enhance public awareness of the hazards, providing information on specific activities for individuals in anticipation of a hazard event .
	2.2: Provide information on current government programs and funding resources to assist with mitigation and resilience.
	2.3: Strengthen communication and cooperation between public agencies, citizens, non-profit groups, and businesses to implement mitigation activities effectively.





# Goals and Objectives Review and Update

## Goal 3: Provide for Emergency Services

3.1: Coordinate hazard mitigation activities with existing local emergency plans.

3.2: Identify and plan for acquiring any specific emergency services and equipment needed to improve response capabilities for specific hazards.

3.3: Review emergency traffic routes, making changes as needed, and educating the public as to the routes .

## Goal 4:

Support comprehensive county and local mitigation through the integration of hazard mitigation planning into related state, regional, county and local plans and programs.

4.1: Promote land use planning to encourage resilient and sustainable efforts throughout statewide and regional programs that address zoning, building codes, capital improvement programs, open space preservation, nature-based solutions, and storm water management regulations.

4.2: Continue to participate in state, regional and local programs and efforts that focus on practices that support or enhance resiliency.

4.3: Improve hazard data through participation in studies, research, and mapping to enhance information related to the impacts of hazards and related risks, vulnerability, and losses.

## Goal 5:

Encourage the development and implementation of long-term, cost-effective, and resilient mitigation projects to preserve or restore the functions of natural systems.

5.1: Encourage the use of green and natural infrastructure and nature based solutions.

5.2: Provide technical assistance to communities and stakeholders in the application and implementation of mitigation projects that preserve or restore natural systems.

5.3: Maintain and encourage ongoing relationships between state agencies and partners to play an active and vital role in preservation and restoration of vulnerable natural systems.

5.4: Promote climate change adaption strategies that protect against long-term effects on the environment.

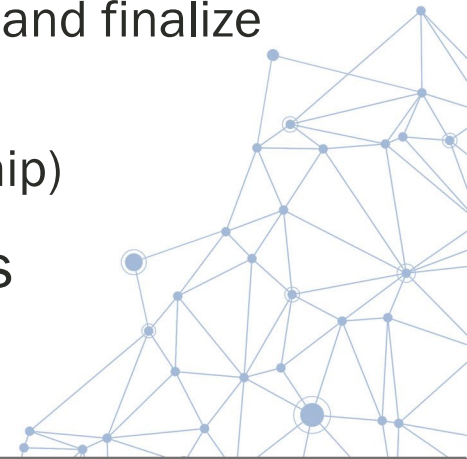
## Goal 5: Address Long-Term Vulnerabilities from High Hazard Dams

5.1: Ensure dam infrastructure is maintained

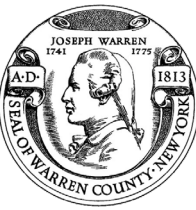


# Schedule

- Planning Process
  - Steering Committee Kick-Off – TODAY!
  - Planning Partnership Kick-Off – November 2<sup>nd</sup> at 9 am (Steering committee will be invited)
- Update Risk Assessment
  - Data collection is underway; confirm local critical facilities inventory by December 2023
  - Begin vulnerability assessment
  - Steering Committee Meeting: November, to identify hazards of concern for County and finalize goals
  - Risk Assessment Meetings: February (Steering Committee and Planning Partnership)
- Public Involvement Strategy – ongoing throughout the planning process

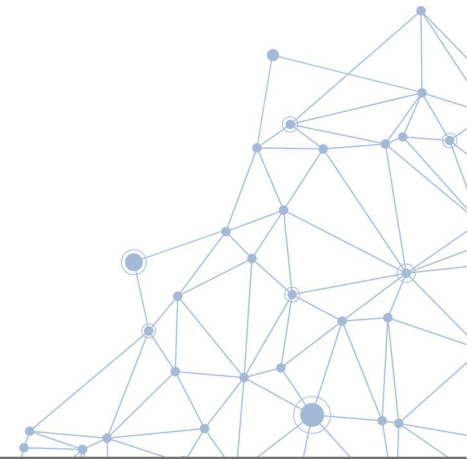






# Schedule

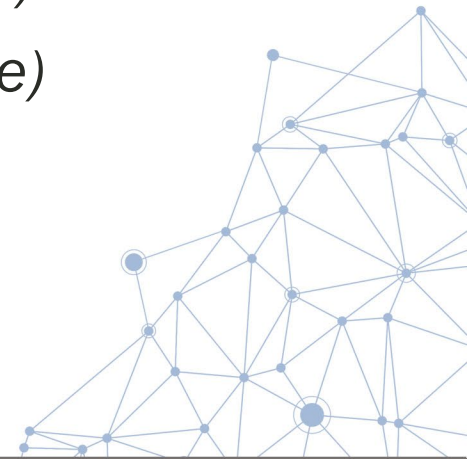
- Mitigation Strategy
  - Begin working with the municipalities in **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 2023**
- Draft Plan to Steering Committee in **May-June 2023** *(as sections are ready)*
- Public Review Period (30 days) – **June 2023**
- Final draft plan to NYSDHSES by June 2023 and FEMA by **August 2023**

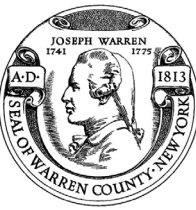




# Next Steps – Key Dates

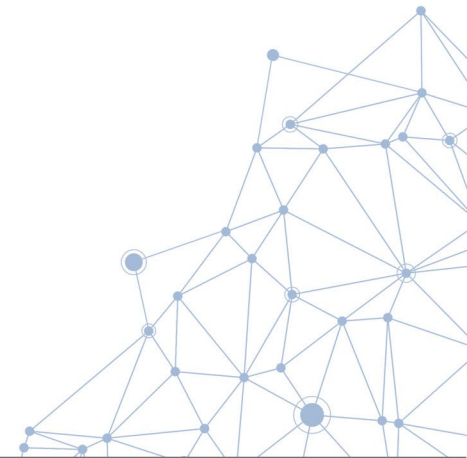
- Complete Hazards of Concern & Goals and Objectives worksheets and return by November 1<sup>st</sup>.
- Confirm access to OneDrive – *access to be provided in separate email*
- Planning Partnership Kick-Off\* (Steering Committee and Municipalities) on **November 2<sup>nd</sup>, 2023**
- Steering Committee Meeting\* – October 27<sup>th</sup>, 2022
- Steering Committee Risk Assessment Meeting – February, 2023 (*tentative*)
- Planning Partnership Risk Assessment Meeting – February, 2021(*tentative*)
- Mitigation Strategy Workshop – March 2023 (*tentative*)





# Next Steps

1. Attend Planning Partnership Meeting
  2. Determine Hazards of Concern to include in the HMP
  3. Strengths, Weaknesses, Obstacles and Opportunities (SWOO)
  4. Review Hazard Profiles
  5. Review Risk Assessment Results
  6. Identify Problems and Problem Areas
  7. Develop Mitigation Strategy
  8. Review Draft Plan
  9. Submit Draft Plan for NYSDHSES/FEMA Review
  10. Adopt FEMA-Approved Plan
  11. Implement Projects and Maintain the Plan
- ➡ Increase Resilience!



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #1 – AGENDA**  
**MEETING DATE/TIME: November 2, 2022 – 10:00 am**



Virtual: Microsoft Teams Meeting - ***Click here to join the meeting*** or use this link:

[https://teams.microsoft.com/l/meetup-](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MGE2NDNIYWYtYWU3Ny00NGU4LWJkMWQtNmY0NGRhOTNiMTQ0%40thread.v2/0?context=%7b%22id%22%3a%22a40fe4ba-abc7-48fe-8792-b43889936400%22%2c%22oid%22%3a%22e2c51125-ed2c-4397-a8d5-53494e2597a5%22%7d)

[join/19%3ameeting\\_MGE2NDNIYWYtYWU3Ny00NGU4LWJkMWQtNmY0NGRhOTNiMTQ0%40thread.v2/0?context=%7b%22id%22%3a%22a40fe4ba-abc7-48fe-8792-b43889936400%22%2c%22oid%22%3a%22e2c51125-ed2c-4397-a8d5-53494e2597a5%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MGE2NDNIYWYtYWU3Ny00NGU4LWJkMWQtNmY0NGRhOTNiMTQ0%40thread.v2/0?context=%7b%22id%22%3a%22a40fe4ba-abc7-48fe-8792-b43889936400%22%2c%22oid%22%3a%22e2c51125-ed2c-4397-a8d5-53494e2597a5%22%7d)

Dial in by phone (audio only), +1 518-300-1367,,776526083# United States, Albany, NY , Phone Conference ID: 776 526 083#

1. Welcome and Introductions
2. Benefits of Hazard Mitigation
3. Hazard Mitigation Planning Overview
4. Project Organization
5. Public and Stakeholder Outreach
6. In-Kind Services Tracking
7. Planning Partnership Responsibilities
8. Community Lifelines/Critical Facilities
9. Update Hazards of Concern and Risk Assessment
10. Goals and Objectives
11. Schedule
12. Questions/Next Steps/Wrap Up



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Purpose of Meeting:	Planning Partnership Meeting
Location of Meeting:	Hybrid In-person and Teleconference Teams Meeting
Date of Meeting:	November 2, 2022, 9:00 am – 10:05 am

Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ann Marie Mason	Warren County, Director Emergency Services
Ashley Rivers	Warren County OEM, Emergency Services Coordinator
Josh Westfall	Town of Bolton, Planner
Marion Eagan	Town of Chester, Planning and Zoning
Jeremy Little	Town of Chester, Zoning Administrator
Bill Norton	City of Glens Falls, Superintendent Water and Sewer
Michael N. Geraci	Town of Horicon, Supervisor
Danae Tucker	Town of Johnsbury, Bookkeeper
Fred Comstock	Town of Johnsbury, Highway Superintendent
Ernie Dunkley	Town of Johnsbury, Safety Officer
Mike Dunkley	Town of Johnsbury, Assistant Highway Superintendent
Laura Moore	Town of Queensbury, Land Use Planner
John O'Brien	Town of Queensbury, Director of Building and Code Enforcement
Mike Palmer	Town of Queensbury, Fire Marshal
Dave Duell	Town of Queensbury, Highway Superintendent
Deb Runyon	Town of Thurman, Supervisor
Dan Barusch	Town/Village Lake George, Planner
Rob Lanfear	Town/Village Lake George, Highway Department
Keith Lanfear	Town/Village Lake George, Superintendent Public Works
Eugene J. Merlino	Town of Lake Luzerne, Town Supervisor
Karen Putney	Town of Lake Luzerne, Zoning Enforcement Officer
James S. Hull	Town of Warrensburg, Code Enforcement Officer
Elizabeth O'Reilly	NYSDHSES, Planning Manager
Shelby Meyers	NYSDHSES, Planner
Paul Hoole	FEMA, Mitigation Planning
Cynthia Addonizio-Bianco	Tetra Tech, Inc.
Erika Corsi	Tetra Tech, Inc.



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Agenda Summary:		
Item No.	Description	Action item(s):
1	<b>Welcome and Opening Remarks</b> <ul style="list-style-type: none"><li>Meeting started at 9:05 pm</li><li>Cynthia Addonizio-Bianco, project manager from Tetra Tech (Tt), facilitated introductions, gave opening remarks providing an overview of the importance of this planning process and thanked participants for supporting the hazard mitigation update. Jim Lieberum, Director of Warren County Soil and Water Conservation District introduced the County team.</li><li>Elizabeth O'Reilly of NYSDHSES indicated that NYSDHSES will provide support as needed throughout the mitigation planning process.</li></ul>	N/A
2	<b>Project Overview</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco provided the following information:<ul style="list-style-type: none"><li>An overview of hazard mitigation, what it is and how it can provide increase resilience through the development of a FEMA-approved Hazard Mitigation Plan. She also noted the need to track time spent working on the plan outside of meetings through in-kind tracking to provide match for federal funding support for the planning effort. An online tracker will be sent out to all plan participants.</li><li>An overview of the phases of the hazard mitigation planning process including description of the project organization:<ul style="list-style-type: none"><li>Core Planning Team (CPT)</li><li>Warren County Emergency Services</li><li>Warren County Soil and Water Conservation District</li><li>Tetra Tech</li></ul></li><li>Steering Committee (SC)<ul style="list-style-type: none"><li>Numerous County Departments, Major Businesses, Outside Agencies, municipal representatives</li></ul></li><li><b>Planning Partnership (PP)</b><ul style="list-style-type: none"><li>All participating municipalities and Steering Committee members.</li></ul></li><li>FEMA/NYSDHSES</li><li>Stakeholders</li></ul></li><li>Planning Partnership roles and responsibilities:<ul style="list-style-type: none"><li>Provide guidance and leadership</li><li>Identify hazards of concern</li><li>Develop mitigation goals and objectives</li></ul></li><li>Develop public and stakeholder outreach</li><li>Assist with the development of their jurisdictional annex. Each municipality will be provided a version of their jurisdictional annex. The municipal mitigation team will edit and make changes to the annex as needed and return to Tt.</li></ul>	<ul style="list-style-type: none"><li>Critical facility inventory survey to be distributed by Tt to the County and municipal representatives.</li></ul>





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes

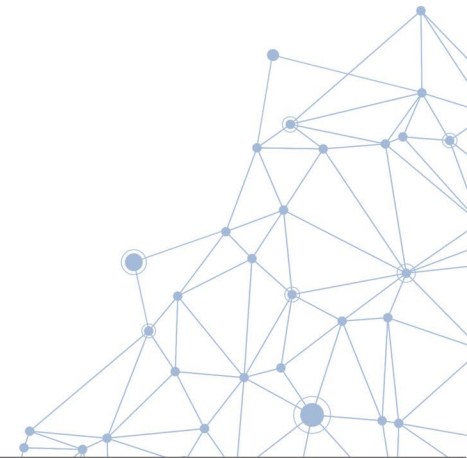
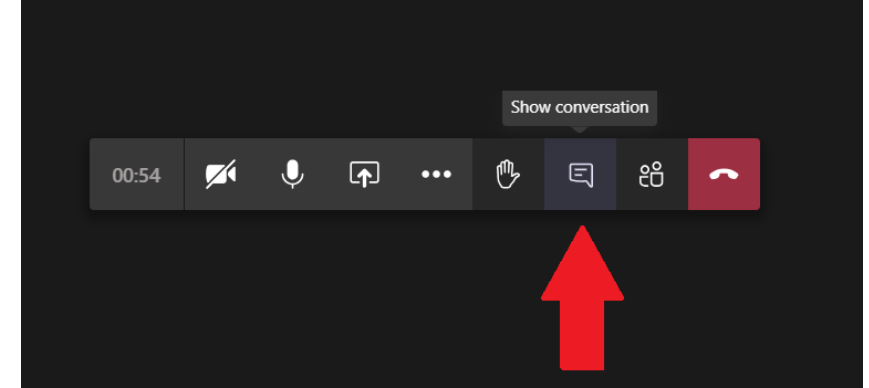


3	<b>Risk Assessment and Hazards of Concern</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco discussed the process of the risk assessment and reviewed the hazards of concern identified in the last HMP. These hazards of concern will need to be reviewed and updated as necessary.</li><li>One action is needed for every hazard of concern that impacts a municipality.</li></ul>	<ul style="list-style-type: none"><li>Planning Partnership to provide input to update Hazards of Concerns in associated worksheets.</li></ul>
4	<b>Goals and Objectives</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco introduced the goals and objectives from the last HMP.</li><li>Community lifelines and critical facilities were introduced from the previous HMP.</li><li>The jurisdictional representative should review the goals and objectives and the community lifelines to identify changes in their communities.</li></ul>	<ul style="list-style-type: none"><li>Planning Partnership to provide critical facilities inventory by December 9th using the survey sent via email</li><li>Tt to send critical facilities inventory survey</li></ul>
5	<b>Upcoming Meetings</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco reviewed upcoming meetings:<ul style="list-style-type: none"><li>Confirm critical facilities/lifeline inventory by December 9<sup>th</sup> 2022</li><li>Worksheet workshop – November 16<sup>th</sup>, 2022, at 10am</li><li>All Annex worksheets due November 23<sup>rd</sup>, 2022</li><li>Risk assessment meeting – February 2023</li></ul></li></ul>	<ul style="list-style-type: none"><li>Tt to send out jurisdictional annexes</li></ul>
6	<b>Next Steps</b> <ul style="list-style-type: none"><li>Determine Hazards of Concern to include in the HMP</li><li>Review Hazard Profiles</li><li>Review Risk Assessment Results</li><li>Identify Problems and Problem Areas</li><li>Develop Mitigation Strategy</li><li>Review Draft Plan</li><li>Submit Draft Plan for NYSDHSES/FEMA Review</li><li>Adopt FEMA-Approved Plan</li><li>Implement Projects and Maintain the Plan and Increase Resilience</li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 10:05 am.	

# Welcome!



- If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.
  - Bring your mouse to the lower part of the screen until a set of buttons appears. They may also be at the top of your screen.
  - Click “Show Conversation.”





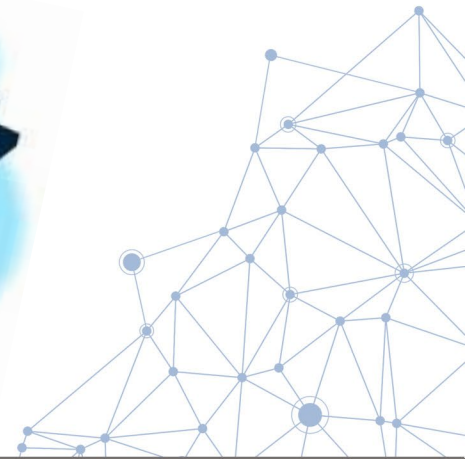
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Planning Partnership Kick-Off Meeting | November 2, 2022  
9:00am



# Agenda

- Welcome and Introductions
- Benefits of Hazard Mitigation
- Hazard Mitigation Planning Overview
- Project Organization
- Public and Stakeholder Outreach
- In-Kind Services Tracking
- Planning Partnership Responsibilities
- Community Lifelines/Critical Facilities
- Update Hazards of Concern and Risk Assessment
- Goals and Objectives
- Schedule
- Questions/Next Steps/Wrap Up





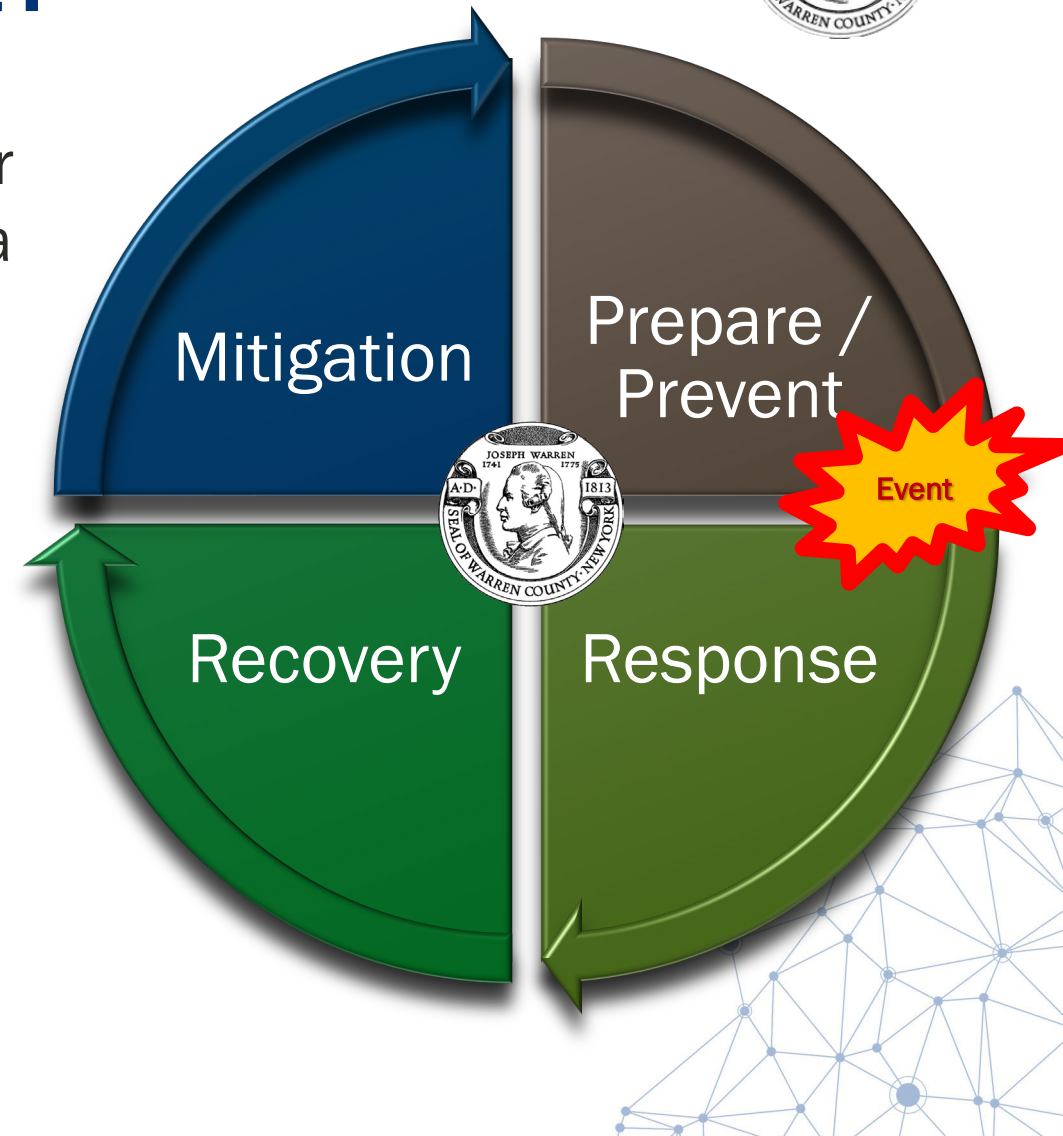
# Hazard Mitigation – What is it?

Mitigation is a sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event

-or-

Any action taken to reduce future disaster losses




“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).



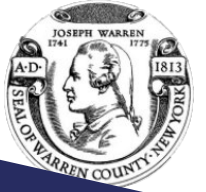


# Hazard Mitigation Works!

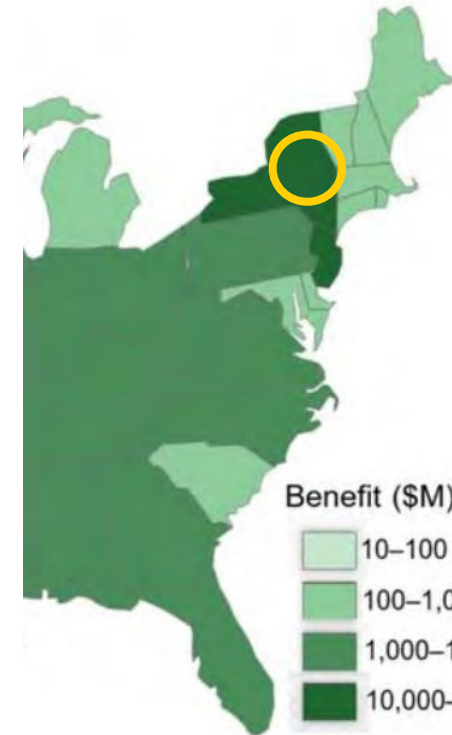
- According to the January 2019 National Institute of Building Sciences Natural Hazard Mitigation Saves: 2019 Report, federal mitigation grants save \$6 for every \$1 spent!

	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
<b>Overall Benefit-Cost Ratio</b>	<b>11:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>6:1</b>
<b>Cost (\$ billion)</b>	<b>\$1/year</b>	<b>\$4/year</b>	<b>\$520</b>	<b>\$0.6</b>	<b>\$27</b>
<b>Benefit (\$ billion)</b>	<b>\$13/year</b>	<b>\$16/year</b>	<b>\$2200</b>	<b>\$2.5</b>	<b>\$160</b>
 <b>Riverine Flood</b>	<b>6:1</b>	<b>5:1</b>	<b>6:1</b>	<b>8:1</b>	<b>7:1</b>
 <b>Hurricane Surge</b>	not applicable	<b>7:1</b>	not applicable	not applicable	not applicable
 <b>Wind</b>	<b>10:1</b>	<b>5:1</b>	<b>6:1</b>	<b>7:1</b>	<b>5:1</b>
 <b>Earthquake</b>	<b>12:1</b>	<b>4:1</b>	<b>13:1</b>	<b>3:1</b>	<b>3:1</b>
 <b>Wildland-Urban Interface Fire</b>	not applicable	<b>4:1</b>	<b>2:1</b>	not applicable	<b>3:1</b>

Copyright © 2019 The National Institute of Building Sciences



Mitigation saves in every in state! New York State has benefited in over \$100 million from federal grants for flood, wind, earthquake, and fire mitigation.

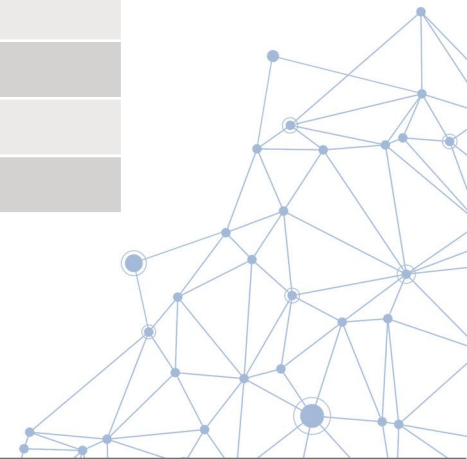


# Why Update?

- The mitigation plan update will:
  - Help the County prepare for and mitigate the effects of disasters
  - Continue to allow the County and participating partners to be eligible for pre- and post-disaster mitigation funding
  - Support CRS participation/rating of municipalities

Hazard	Losses (\$)
Blizzard	Losses not reported
Drought	Losses not reported
Excessive Temperature	Losses not reported
Flash Flood	\$22.36 million
Flood	\$6.24 million
Hail	\$13,000
Heavy Rain	Losses not reported
Heavy Snow	\$35,000
High Wind	\$731,000
Hurricane/Tropical Storm	Losses not reported
Lightning	\$77,000
Strong Wind	\$193,000
Thunderstorm Wind	\$10.62 million
Tornado/Funnel Cloud	\$252,500
Winter Storm	\$182,300
Winter Weather	\$1,000
<b>TOTAL</b>	<b>\$42.345 million</b>

Source: NOAA-NCEI 2022





# What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480



4 Flood



4 Hurricane



4 Severe Storm(s)



2 Biological



2 Other



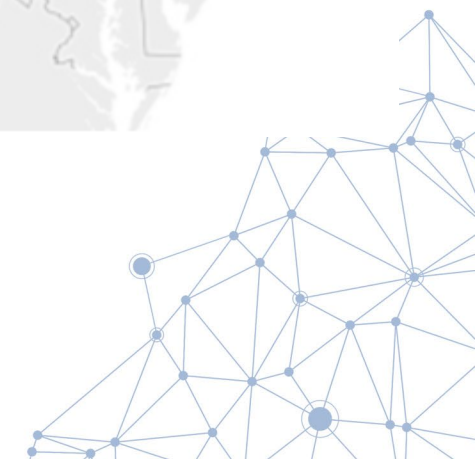
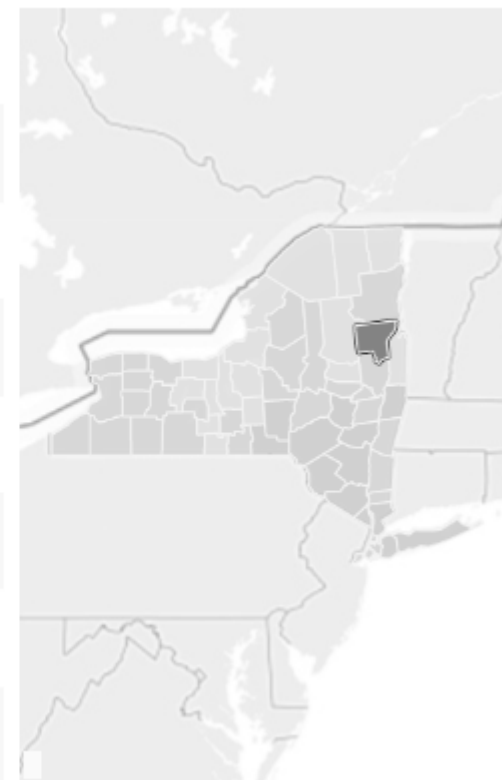
1 Earthquake



1 Fire

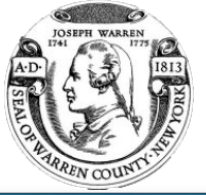


1 Snow

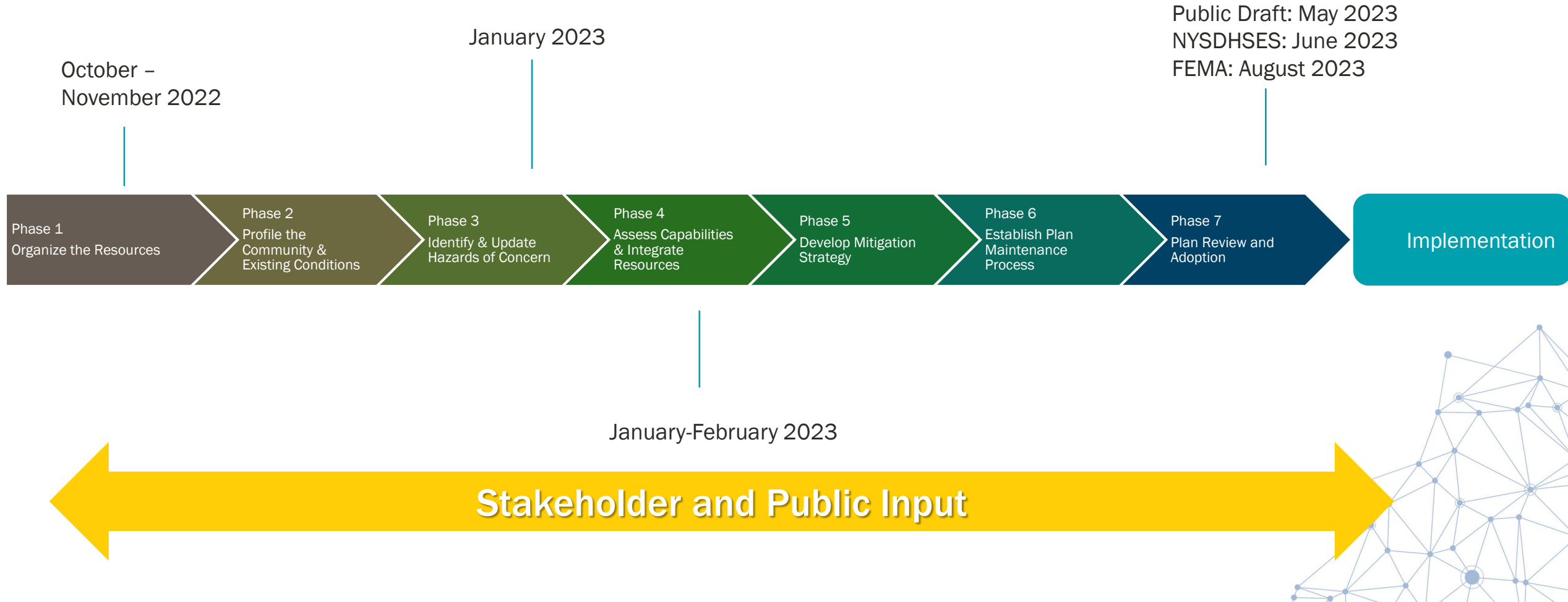


# What is our Vision?

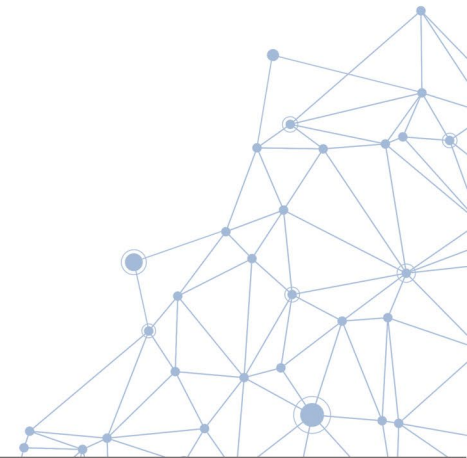
*The **mission** of the Warren County Hazard Mitigation Plan is to create communities whose daily activities reflect a comprehensive **commitment** by government, business, non-profit organizations and the public to eliminate or **reduce risks** and adverse impacts from natural, technological and human-caused hazards.*



# Planning Process Overview



# Project Organization





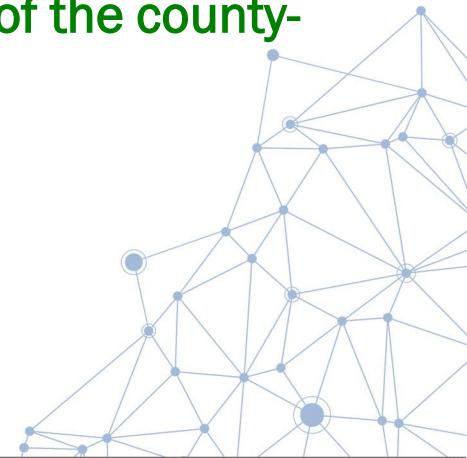
# Who is Leading the Planning Process?

## Steering Committee Members

Warren County Soil and Water Conservation District	Adirondack / Glens Falls Transportation Council
Warren County Office of Emergency Services	City of Glens Falls
Warren County Department of Planning and Community Development	Village of Lake George
Warren County Public Works	SUNY Adirondack
Town of Queensbury Planning Department	Glens Falls Hospital
	Finch Pryne
	Board of Supervisors

## Role

- ✓ Guide the Planning Partnership through the planning process
- ✓ Identify the natural hazards of concern
- ✓ Develop mitigation goals and objectives
- ✓ Develop public and stakeholder outreach strategy
- ✓ Support the development of the county-level mitigation strategy
- ✓ Review plan documents





# How are we Engaging the Public?

- HMP website underdevelopment – <https://www.warrencountynewyorkhmp.com>
- Social Media Blasts – content and graphics will be sent out
- Surveys – public, stakeholder, and neighbors
- Local announcements of HMP update – local papers, municipal newsletters, etc.
- Local public meetings
- Draft plan review
- Document each and every time this is done!

## Why conduct outreach?

- ✓ Informs and educates about hazards and risks
- ✓ Invites interested parties to contribute their views and ideas for mitigation
- ✓ Identifies conflicts and incorporates different perspectives and priorities early in the process
- ✓ Provides data and information that improves overall quality and accuracy of the plan
- ✓ Ensures transparency and builds trust
- ✓ Maximizes opportunities for implementation through greater consensus and acceptance



# How to Document your Public and Stakeholder Outreach and In-Kind Hours?



- Track hours spent working on the HMP (outside of meetings with Tetra Tech)
- Track type of outreach you provide to inform residents and stakeholders about the Hazard Mitigation Plan.
- A survey will be emailed to you your input.

Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Press Release	Countywide						Press release issued to several local newspapers

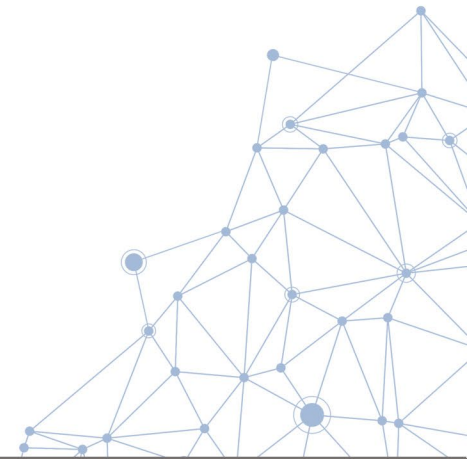


# What are the Benefits for Municipal Participation?

- All municipalities are encouraged to actively participate (and continue to be covered by the countywide HMP).

**Participating = you remain eligible for pre- and post-disaster mitigation funding!**

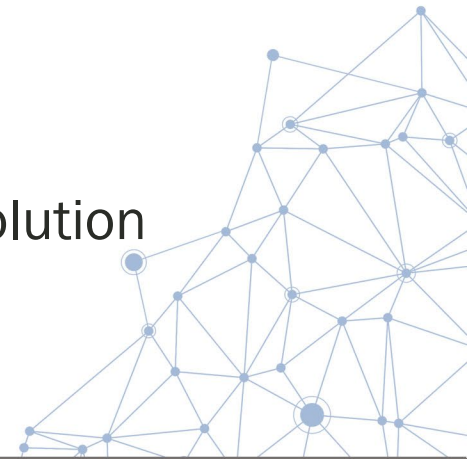
- FEMA has greatly expanded their scrutiny of ‘participation’ since your last plan update...





# How Do You Participate?

- Submit Letter of Intent to Participate (LOIP)
  - LOIPs are required from each municipality
  - It outlines expectations and responsibilities for participating jurisdictions and identifies points of contact
- Assist with the development of your jurisdictional annex
- Attend planning partnership meetings/workshops – like this one!
- Provide data and information in a timely manner
- Support public and stakeholder outreach in your jurisdiction
- Review and provide feedback on Draft and Final Plan documents
- Facilitate the adoption process – governing body must pass an Adoption Resolution
- Implement and Maintain the Plan



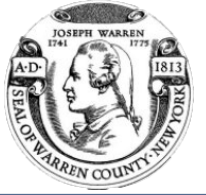


# Who Should be on Your Team?

If you not fully decided who should be on your municipal mitigation team, the following could provide you a better idea on who to invite:

- NFIP Floodplain Administrator
- Building Code Official
- Engineer
- Land Use Planner
- Clerk
- Mayor/Administrator/Supervisor
- Municipal CFO/Fiscal Representative
- Public Works Superintendent/Director
- Police/Fire Official





# List of Worksheets

- Worksheet A - Hazard Event History
- Worksheet B – Capability Assessment
- Worksheet C – National Flood Insurance Program (NFIP) Questionnaire
- Worksheet D – 2017 Mitigation Project Status (Action Plan) Review
- Worksheet E – Development, Building Permits (last 5 years)

	Jurisdiction has <u>this</u> ? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>				
<b>Building Code</b>			State and Local	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
<b>Zoning/Land Use Code</b>			Local	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Consider the following: <ul style="list-style-type: none"> <li>• Prior to zoning changes, or development permitting, does your jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use?</li> <li>• Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains?</li> <li>• Does it contain natural overlay zones that set conditions?</li> <li>• Does the ordinance require developers to take additional actions to mitigate natural hazard risk?</li> <li>• Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?</li> </ul>				
<b>Subdivision Ordinance</b>			Local	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
Consider the following: <ul style="list-style-type: none"> <li>• Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?</li> <li>• Do the regulations provide for conservation subdivisions or cluster subdivisions <u>in order to</u> conserve environmental resources?</li> <li>• Do the regulations allow density transfers where hazard areas exist?</li> </ul>				
<b>Site Plan Ordinance</b>			Local and County	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				
<b>Stormwater Management Ordinance</b>			Local	
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				





# Update Annexes with Your Mitigation Team

- Attend the Worksheet Workshop to review each worksheet:
  - November 16 at 10 am
- Complete worksheets
  - Each worksheet has a suggested department lead
  - Critical asset review by December 9th
  - All worksheets due November 23rd





# Who Should Conduct Your Capability Assessment?



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet B – Capability Assessment

- Planning and Regulatory Capability
- Building Code
- Administrative and Technical Capability
- Fiscal Capability
- Education and Outreach
- Community Classifications
- Adaptive Capacity

This will be reflected in your municipal annex



Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to Cynthia Bianco (Tetra Tech) by November 23, 2022  
Email: [cynthia.bianco@tetratech.com](mailto:cynthia.bianco@tetratech.com)

Municipality: \_\_\_\_\_

Name and Title of  
Individual Completing  
Worksheet: \_\_\_\_\_

Who can assist with completing these tables: Municipal Planner, Clerk, Code Official, Administrator, Chief Fiscal Officer

## Planning and Regulatory Capability

Please complete the following table to summarize the regulatory tools that are available to your community, what is present in the jurisdiction, and code citation and date. For existing regulatory tools, note how it reduces risk to hazards or how it could be updated to better integrate hazard mitigation concepts to reduce risk.

Table 9.1-2. Planning, Legal, and Regulatory Capability and Integration

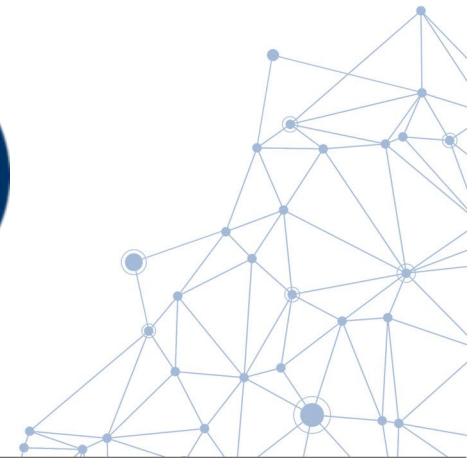
Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>			
<b>Building Code</b>		State and Local	
How has or will this be integrated with the HMP and how does this reduce risk?			
<b>Zoning/Land Use Code</b>		Local	
How has or will this be integrated with the HMP and how does this reduce risk?			
Consider the following:			
<ul style="list-style-type: none"> <li>Prior to zoning changes, or development permitting, does your jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use?</li> <li>Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains?</li> <li>Does it contain natural overlay zones that set conditions?</li> <li>Does the ordinance require developers to take additional actions to mitigate natural hazard risk?</li> <li>Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?</li> </ul>			
<b>Subdivision Ordinance</b>		Local	
How has or will this be integrated with the HMP and how does this reduce risk?			
Consider the following:			
<ul style="list-style-type: none"> <li>Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?</li> <li>Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?</li> <li>Do the regulations allow density transfers where hazard areas exist?</li> </ul>			
<b>Site Plan Ordinance</b>		Local and County	
How has or will this be integrated with the HMP and how does this reduce risk?			

# How to Update Municipal Community Lifelines?



- Review 2017 critical facility inventory to ensure complete using the Survey provided by email.
- Identify your lifelines

***Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security*

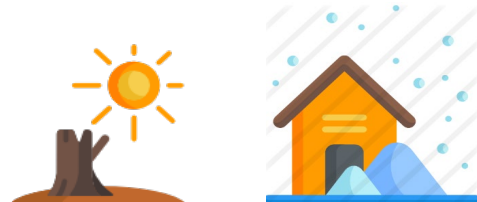




# 2017 Hazards of Concern

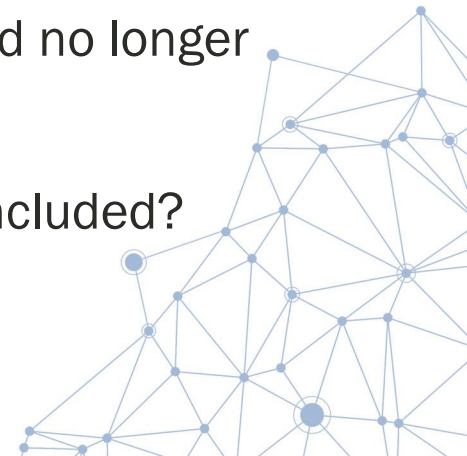
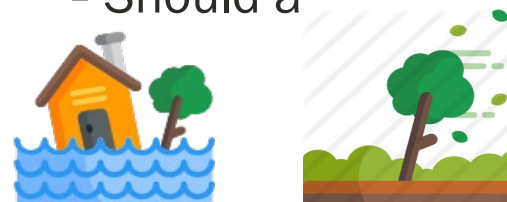
## Natural Hazard of Concern:

- Disease Outbreak
- Earthquake
- Flood (riverine, ice jam, flash)
- Infestation
- Landslide
- Severe Storm (windstorm, thunderstorms, hail, tornados)
- Severe Winter Storm (heavy snow, blizzards, ice storms)
- Wildfire



## Non-Natural Hazards of Concern:

- Cyber Security
- Haz-Mat
- In review...
  - Have additional hazards impacted the County since 2017?
  - Have hazard been mitigated and no longer cause damage?
  - Should hazards be regrouped?
  - Should additional hazards be included?



# Update Risk Assessment

- Update Assets
- Examine Previous Impacts
- Analyze Risks
- Review with Steering Committee
- Risk Assessment Meeting - open to the public








# Review Your Previous Mitigation Strategy

- Determine status of 2017 Mitigation Actions
- The updated mitigation strategy will build on this as well as additional identified issues
- What progress has been made on the 2017 HMP actions?
  - Completed?
    - If yes, describe funding source, funding amount, and details on the project and how it was completed.
  - No progress?
    - Describe why.
    - Is this project still a priority? If yes, we will include in the 2023 Update.
    - If no, we will remove.

 **WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Worksheet D - Mitigation Action Review**  
**MUNICIPALITY**

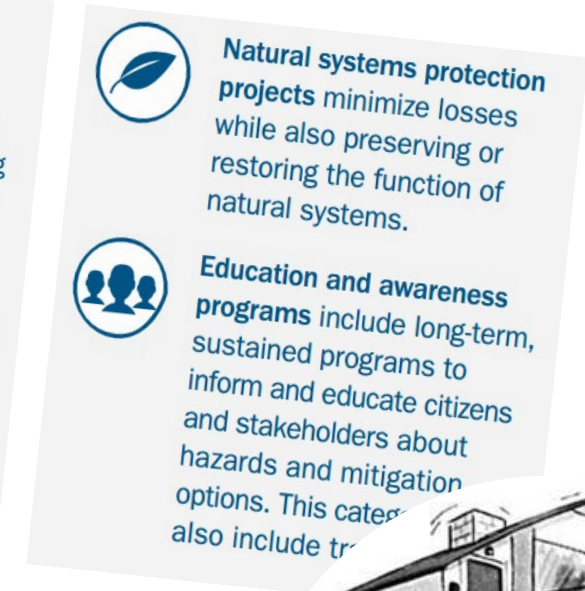
Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (If project status is complete)	1. Next Steps Project to be Included in 2023 HMP or Discontinue
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.

This will be included in your municipal annex



# New Mitigation Actions for the 2023 Update

- Opportunity to add new mitigation actions
- This includes all in-progress grant applications (HMGP generators, CDBG acquisitions, etc.)
- Tips for the 2023 update:
  - Quality NOT quantity
  - Specific not general
  - What can realistically be accomplished in 5 years?
  - Action for every hazard of concern

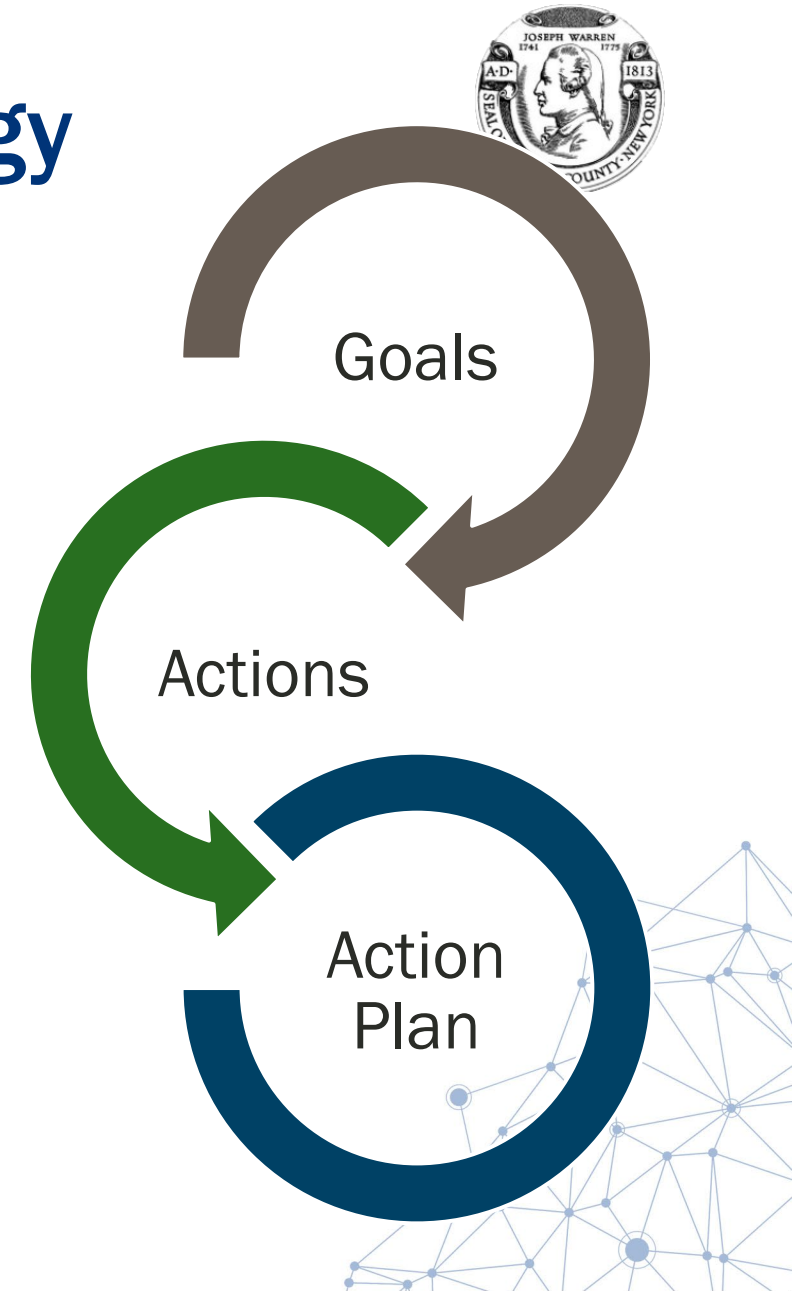


*"At the first sign of a flood, you just push this little button."*



# Connection to the Mitigation Strategy

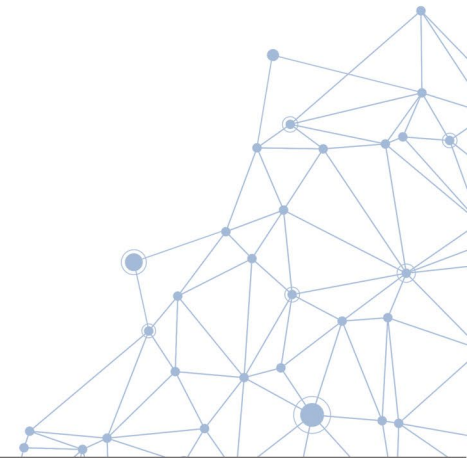
- Need a clear connection between vulnerability and proposed mitigation actions.
- Use the capability assessment to provide insight into challenges/opportunities for the mitigation strategy as well.
- Provide a factual basis for activities proposed in the mitigation strategy.





# What We Need From You

- Attend the upcoming worksheet workshop
  - Worksheet Workshop – November 16 at 10 am
- Review and submit your critical facilities by December 9th
- Complete and return your worksheets
- Start thinking about what new mitigation actions you would like to add to your mitigation strategy.

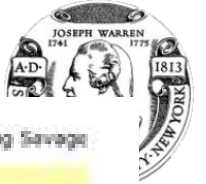


# Schedule

- Planning Process
  - Planning Partnership Kick-Off – TODAY!
  - Confirm critical facility/lifeline inventory by December 9th
  - Worksheets due November 23rd
  - Worksheet Workshop – November 16 at 10 am
  - Update Risk Assessment
  - Begin vulnerability assessment
  - Risk Assessment Meeting – February 2023
- Public Involvement Strategy – ongoing throughout the planning process

*Savage Chickens*


by Doug Savage



[www.savagechickens.com](http://www.savagechickens.com)



# Next Steps

- Determine Hazards of Concern to include in the HMP
- Review Hazard Profiles
- Review Risk Assessment Results
- Identify Problems and Problem Areas
- Develop Mitigation Strategy
- Review Draft Plan
- Submit Draft Plan for DHSES/FEMA Review
- Adopt FEMA-Approved Plan
- Implement Projects and Maintain the Plan  Increase Resilience!



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC, District Manager  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason, Emergency Services Director  
[masona@warrencountyny.gov](mailto:masona@warrencountyny.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Homework Workshop – AGENDA**  
**MEETING DATE/TIME: November 16, 2022 – 10:00 am**



*In-Person/Hybrid Meeting:*

Human Services Building  
3rd floor conference room  
1340 State Route 9, Warren, Lake George, NY

*Virtual: Microsoft Teams Meeting:*  
*Join on your computer or mobile app*

[Click here to join the meeting](#)

Meeting ID: 211 930 051 572

Passcode: 89z58L

Agenda Items

1. Welcome and Introductions
2. Benefits of Hazard Mitigation
3. Hazard Mitigation Planning Overview
4. Project Organization
5. Public and Stakeholder Outreach
6. In-Kind Services Tracking
7. Planning Partnership Responsibilities
8. Community Lifelines/Critical Facilities
9. Update Hazards of Concern and Risk Assessment
10. Goals and Objectives
11. Schedule
12. Questions/Next Steps/Wrap Up



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Purpose of Meeting:	Planning Partnership Meeting
Location of Meeting:	Hybrid In-person and Teleconference Teams Meeting
Date of Meeting:	November 16, 2022, 10:00 am – 11:00 am

Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ann Marie Mason	Warren County, Director Emergency Services
Ethan Gaddy	Warren County Planner/Climate Smart
Josh Westfall	Town of Bolton, Planner
Jennifer Ramsey	Warren County Office of Emergency Services
Jessica Leerkes	Town of Chester
Bill Norton	City of Glens Falls, Superintendent Water and Sewer
Michael N. Geraci	Town of Horicon, Supervisor
Danae Tucker	Town of Johnsbury, Bookkeeper
John Strough	Town of Queensbury
John O'Brien	Town of Queensbury, Director of Building and Code Enforcement
Dave Duell	Town of Queensbury, Highway Superintendent
Deb Runyon	Town of Thurman, Supervisor
Dan Barusch	Town/Village Lake George, Planner
Keith Lanfear	Town/Village Lake George, Superintendent Public Works
Eugene J. Merlino	Town of Lake Luzerne, Town Supervisor
Karen Putney	Town of Lake Luzerne, Zoning Enforcement Officer
Frank E. Thomas	Town of Stoney Creek, Supervisor
Elizabeth O'Reilly	NYSDHSES, Planning Manager
Paul Hoole	FEMA, Mitigation Planning
Cynthia Addonizio-Bianco	Tetra Tech, Inc. (Tt)



# Warren County Hazard Mitigation Plan Update Meeting Notes



**Agenda Summary:** The purpose of the meeting was to provide an overview of information needed to update the local information for the Warren County Hazard Mitigation Plan (HMP) update.

Item No.	Description	Action item(s):
1	<p><b>Overview/Agenda:</b></p> <p>Tetra Tech welcomed the attendees and provided an overview of the agenda which included the following topics:</p> <p>Benefits of hazard mitigation, Planning Partnership responsibilities, Worksheet review and data input, community lifelines and critical facilities, and next steps. Refer to the attached copy of the presentation for details.</p>	
2	<p>Discussion items:</p> <ul style="list-style-type: none"> <li>Worksheet information will be included in the community section or annex of the mitigation plan.</li> <li>Worksheet A: Hazard Event History - it is important to document local natural hazard events that have resulted in damages <i>not limited to named or declared events</i>. For example, if a community has experience localized flooding, note the date, location, and any damages or road closures. This information will help inform the development of projects to reduce future risk and damages.</li> <li>Worksheet B: Capability Assessment – Basic information such as whether or not the planning mechanism, code, or ordinance is in place. Additional information includes the adoption date of the item and a description of how it reduces risk or integrates hazard mitigation into the community activities.</li> <li>Worksheet C: NFIP Questionnaire – This should be completed by the community National Flood Insurance Program Administrator.</li> <li>Worksheet D: Action Review - This has been populated with the mitigation actions from the current plan. Information on the progress of the project is required (is it complete, in progress, no longer relevant?). Also indicate whether the project should be included in the plan update.</li> <li>Worksheet E: Building Permits - A listing of permits for new development since 2017 is required. This will provide an understanding of where development is occurring and if it is occurring in hazard areas. A description of the county permitting activities on behalf of local government will be included in the plan. A potential mitigation action may be to ensure that permits in floodplains are tracked going forward.</li> <li>Mr. Gaddy noted that it may be worthwhile to understand if the NYDEC Unit Management Process addresses elements of mitigation in state owned property management.</li> </ul>	<ul style="list-style-type: none"> <li>Tt to check HMP integration with NYDEC for Unit Management Process</li> </ul>
3	<p><b>Submittal date:</b></p> <p>All municipalities were requested to submit the completed worksheets to <a href="mailto:Cynthia.bianco@tetrattech.com">Cynthia.bianco@tetrattech.com</a> on or before November 23<sup>rd</sup>.</p>	<p>Municipalities to submit worksheets to Tt on or before 11/23/22.</p>



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



4	Questions/Support: Questions should be directed to Cynthia Bianco of Tetra Tech at <a href="mailto:Cynthia.bianco@tetrattech.com">Cynthia.bianco@tetrattech.com</a> or Jim Lieberum of Warren County Soil & Water Conservation district at <a href="mailto:jiml@warrenswcd.org">jiml@warrenswcd.org</a> .	<ul style="list-style-type: none"><li>• Tt to post recording on OneDrive and share the link.</li><li>• Tt to send Presentation to invitees</li></ul>
7	<b>Conclusion</b> - The meeting concluded at 10:55 am.	



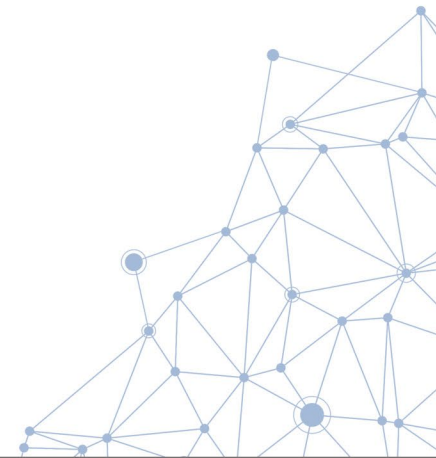
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Homework Workshop | November 16, 2022 10:00am

# Agenda



- 1 Welcome
- 2 Benefits of Hazard Mitigation
- 3 Hazard Mitigation Planning Overview
- 4 Planning Partnership Responsibilities
- 5 Worksheet Review/Data Input
- 6 Community Lifelines/Critical Facilities
- 7 Questions/Next Steps/Wrap Up







# This is the Benefit of Participating in the Plan

By participating AND adopting the hazard mitigation plan:

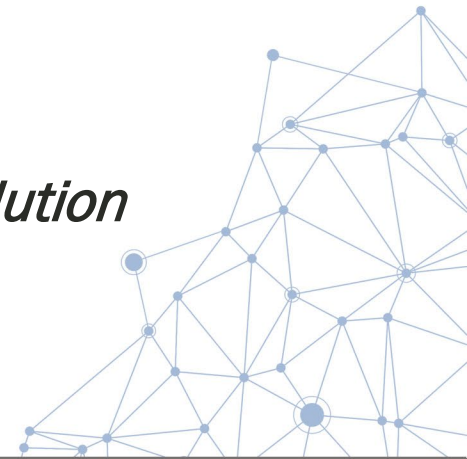
- 1.** Your community remains eligible for pre-disaster mitigation funding!
- 2.** Your plan will help reduce future damages in your community





# How Do You Participate?

- Submit Letter of Intent to Participate
  - If you haven't returned it yet, please do so ASAP!
- ***Provide information about your town or village.***  
(This will be included in your chapter of the plan.)
- Attend planning partnership meetings/workshops
- Provide data and information in a timely manner
- Support public and stakeholder outreach in your jurisdiction
- Review and provide feedback on Draft and Final Plan documents
- Facilitate the adoption process – ***governing body must pass an Adoption Resolution***
- Implement and maintain the Plan

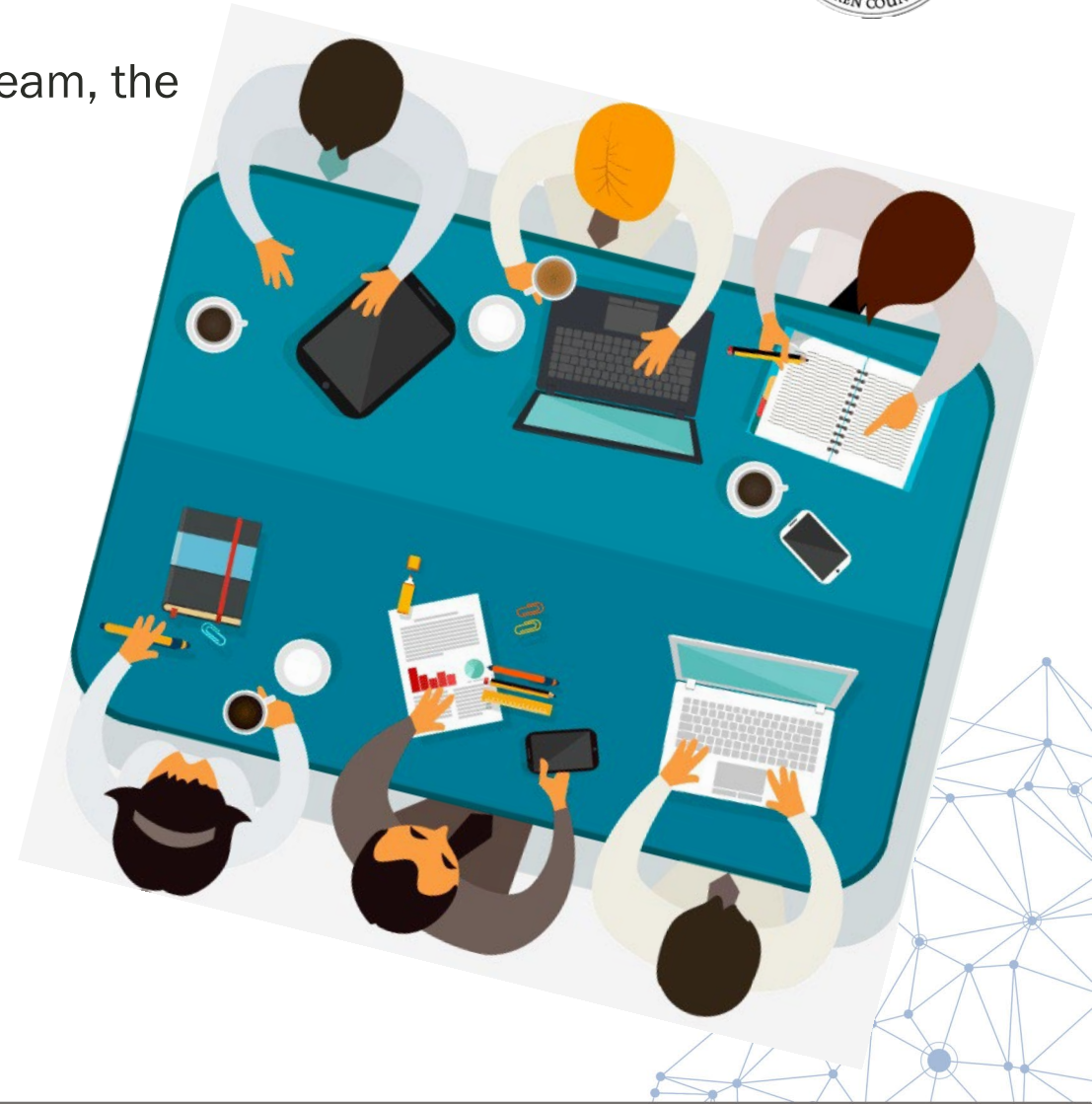




# Assemble Your Mitigation Team!

If you have not fully decided who should be on your municipal team, the following can provide you a better idea on who to invite:

- NFIP Floodplain Administrator
- Building Code Official
- Engineer
- Land Use Planner
- Clerk
- Mayor/Administrator
- Municipal CFO/Fiscal Representative
- Public Works Superintendent/Director
- Police/Fire Official



# What We Your Input!

- Tetra Tech has provided you with worksheets
- Information from the last plan has been pre-populated in your worksheets, as available.
- Your Mitigation Team is responsible for
  - providing updated information
  - reviewing the information from the 2017 plan.
- *This information will be included in your town or village annex*



SECTION 9.2. Town of Bolton

## SECTION 9.

### 9.2 TOWN OF BOLTON

This section presents the jurisdictional annex for the Town of Bolton that provides resources and information to assist public and private sectors to reduce losses from future hazard events. This annex is not guidance of what to do when a disaster occurs. Rather, this annex concentrates on actions to reduce or eliminate damage to property and people that can be implemented prior to a disaster. Information presented includes a general overview of the municipality, who in the TOWN participated in the planning process, an assessment of the Town of Bolton's risk and vulnerability, the different capabilities used in the TOWN, and an action plan that will be implemented to achieve a more resilient community.

#### 9.2.1 Hazard Mitigation Planning Team

The Town of Bolton identified the hazard mitigation plan (HMP) primary and alternate points of contact and developed this plan over the course of several months with input from many TOWN departments, including XXXX. The XXXX represented the community on the Warren County Hazard Mitigation Plan Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

The following table summarizes municipal officials that participated in the development of the annex and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Volume I, Section 3 (Planning Process) and Appendix C (Meeting Documentation).

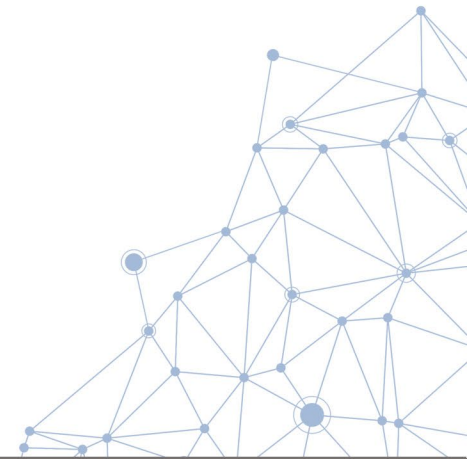
Table 9.1-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Joshua Westfall, AICP Address: 4949 Lake Shore Drive, Bolton Landing, NY 12814 Phone Number: 518-644-2893 Email: Westfall.J@Town.Bolton.NY.US	Name/Title: Richard Miller, PE Address: 4949 Lake Shore Drive, Bolton Landing, NY 12814 Phone Number: 518-644-2893 Email: Miller.R@Town.Bolton.NY.US
<b>NFIP Floodplain Administrator</b>	
Name/Title: Richard Miller, PE Address: 4949 Lake Shore Drive, Bolton Landing, NY 12814 Phone Number: 518-644-2893 Email: Miller.R@Town.Bolton.NY.US	
<b>Additional Contributors</b>	
Name/Title: Method of Participation: Name/Title:	

# Hazard Event History Specific to Your Town or Village



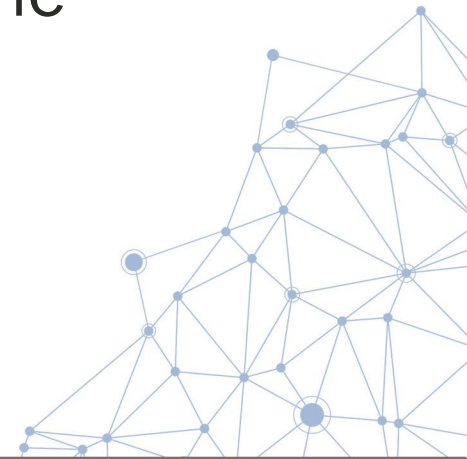
- Describe impactful hazard events that have occurred since 2017
  - When did the event occur?
  - What type of event was it?
  - What are the details of how the event unfolded?
  - How was the community impacted?
    - Damages
    - Closures
    - Injuries/deaths





# HAZARD EVENT HISTORY

- ✓ Fill out contact information.
- ✓ Provide a summary of damages/impacts to the listed events AND note other local hazard events that resulted in damages, closures, or other impacts.
- ✓ Identify other hazard events that have caused damage/losses in your community. Refer to FEMA project worksheets (PWs), overtime records, police/fire reports, repair costs (invoices), etc





# WORKSHEET A – HAZARD EVENT HISTORY



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet A – Hazard Event History

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to Cynthia Bianco (Tetra Tech) by November 23<sup>rd</sup>, 2022.  
Email: cynthia.bianco@tetratech.com

Municipality: Town of Bolton

Name and Title of  
Individual  
Completing  
Worksheet:

Warren County has frequently experienced natural hazard events. Please complete the table below to summarize specific loss and damages experienced during hazard events since the last hazard mitigation plan update (January 1, 2017). Information already populated in the table below is based on County-wide events that resulted in significant damages and losses.

Please update the table to provide a summary of local impacts to the listed events AND note other local hazard events that resulted in damages, closures, or other impacts.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
April 27-28, 2011	Severe Storms, Flooding, Tornadoes and Straight-Line Winds (DR-1993)	Yes	Flooding occurred along the Hudson River in Warren County from North River southward to the Saratoga County line. Numerous reports of flooding. The County had approximately \$676,000 in damages. Nearly two-thirds of the County was damaged. In the Town of Bolton, River Rd. and <del>Highway</del> Roads were closed from flooding. The Town brought in six loads of #4 fill to fix both roads. In addition, there was one washout on <del>Highway</del> Rd., which the Town used two loads of #4 fill to fix.	
May 27 – June 2, 2011	Flooding "Memorial Day Storm"	N/A	Flooding occurred in the County and there was severe damage along a thin line through the County (Stony Creek, Thurman, Warrensburg, <del>Highway</del> and Bolton) that resulted in \$13.125 million in damages. Extensive flood damage to transportation infrastructure occurred throughout the Town of Bolton, including Combs Road Bridge which was washed out. A 30' deep x 50' wide segment of Hendricks Road washed out. Snye Farm Road was completely washed out, along with sections of Trout Falls and <del>Highway</del> Roads. A 4" x 60' culvert on River Rd. was also washed out.	
August 27-29, 2011	Hurricane Irene (DR-4020)	Yes	There was severe wind and flooding damage throughout the County. Very little damage occurred in the Town of Bolton. A few trees came down. The Town Highway Crew worked 15 overtime hours. Highway and Parks Departments kept all the culverts cleaned out.	



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet A – Hazard Event History

May 29, 2012	Hail and Wind	N/A	Debris removal occurred in the County as a result of this event. A generator at a fire station, a patrol car, and the canopy of a patrol boat were all damaged. Very little damage occurred in the Town of Bolton. Clean up was needed for a few downed trees. Highway crews swept debris from roadways.	
October 29, 2012	Hurricane Sandy (EM-9351)	Yes	Heavy rain fell throughout the County. In the Town of Bolton, trees came down in Cotton Point. Highway crews swept debris from roadways.	
October 31 – November 1, 2019	Severe Storms, Straight-line winds, Flooding (DR-4472) "Halloween Storm"	Yes	A strengthening <del>low-pressure</del> system moving from Ohio to Lake Ontario drew anomalous warmth and moisture northward on Halloween, with temperatures surging into the 60s and 70s over eastern New York and western New England. Showers across the southern Adirondacks and Mohawk Valley became steadier and heavier during the evening ahead of a strong cold front as the low continued to strengthen. Strong winds aloft mixed down to the surface as an intense line of showers developed along the front resulting in sporadic wind damage and scattered power outages over eastern New York.	A large swath of rainfall totaling 2-5 inches, with isolated areas as high as 7 inches, occurred over the Mohawk Valley and southern Adirondacks, resulting in reports of flash flooding. The runoff caused rapid rises on area creeks and streams, with river gauges reaching record levels along the Mohawk River at Little Falls, the West Canada Creek at Hinckley and Kaat Bridge, and the Sacandaga River at Hope.
January 20, 2020	Covid-19 (EM-3434)	Yes	As of November 2022, Warren County has experienced over 20,000 positive cases of Covid-19.	

Please identify other hazard events that have caused damage/losses in your community. Refer to FEMA project worksheets (PWs), overtime records, police/fire reports, repair costs (invoices), etc.

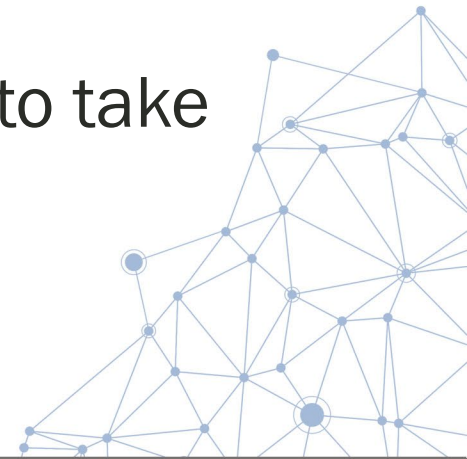
Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses

- ✓ Fill out contact information.
- ✓ Provide a summary of local impacts to the listed events AND note other local hazard events that resulted in damages, closures, or other impacts.
- ✓ Identify other hazard events that have caused damage/losses in your community. Refer to FEMA project worksheets (PWs), overtime records, police/fire reports, repair costs (invoices), etc.



# Recent and Expected Future Development

- List the number of building permits for **NEW construction** issued since 2017
  - Do not include redevelopments or improvements
- List and describe recent **MAJOR DEVELOPMENT** (housing developments, hotels, commercial or industrial development, etc.) that has taken place since 2017
- List and describe **ANTICIPATED MAJOR DEVELOPMENT** likely to take place in the next 5 years.



# WORKSHEET E – RECENT DEVELOPMENT (BUILDING PERMITS)



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet E – Building Permits

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by November 23<sup>rd</sup>, 2022 to:  
Cynthia Bianco, Tetra Tech | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

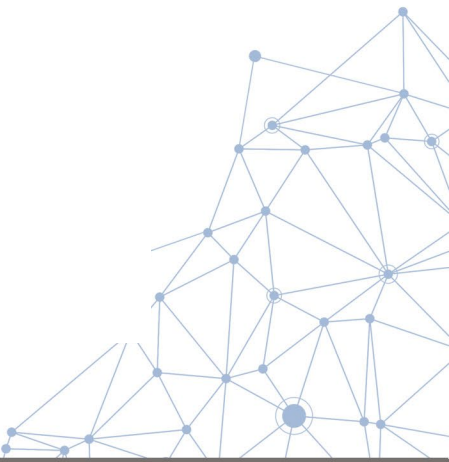
Municipality: Town of Bolton

Name and Title of Individual Completing Worksheet: \_\_\_\_\_

Who can assist with completing these tables: The Building Department, Planning Department, and NFIP Floodplain Administrator

Type of Development	2017		2018		2019		2020		2021		2022	
Number of Building Permits for New Construction Issued Since the Previous HMP* (within regulatory floodplain/ Outside regulatory floodplain)												
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single Family												
Multi-Family												
Other (commercial, mixed-use, etc.)												
Total New Construction Permits Issued												

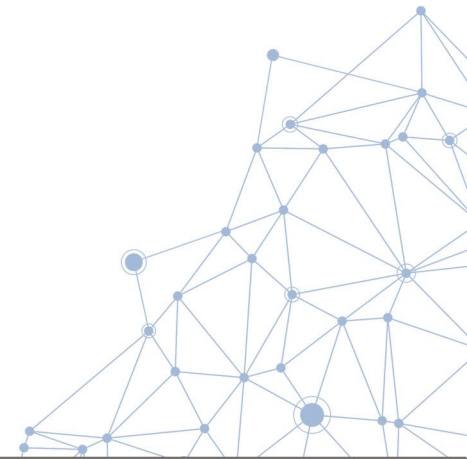
SFHA Special Flood Hazard Area (1% annual chance flood event)  
\* Only location-specific hazard zones or vulnerabilities identified.





# National Flood Insurance Program

- This section should worksheet to be filled Floodplain Administrator for your community.
- Answer the questions regarding NFIP participation and implementation of floodplain administration.
- Provide details where necessary



# WORKSHEET C – FLOODPLAIN ADMINISTRATION QUESTIONNAIRE



Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to  
Cynthia Bianco by November 23<sup>rd</sup>, 2022  
Email: [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)



Municipality: Town of Bolton

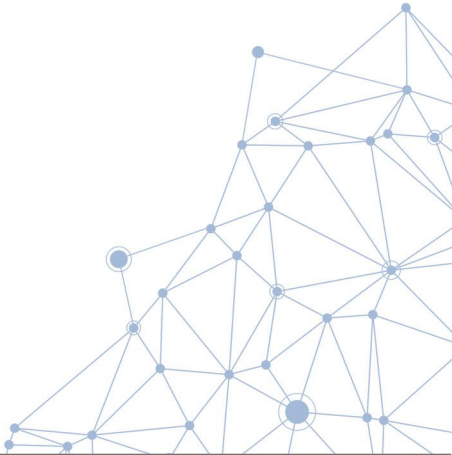
NFIP Floodplain Administrator Name/Title: \_\_\_\_\_



Who can assist with completing this table: NFIP Floodplain Administrator – as identified by role/title in your Flood Damage Prevention Ordinance.



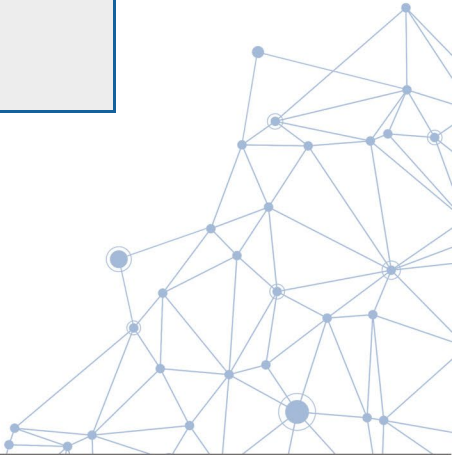
NFIP Topic	Comments
<b>Flood Vulnerability Summary</b>	
Describe areas prone to flooding in your jurisdiction. <ul style="list-style-type: none"><li>Do you maintain a list of properties that have been damaged by flooding?</li></ul>	No
Do you maintain a list of property owners interested in flood mitigation? <ul style="list-style-type: none"><li>How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?</li></ul>	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"><li>If so, state what projects are underway.</li></ul>	-
How do you make Substantial Damage determinations? <ul style="list-style-type: none"><li>How many were declared for recent flood events in your jurisdiction?</li></ul>	No
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"><li>If there are mitigation properties, how were the projects funded?</li></ul>	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"><li>If not, state why.</li></ul>	



# WORKSHEET C – FLOODPLAIN ADMINISTRATION QUESTIONNAIRE



If not, state why.	
<b>NFIP Compliance</b>	
What local department is responsible for floodplain management?	
Are any certified floodplain managers on staff in your jurisdiction?	Yes – Floodplain Administrator
Do you have access to resources to determine possible future flooding conditions from climate change?	Unknown
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	

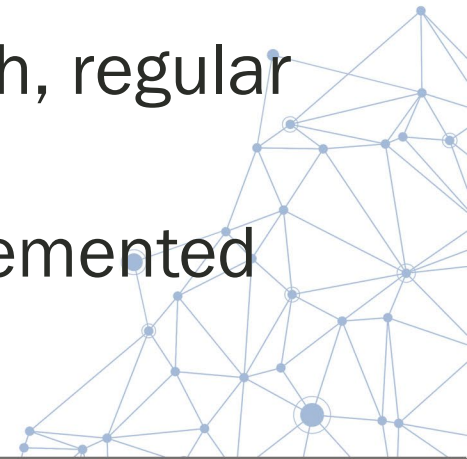






# Status of Previous HMP Mitigation Actions

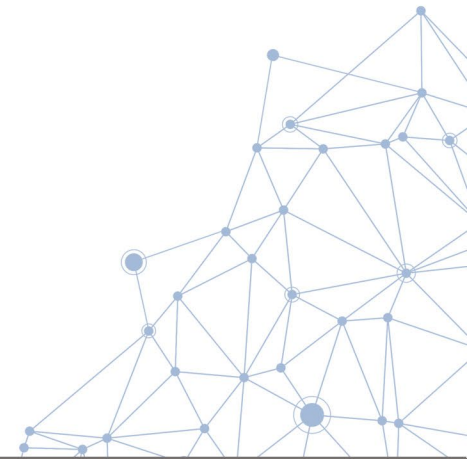
- Report on the status of previous mitigation actions from the 2017 plan.
  - **In Progress:** The action has been started but has not been completed to date.
  - **No Progress:** The action has not been started
  - **Ongoing Capability:** The action has been started and is now part of the municipality's regular or annual operations
    - Examples: Regular stormwater cleaning, annual outreach, regular trainings for staff
  - **Complete:** The action has been 100% completed and implemented





# Status of Previous HMP Mitigation Actions

- Indicate if this action should be included in the 2023
  - In progress actions should be carried over
  - If identified as an ongoing capability, we will include it in the integration section of the annex but not as a 2023 action
  - Completed actions will not be carried over as actions in the 2023 HMP update



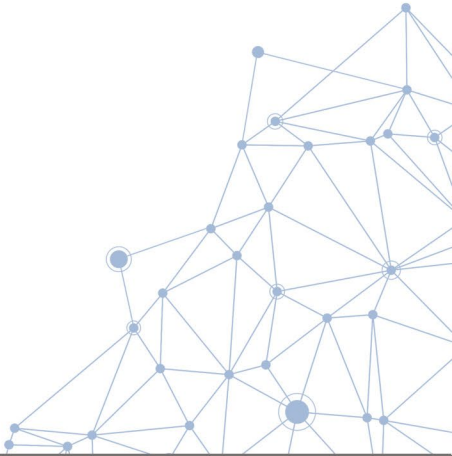
# WORKSHEET D – 2017 MITIGATION ACTION OR PROJECT REVIEW



## WARREN COUNTY HAZARD MITIGATION PLAN UPDATE Worksheet D - Mitigation Action Review Town of Bolton



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)			Next Steps 1. Project to be included in 2023 HMP or Discontinue 2. If including action in the 2023 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	Damages Avoided; Evidence of Success	
1	Develop a Hamlet-wide Stormwater Drainage System plan for the Hamlet of Bolton	Flood		Planning, Town Board	Choose an item.				Choose an item.
2	Adopt and implement the Local Waterfront Revitalization Plan (draft released in <a href="#">July</a> , 2014).	All Hazards		Town Board	Choose an item.				Choose an item.
3	Edgecomb Pond Dam Auxiliary Spillway Development Project: Install an auxiliary spillway for the dam which provides water to hamlet (built-up) area. Drainage easements have been acquired in area where new spillway would be built.	Flood		Bolton Water District, Town Board	Choose an item.				Choose an item.
4	Edgecomb Pond Dam Upgrades: Make structural upgrades and improvements of the existing Edgecomb Pond Dam as called for by the upcoming structural evaluation. The Dam (owned by Bolton Water District) is in need of some improvements. The Town is in the process of contracting for a	Flood		Bolton Water District, Town Board	Choose an item.				Choose an item.





# Status of Previous Mitigation Actions

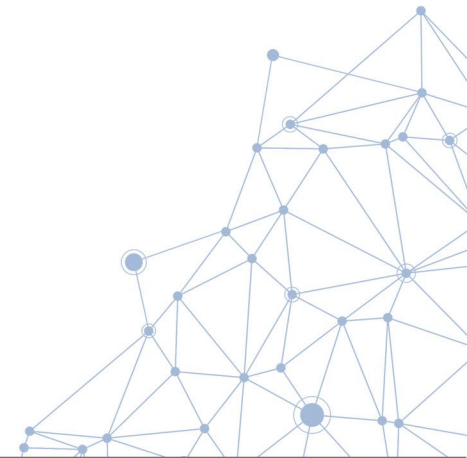
- List any mitigation actions or measures taken since the 2017 plan that were not part of the 2017 mitigation strategy
  - Did you install generators at critical facilities?
  - Upsize culverts or drainage pipes to reduce flooding?



## WARREN COUNTY HAZARD MITIGATION PLAN UPDATE Worksheet D - Mitigation Action Review Town of Bolton



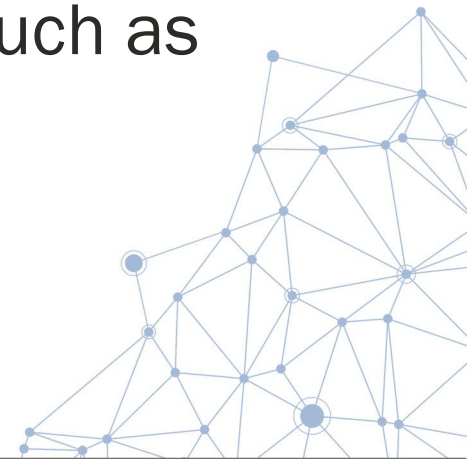
Have you completed, or are there any in-progress or proposed mitigation or resilience projects that are not included in the table above since 2017? If yes, please provide the project details, what the project is mitigating and who is implementing below.





# Identified Issues

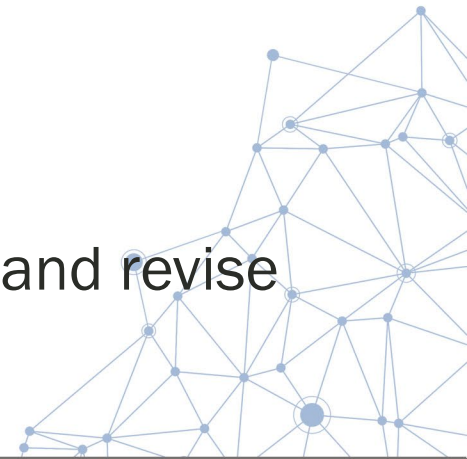
- Where are the problem areas in your community related to damages due to natural hazards?
  - What problems need solving?
  - What solutions need implementation?
  - What projects need funding?
- Tell us about floodprone locations outside of the floodplain such as stormwater/urban flooding areas
- Tell us about areas that experience damages.





# Planning, Legal, and Regulatory Capability

- This table reviews our codes, ordinances, & requirements; planning documents; and response/recovery planning
- Indicate if you have the plan/ordinance/requirement
- Indicate if it already integrates hazard mitigation
  - Tetra Tech has reviewed a majority of your plans, codes and ordinances and updated this section. Please review and revise accordingly.
- Describe the plan/ordinance/requirement
  - Who is in charge of implementation?
  - When was it adopted/updated?
  - How does it integrate hazard mitigation/emergency response?
    - Again, Tetra Tech addressed this during our review. Please review and revise accordingly.

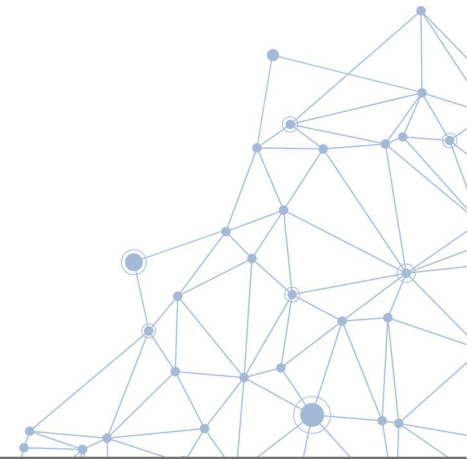






# Hazard Mitigation Planning Team

- Update contact information if necessary
  - Primary Point of Contact
  - Alternate Point of Contact
  - NFIP Floodplain Administrator
- **Remember**, this is a public document so your contact information will also be public.



# WORKSHEET B – CAPABILITY ASSESSMENT



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet B – Capability Assessment

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to Cynthia Bianco (Tetra Tech) by November 23, 2022  
Email: [cynthia.bianco@tetratech.com](mailto:cynthia.bianco@tetratech.com)



Municipality: Town of Bolton  
Name and Title of  
Individual Completing  
Worksheet: \_\_\_\_\_

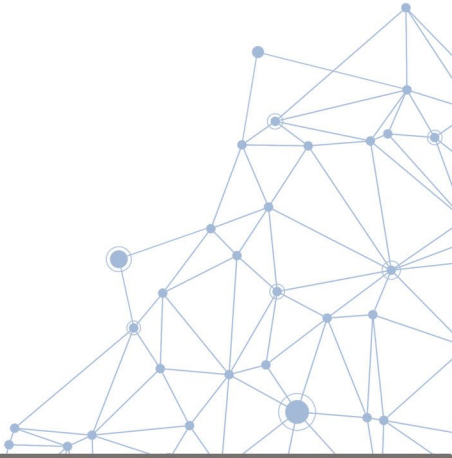
Who can assist with completing these tables: Municipal Planner, Clerk, Code Official, Administrator, Chief Fiscal Officer

## Planning and Regulatory Capability

Please complete the following table to summarize the regulatory tools that are available to your community, what is present in the jurisdiction, and code citation and date. For existing regulatory tools, note how it reduces risk to hazards or how it could be updated to better integrate hazard mitigation concepts to reduce risk.

Table 9.1-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>				
<b>Building Code</b>	Yes	NYS Property Maintenance Code	State and Local	Town Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town of Bolton adopted the New York State Property Maintenance Code in December 2021.				
<b>Zoning/Land Use Code</b>	Yes	Chapter 200 – Zoning	Local	Zoning and Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Zoning Ordinance is in place to promote the health, safety, and general welfare of the community and to protect the property values and aesthetics of the community by channeling and directing growth and by regulating and restricting the height, number of stories and size of buildings and other structures, the percentage of lot that may be occupied, the size of yard, courts and other open spaces, the density of population and the location and use of buildings, structures and land for trade, industry, residence and other purposes, to the maximum extent permissible within the proper exercise of the police power as delegated by the Town Law.  Consider the following: <ul style="list-style-type: none"><li>• Prior to zoning changes, or development permitting, does your jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use?</li><li>• Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains?</li><li>• Does it contain natural overlay zones that set conditions?</li><li>• Does the ordinance require developers to take additional actions to mitigate natural hazard risk?</li><li>• Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?</li></ul>				
<b>Subdivision Ordinance</b>	Yes	Chapter 150 – Subdivision of Land	Local	Zoning and Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				



# Brainstorm New Mitigation Actions for the 2023 HMP Update

- Opportunity to add new mitigation actions
- This includes all in-progress grant applications (HMGP generators, CDBG acquisitions, etc.)
- Tips for the 2023 update:
  - One action for each hazard of concern
  - Quality NOT quantity
  - Specific not general
  - What can realistically be accomplished in 5 years?



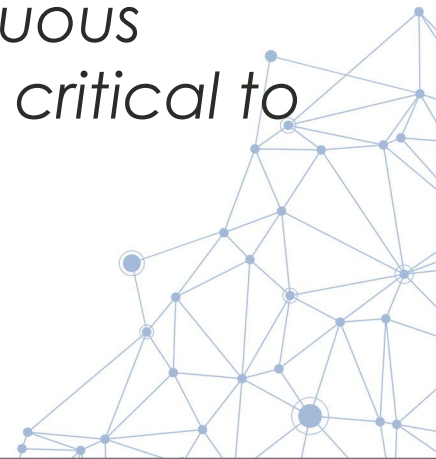
*"At the first sign of a flood, you just push this little button."*





# Critical Facilities and Lifelines

- ✓ **Critical Facilities** are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard
  - ✓ Include essential facilities to ensure a full recovery following the occurrence of a hazard event, transportation systems, lifeline utility systems, high-potential loss facilities, and hazardous material facilities.
- ✓ **Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security

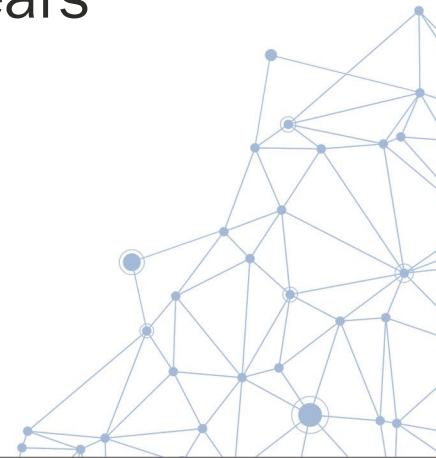






# Critical Facilities and Lifelines

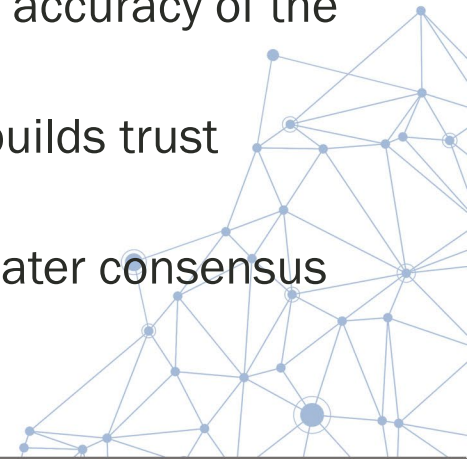
- Tetra Tech will send out the Critical Facilities list to your community for your review – we push back the deadline as necessary (originally October 14<sup>th</sup>)
- Ensure the list is complete
  - Add new critical facilities that have been built/established in the last 5 years
  - Omit critical facilities that have been decommissioned in the last 5 years





# We Need YOU Engaged and Involved!


- *Update your Municipal webpage and link to County's HMP webpage at <https://www.warrencountynewyorkhmp.com>*
  - Social Media Blasts – Tetra Tech will provide you with content and graphics
  - Local Announcements of HMP Update – local papers, newsletters, etc.
  - Local public meetings
  - Draft Plan Review
  - Document *each and every time* you share and engage!
- **Why conduct outreach?**
    - Informs and educates about hazards and risks
    - Invites interested parties to contribute their views and ideas for mitigation
    - Identifies conflicts and incorporates different perspectives and priorities early in the process
    - Provides data and information that improves overall quality and accuracy of the plan
    - Ensures transparency and builds trust
    - Maximizes opportunities for implementation through greater consensus and acceptance





# Remember to Document Your In-Kind Services!



**Warren County HMP - In-Kind Tracker**

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco (cynthia.bianco@tetratech.com | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

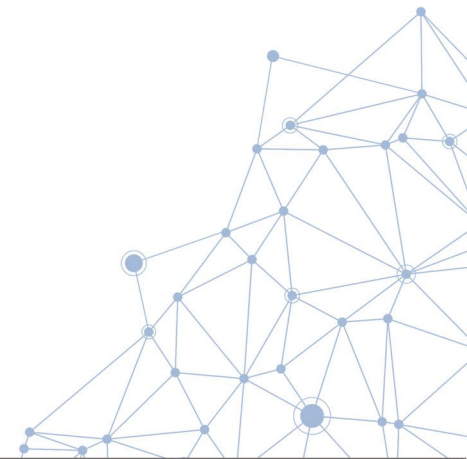
Please document your time spent working on the HMP:

Date	<input type="text"/>
# Hours	<input type="text"/>
Task Description	<input type="text"/>
Comments	<input type="text"/>

Please document your time spent working on the HMP:

Date	<input type="text"/>
# Hours	<input type="text"/>

- Use the on-line survey to document your in-kind hours worked on the hazard mitigation plan:  
<https://www.surveymonkey.com/r/WarrenNYHMPInKind>



# Schedule

- Planning Process
  - Confirm critical facility/lifeline inventory by December 9th
  - Worksheets due November 23rd
  - Worksheet Workshop – today!
  - Update Risk Assessment
  - Begin vulnerability assessment
  - Risk Assessment Meeting – February 2023
- Public Involvement Strategy – ongoing throughout the planning process
  - Mitigation Strategy
    - Mitigation Strategy Workshop
    - Draft Plan to Steering Committee by May 2023
  - Final draft plan to NYSDHSES and FEMA by August 2023



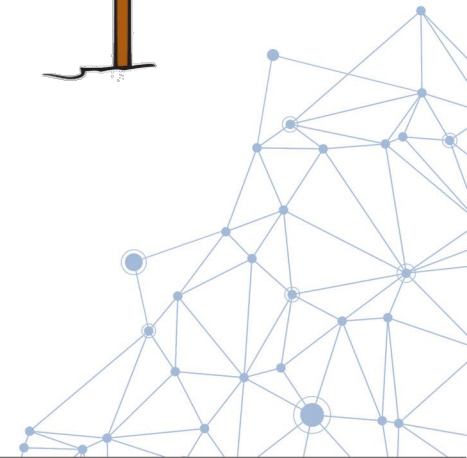
## Savage Chickens

by Doug Savage



# Next Steps

- COMPLETE THE WORKSHEETS
  - Use Tetra Tech to answer any questions you may have!
- Review Risk Assessment Results
- Identify Problems and Problem Areas
- Develop Mitigation Strategy
- Review Draft Plan
- Submit Draft Plan for NYSDHSES/FEMA Review
- Adopt FEMA-Approved Plan
- Implement Projects and Maintain the Plan ➡ Increase Resilience!



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC, District Manager  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason, Emergency Services Director  
[masona@warrencountyny.gov](mailto:masona@warrencountyny.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #2 – AGENDA**  
**MEETING DATE/TIME: December 14, 2022 – 10:00 am**



Remote – MS Teams Link [Click here to join the meeting](#) (preferred for screen sharing)

Remote – Dial-in by phone (audio only) - [+1 518-300-1367,,503640440#](#) United States, Albany; Phone Conference ID: 503 640 440#

- Welcome
- Committee Responsibilities
- Progress Report
- Public and Stakeholder Outreach
- Data Collection - Plans and Reports
- Critical Facilities and Lifelines Review
- Confirmation of Hazards of Concern
- Goals and Objectives Updates
- SWOO (Strengths, Weaknesses, Obstacles, Opportunities)
- In-Kind Services Tracking
- Schedule
- Next Steps/ Questions/ Wrap Up





# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Teleconference Teams Meeting
Date of Meeting:	December 14, 2022, 10:00 am

## Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ethan Gaddy	Warren County Planning Department, CSC
Sandy LeBarron	Finch Pruyn, Director of Environmental Health, and Safety
Tammie DeLorenzo	Warren County Administrators Office
James Schrammel	City of Glens Falls, Fire Chief
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Don Lehman	Warren County Public Information Officer
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to confirm Hazards of Concern, Update Mission Statement, Goals and Objectives, and facilitate a SWOO.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation. The process is on track for plan submittal to FEMA in August 2023. Tetra Tech will begin the vulnerability analysis once the final municipal critical facility input is received from the local jurisdictions. Steering committee responsibilities include guiding the planning process and confirming the hazards of concern to include in the plan as well as the updated goals and objectives. GIS data collection is complete with support from the County GIS staff. The steering committee was provided with a list of plans gathered to date and requested to provide any additional relevant plans.</li> </ul>	Committee to review the list of plans collected to date and provide any additional relevant plans.
2	<b>Outreach</b> <ul style="list-style-type: none"> <li>The HMP website is now live at <a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a> and public outreach materials are available for distribution. All communities in the county have confirmed their intent to participate in the planning process.</li> <li>The county sent out a press release this month and a couple of local weekly newspapers published articles regarding the mitigation plan and provided access to the public survey.</li> </ul>	<ul style="list-style-type: none"> <li>Tt to provide a social media package to municipalities to enable further online outreach.</li> <li>Tt to contact Warren County (WC) Chamber of Commerce for business email distribution lists.</li> </ul>



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>One citizen has contacted Warren County Soil &amp; Water Conservation District (WCSWCD) to discuss concerns related to hazard mitigation and will meet with Mr. Lieberum to discuss.</li><li>Tt requested email lists to support the stakeholder outreach and distribution of surveys to agencies including health services, police, fire, EMS, etc. WC Emergency Services, Glens Falls Hospital will provide available information. Tt to contact the Chamber of Commerce to distribute surveys to county businesses.</li></ul>	
3	<b>Hazards of Concern</b> <ul style="list-style-type: none"><li>The committee confirmed that the following hazard of concern pose significant risk to the county and its communities:<ul style="list-style-type: none"><li>Disease Outbreak (including Covid-19, influenza, and tick-borne illnesses)</li><li>Earthquake</li><li>Extreme Temperatures</li><li>Flood</li><li>High Hazard Potential Dams</li><li>Infestation</li><li>Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)</li><li>Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)</li><li>Wildfire</li></ul></li></ul> <p>These hazards will be profiled for the plan to provide a basis for the vulnerability assessment and the development of mitigation actions.</p>	
4	<b>Goals and Objectives</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco shared the goals and objectives from the last HMP noting updates to include changes identified in the last committee meeting as well as additional edits to align with current priorities. During the discussion additional edits were made and are available in the attached document. The updated mission statement, goals and objectives will guide the plan update.</li></ul>	
5	<b>Strengths, Weaknesses, Obstacles, and Opportunities (SWOO)</b> <ul style="list-style-type: none"><li>Tt provided an overview of the purpose of the SWOO which is to review the hazards of concern to identify areas that the county and communities do well and can improve upon, and to further understand obstacles to implementing policy, actions, and projects to mitigate the effects of the hazards – all with the intent of identifying actions or projects to support resilience. The committee reviewed examples related to the flood hazard and participated in a discussion of county-specific issues. The committee members were requested to access and respond to the SWOO survey to document their input. Attached is the SWOO survey input received as of the date of this meeting.</li></ul>	<ul style="list-style-type: none"><li>The committee is requested to provide input to the SWOO survey to assist in identifying problem areas and mitigation actions.</li></ul>
6	<b>Upcoming Meetings</b>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>Dates for the following meetings will be confirmed and shared with the committee in January:<ul style="list-style-type: none"><li>Risk Assessment Meeting – February 2023</li><li>Planning Partnership Risk Assessment Meeting – February 2023 (tentative)</li><li>Mitigation Strategy Workshop – March 2023</li></ul></li></ul>	
7	<b>Next Steps</b> <ul style="list-style-type: none"><li>Provide input via Strengths, Weaknesses, Obstacles and Opportunities (SWOO) survey</li><li>Review Hazard Profiles</li><li>Review Risk Assessment Results</li><li>Identify Problems and Problem Areas</li><li>Develop Mitigation Strategy</li><li>Review Draft Plan</li><li>Submit Draft Plan for NYSDHSES/FEMA Review</li><li>Adopt FEMA-Approved Plan</li><li>Implement Projects and Maintain the Plan and Increase Resilience</li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 11:25 am.	

# Warren County, New York Hazard Mitigation Plan – 2023 Update

**Steering Committee #2 Meeting | December 14, 2022 | 10:00 – 11:30 AM**

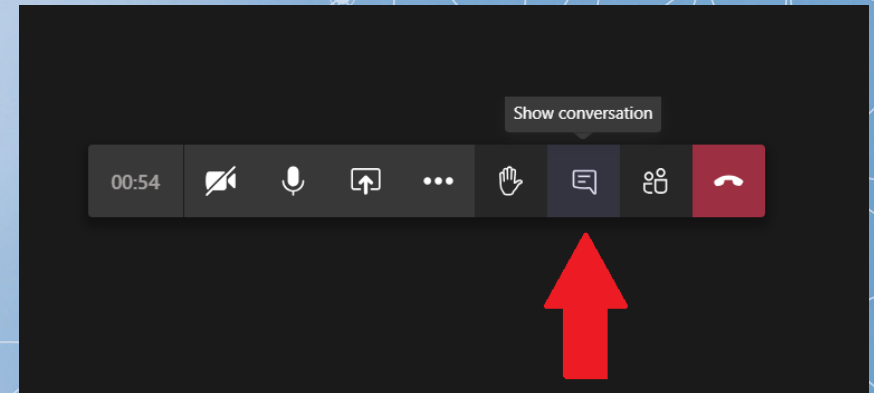
## ***WELCOME!***

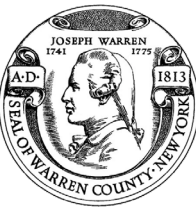
*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

Bring your mouse to the lower part of the screen until a set of buttons appears. They may also be at the top of your screen.

Click “Show Conversation” and type in your information.

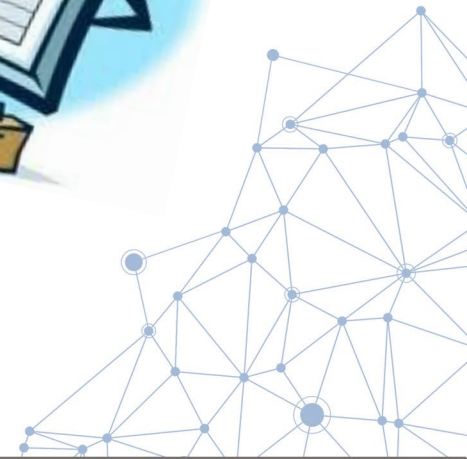
This will assist in our attendance documentation.





# Agenda

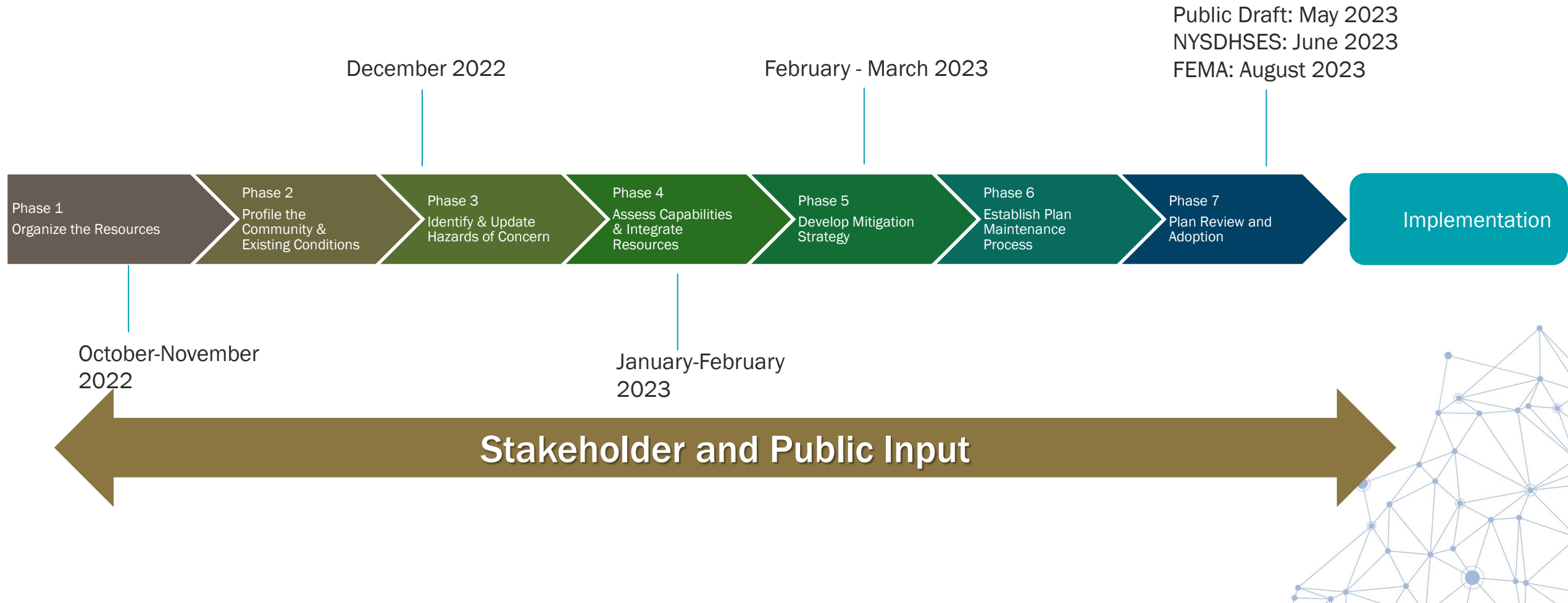
- Welcome
- Committee Responsibilities
- Progress Report
- Data Collection - Plans and Reports
- Critical Facilities and Lifelines Review
- Confirmation of Hazards of Concern
- Goals and Objectives Updates
- Public and Stakeholder Outreach
- SWOO (Strengths, Weaknesses, Obstacles, Opportunities)
- In-Kind Services Tracking
- Schedule
- Next Steps/ Questions/ Wrap Up







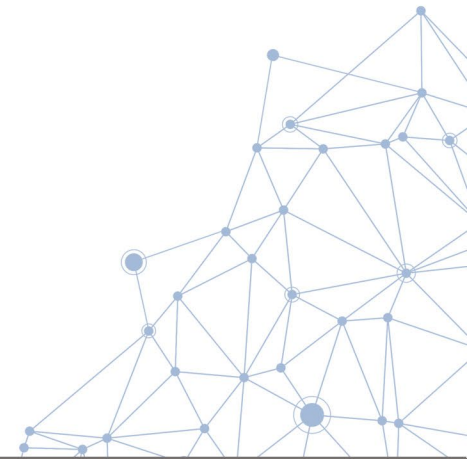
# Where are we in the Process?





# Steering Committee Responsibilities

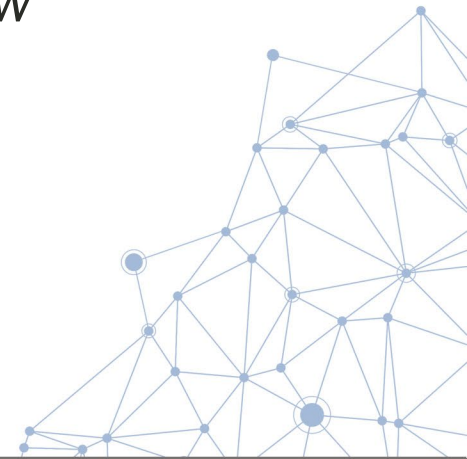
- ✓ Guide the Planning Partnership through the planning process
- ✓ Identify the natural hazards of concern
- ✓ Develop mitigation goals and objectives
- ✓ Develop public and stakeholder outreach strategy
- ✓ Support the development of the county-level mitigation strategy
- ✓ Review plan documents





# Progress

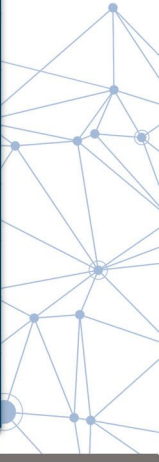
- Requested NFIP Data
- GIS Data Collection - *Complete*
- Critical Facility Survey for Municipal Input – *In progress*
- Review of Hazards of Concern/Input by Steering Committee – *Today*
- HMP website, HMP Fact Sheet, Citizen Survey, Agency Surveys - *Complete*
- County-Level/Regional Plan Collection – *For Steering Committee Review*
- Planning Partnership Participation – 100%



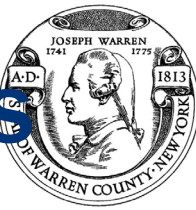


# Data Collection Status

Jurisdiction	Worksheet A - Hazard Event History	Worksheet B - Capability Assessment	Worksheet C - NFIP	Worksheet D - Action Review	Worksheet E - Building Permits
Warren County	X	X	N/A	X	X
Town of Bolton	X	X	X	X	
Town of Chester	X	X	X	X	X
City of Glens Falls					
Town of Hague	X	X	X	X	X
Town of Horicon					
Town of Johnsbury	X	X	X	X	X
Town of Lake George	X	X	X	X	X
Village of Lake George	X	X	X	X	X
Town of Lake Luzerne	X	X	X	X	X
Town of Queensbury	X	X	X	X	X
Town of Stony Creek	X	X	X	X	X
Town of Thurman	X	X	X	X	X
Town of Warrensburg	X	X	X	X	X



# Relevant County and Regional Plans and Studies



Name of Plan/Document	Date of Plan	Jurisdiction
Excessive Heat Plan	2022	Countywide
Schroon Lake Watershed Management Plan Addendum	2019	Chester (T)
Lake Champlain Watershed Roadside Erosion Assessment	-	Bolton (T), Hague (T), Lake George (T), Queensbury (T)
Upper Hudson River Watershed Management Plan	2020	Countywide
Friends Lake Watershed Assessment	2017	Chester (T)
LC Nonpoint Source Pollution Watershed Assessment and Management Plan	2018	Countywide
LG HAB Plan 2022 Update	2022	Lake George (T), Bolton (T)
Loon Lake Watershed Report	2021	Loon Lake, Chester (T)
Warren County - Dam Risk into Local HMG Plans	2021	Countywide

- *Summary matrix including local plans sent to committee for review .*





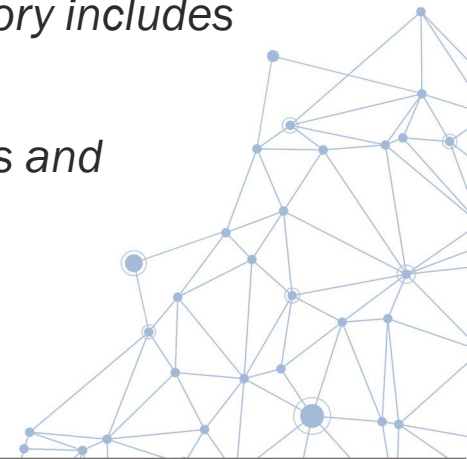
# Critical Facilities and Community Lifelines

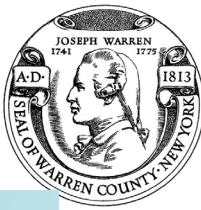
- Municipalities to review the updated critical facility inventory to ensure complete
- Critical facility survey distributed to communities on 12/8 with input due on or before 12/21/22.

***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 lifelines 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 includes police, fire, EMS, schools/colleges, shelters, senior facilities, and medical facilities.*

***Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security*





# Identifying Hazards of Concern

- The 2017 plan included:
  - Disease Outbreak (Influenza, Ebola, Zika)
  - Earthquake
  - Flood
  - Infestation
  - **Landslide**
  - Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
  - Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
  - Wildfire
- In review...
  - Have additional hazards impacted the County since 2017?
  - Have hazard been mitigated and no longer cause damage?
  - Should hazards be regrouped to minimize number or required actions?
  - Should additional hazards be included?

## 2023 Hazards to Consider

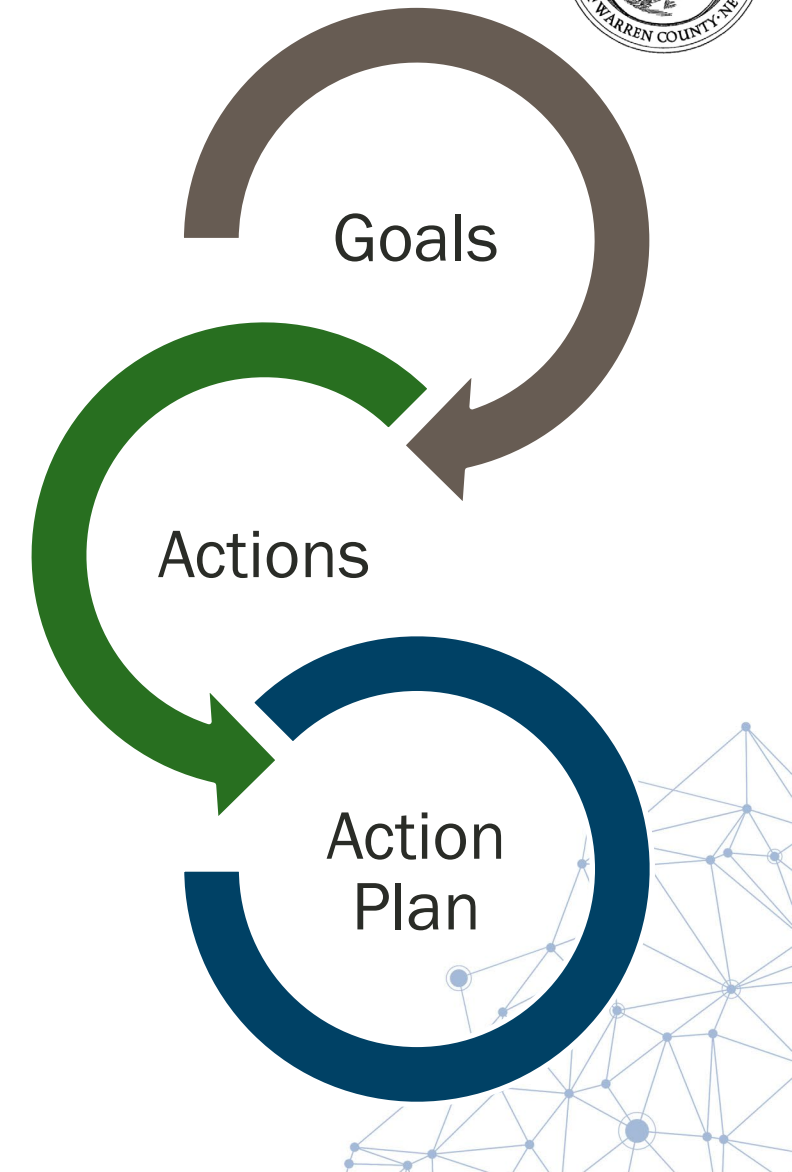
- **Disease Outbreak**
- Earthquake
- Extreme Temperatures
- Flood
- High Hazard Potential Dams
- Infestation
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire





# Mitigation Strategy

- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce risk from hazards?
- Action Plan
  - How will the actions be prioritized and implemented?



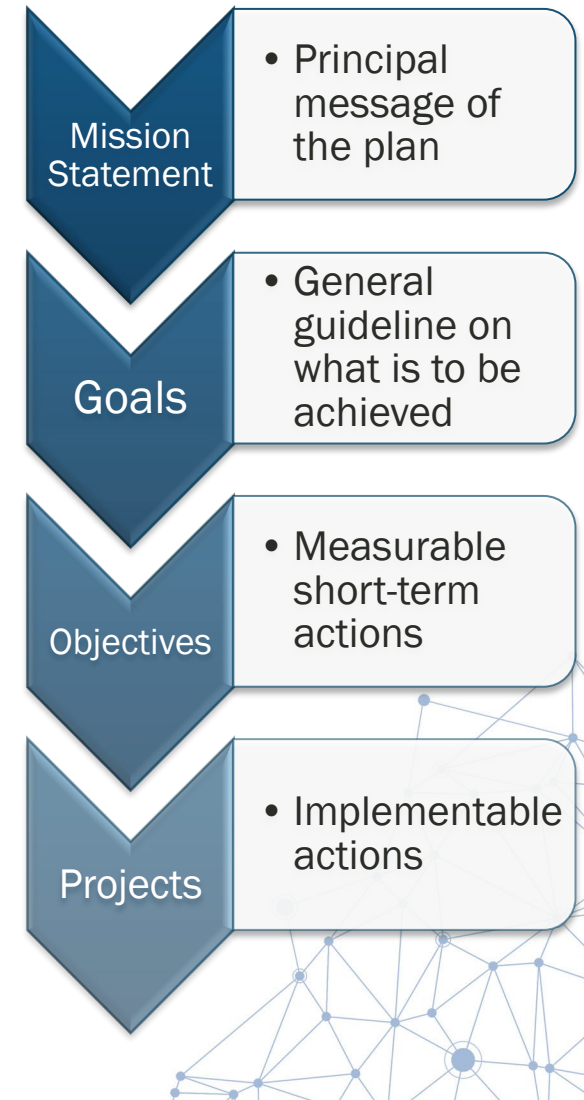


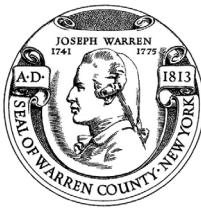
# Update Mission Statement?

As part the of the 2017 update process, the Steering Committee reviewed the mission statement and elected to maintain it without edit or amendment, as noted below. At this time, the committee is requested to review the Mission Statement to update to align with current County, state, and local policy. The committee is requested to consider adding the concept of equity and inclusiveness of socially vulnerable populations to the mission statement and the goals and objectives as well as additional adjustments to align with count, state, and local policy.

## *HMP Mission Statement*

*To create communities whose daily activities reflect a comprehensive commitment by government, business, non-profit organizations, **socially vulnerable populations** and the public to eliminate or reduce risks and adverse impacts from natural, **technological** and human-caused hazards .*





# Goals and Objectives Review and Update

Goal	Objective
<u>Goal 1:</u>  Protect Life and Property.	1.1: Introduce mitigation and adaptation activities that will make homes, businesses and critical facilities and infrastructure more hazard resistant and to increase resilience.
	1.2: In areas vulnerable to hazards, encourage businesses and homeowners to take preventive actions when possible and in an equitable manner.
	1.3: Periodically review existing building codes, safety procedures, municipal and county ordinances to update recent standards for building protection.
	1.4: Immediately enforce existing building codes, zoning ordinances, and floodplain development review and permitting within the jurisdictions.
	1.5: Encourage owners of home and businesses and renters to purchase appropriate insurance coverage for potential damages from hazards.
<u>Goal 2:</u>  Increase Public Awareness	2.1: Continue developing and integrating education and outreach programs in an effort to enhance public awareness of the hazards, and availability of information on specific activities for individuals in anticipation of a hazard event .
	2.2: Provide information on current government programs and funding resources to assist with mitigation and resilience.
	2.3: Strengthen communication and cooperation between public agencies, citizens, non-profit groups, and businesses to implement mitigation activities effectively.





# Goals and Objectives Review and Update

Goal	Objective
<u>Goal 3:</u> Provide for Emergency Services	3.1: Coordinate hazard mitigation activities with existing local emergency plans.
	3.2: Identify and plan for acquiring any specific emergency services and equipment needed to improve response capabilities for specific hazards.
	3.3: Review emergency traffic routes, making changes as needed, and educating the public as to the routes <b>including use of mass notification systems and real-time storm and problem area reporting.</b>
<u>Goal 4:</u>  Support comprehensive county and local mitigation through the integration of hazard mitigation planning into related state, regional, county and local plans and programs.	4.1: Promote land use planning to encourage resilient and sustainable efforts throughout statewide and regional programs that address zoning, building codes, capital improvement programs, open space preservation, nature-based solutions, and storm water management regulations. <b>Encourage integration of mitigation via review and update of local planning documents to be consistent with and relevant to the Hazard Mitigation Plan.</b>
	4.2: Continue to participate in state, regional and local programs and efforts that focus on practices that support or enhance resiliency.
	4.3: Improve hazard data through participation in studies, research, and mapping to enhance information related to the impacts of hazards and related risks, vulnerability, and losses.





# Goals and Objectives Review and Update

Goal	Objective
<u>Goal 5:</u>  Encourage the development and implementation of long-term, cost-effective, and resilient mitigation projects to preserve or restore the functions of natural systems.	5.1: Encourage the use of green and natural infrastructure, <b>low impact development, and</b> nature-based solutions.
	5.2: Provide technical assistance to communities and stakeholders in the application and implementation of mitigation projects that preserve or restore natural systems.
	5.3: Maintain and encourage ongoing relationships between state agencies and partners to play an active and vital role in preservation and restoration of vulnerable natural systems.
	5.4: Promote climate change adaption strategies that protect against long-term effects on the environment <b>and incorporate into a county-wide climate action plan.</b>
<u>Goal 6:</u>  <b>Address Long-Term Vulnerabilities from High Hazard Dams</b>	<b>6.1: Ensure dam infrastructure is maintained</b>
	<b>6.2: Ensure Emergency Action Plans are developed and updated</b>
	<b>6.3: Support the identification and access to funding to repair/replace dams</b>



# Public and Stakeholder Outreach

- HMP website is LIVE!

<https://www.warrencountynewyorkhmp.com>




- Social Media
- Stakeholder Survey
- Public Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey

**NORTH COUNTRY**

## Input needed on natural disasters in Warren County

by: Jay Petreaula  
Posted: Dec 9, 2022 / 11:54 AM EST  
Updated: Dec 9, 2022 / 12:03 PM EST

Severe damage to the driveway of Fairview Association, along Lake

SHARE    ...

WARREN COUNTY, N.Y. (NEWS10) – It's important to know and understand what potential hazards could come with where one lives, and what different weather conditions can bring to those areas. Warren County is looking for public input as it makes updates to its plan to curb natural disaster danger for county residents.

**Get the latest news, weather, sports and community events delivered right to your inbox!**

The county's Multi-Jurisdictional Hazard Mitigation Plan is up for revision – and a survey gives residents a chance to weigh in on it. The plan is a document that can be used by the county to reduce the impact and damage from natural disasters, especially targeted at prevention and

**NY Weather** ▾ **Traffic** **Watch Live News** ▾ **Sports** ▾ **Jobs** ▾

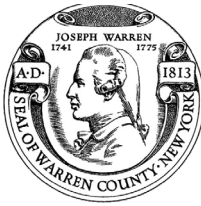
"Public participation and feedback are a vital part of the hazard mitigation planning process," said Warren County Emergency Services Director Ann Marie Mason. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."

The survey asks for residents to report what types of natural disasters they have seen and experienced in Warren County over the last decade, such as flooding, drought and climate change impacts. It also seeks information such as concern for future disasters, and how residents get their disaster information.

**ARPA lets Glens Falls Hospital's crisis unit grow**

The Hazard Mitigation Plan is updated every five years. The plan is used for communities to make risk-based decisions that can lead to fewer lives being lost, or less property being damaged, in the event of a disaster. The process going forward will also involve voices from nonprofits, community partners and the private sector. The plan will analyze how best to protect essential community facilities, transportation systems, lifeline utilities and hazardous material facilities.

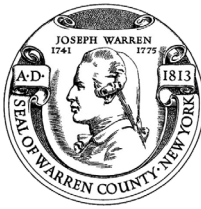




# Strengths, Weaknesses, Obstacles, and Opportunities (SWOO)

*The purpose of the SWOO is to identify mitigation strategies and capabilities that will meet the goals and objectives of the plan update. It is also used to develop potential mitigation actions for the participating jurisdictions.*

- Strengths – what we do well
- Weaknesses – what could we do better
- Obstacles – things that stand in the way, and either prevents you from doing something or something that need to be overcome
- Opportunities – used to develop mitigation strategies

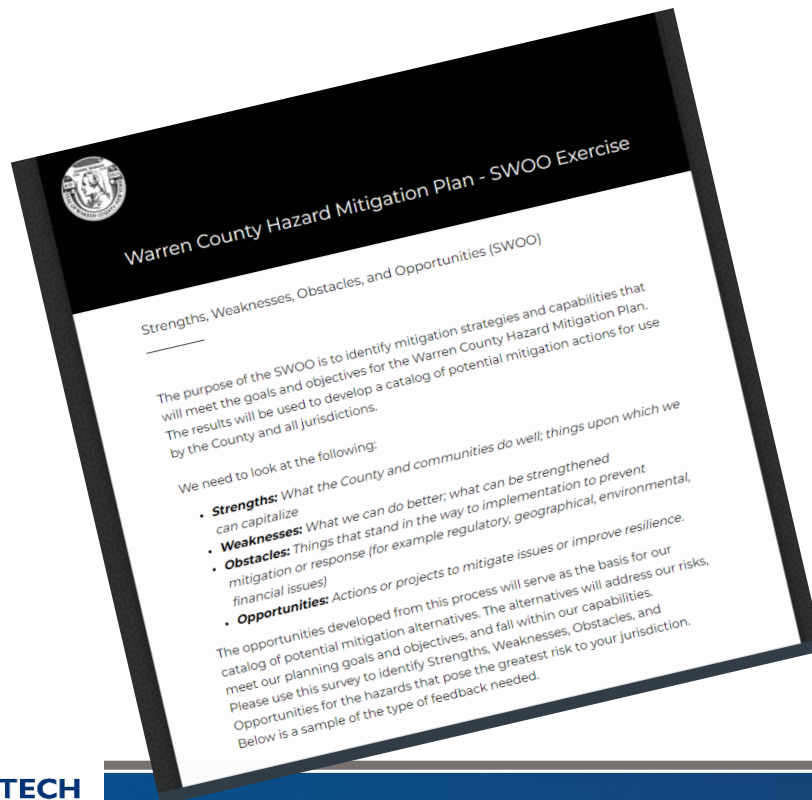


# SWOO EXERCISE

## Strengths, Weaknesses, Obstacles and Opportunities

Thinking about hazards of concern and any new hazards for this update...what are some strengths, weaknesses, obstacles and opportunities the County has for each? Complete the form.

*Here are some examples to help brainstorm:*

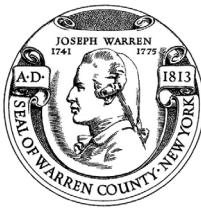


Hazard: Flood	
S	Minimal exposure to flood risk
W	Silt and debris buildup in streams can lead to localized flooding
Ob	Funding for culvert and catch basin maintenance
Opps	Installing stream gages

Hazard: Severe Storms	
S	Tree trimming programs are in place
W	Aging infrastructure; lack of underground utilities
Ob	Cost to retrofit existing utility infrastructure
Opps	Underground utilities; enhance public outreach program

Hazard: Severe Winter Storm	
S	Municipalities have the resources and experience to deal with winter weather
W	Aging equipment
Ob	Funding; limited staff for prolonged events
Opps	Shared services

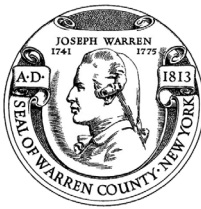




# 2020 SW00 Discussion/Example

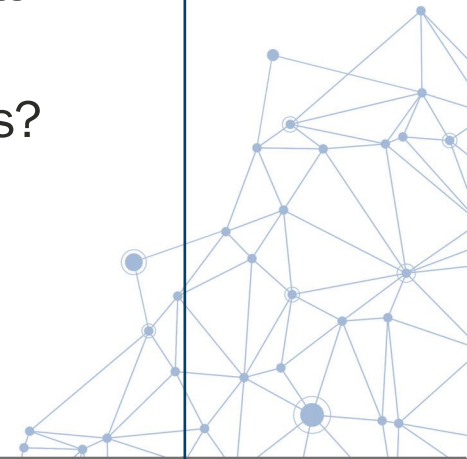
Flood	
Strengths	Weaknesses
<p>What do the County/Communities do well in terms of:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>	<p>What can the County/Communities do better or what are identified gaps in terms of:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>





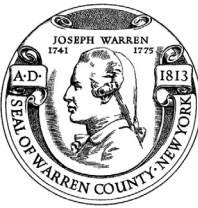
# 2020 SW00 Discussion/Example

Flood	
Obstacles	Opportunities
<p>What is preventing the County/Communities to implement:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>	<p>What can the County/Communities implement terms of:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>





# In-Kind Services



- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at jim1@warrenswcd.org

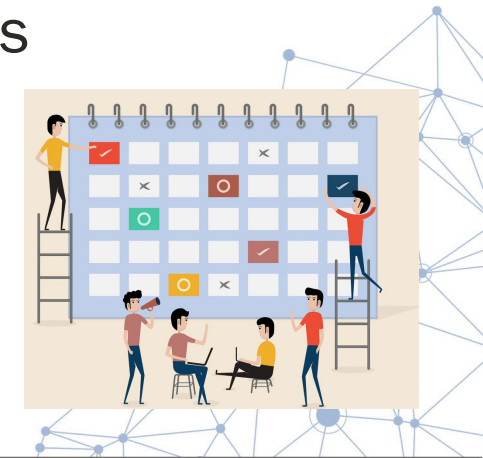
Name of Team Member: _____							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes – sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	

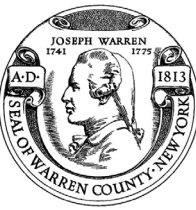




# Schedule

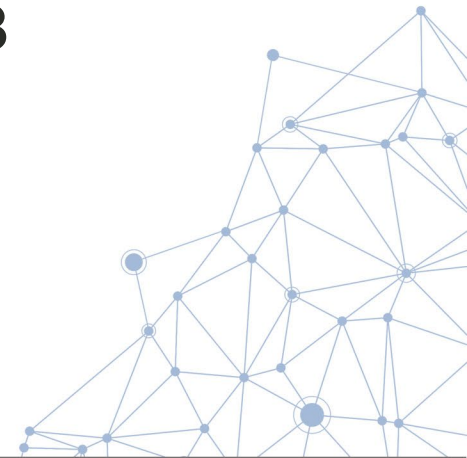
- Planning Process
  - Steering Committee #2 to identify hazards of concern for County and finalize goals– TODAY!
- Update Risk Assessment
  - Data collection is underway; confirm local critical facilities inventory by December 21, 2022
  - Begin vulnerability assessment
  - Risk Assessment Meetings: February (Steering Committee and Planning Partnership)
- Public Involvement Strategy – ongoing throughout the planning process





# Schedule

- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 2023**
- Draft Plan to Steering Committee in **May-June 2023** *(as sections are ready)*
- Public Review Period (30 days) – **June 2023**
- Final draft plan to NYSDHSES by June 2023 and FEMA by **August 2023**



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!



**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #3 – AGENDA**  
**MEETING DATE/TIME: February 10, 2023 – 10:00 am**



- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	February 8, 2023, 10:00 am

Attendees:

Ann Marie Mason	Director, Warren County Office of Emergency Services
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ethan Gaddy	Warren County Planning Department, CSC
Aaron Frankenfeld	Director, Adirondack/Glens Falls Transportation Council
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Dan Barusch	Town/Village Lake George, Planner
Ashley Rivers	Warren County Office of Emergency Services
John Gibb	Contingency Management Consulting Group
Jennifer Ramsey	Warren County Office of Emergency Services
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to provide a project status update and the preliminary county level hazards of concern relative risk rankings; to obtain input or adjustments of the rankings to incorporate local data.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"><li>Meeting started at 10:05 am</li><li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation.</li><li>The process continues to be on track for plan submittal to FEMA in August 2023.</li><li>The majority of data to support the hazard mitigation plan (HMP) development has been received, with the receipt of the National Flood Insurance Program (NFIP) data pending processing by FEMA.</li><li>The table of contents and draft sections of the plan are being posted as available on the project Teams site to enable steering committee members to access and review to enable input prior to sharing the drafts with the public. Tt requested the steering committee to review the documents and provide comments via 'track changes'.</li></ul>	
2	<b>In-Kind Services Tracking/Outreach</b> <ul style="list-style-type: none"><li>Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information</li></ul>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<p>to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</p> <ul style="list-style-type: none"><li>• The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>• Surveys to target the public, neighboring counties, agencies, and businesses have been distributed and will be used to provide additional input to the plan to support the identification of mitigation actions.</li></ul>	
3	<p><b>Risk Assessment Overview</b></p> <ul style="list-style-type: none"><li>• It reviewed the methodology to calculate the relative risk of the county's identified hazards of concern and shared the preliminary risk rankings. The ranks of Low, Medium, and High for each hazard will serve as a guide in identifying impactful mitigation actions to reduce damages and increase resilience. After review and adjustment by the core group, the preliminary county level ranks are as follows:<ul style="list-style-type: none"><li>○ Disease Outbreak (including Covid-19, influenza, and tick-borne illnesses) - <b>Medium</b></li><li>○ Earthquake - <b>Medium</b></li><li>○ Extreme Temperatures - <b>Medium</b></li><li>○ Flood - <b>High</b></li><li>○ Dams Failure - <b>High</b></li><li>○ Infestation - <b>Medium</b></li><li>○ Severe Storm (Windstorm, Thunderstorm, Hail, Tornado) – <b>High</b></li><li>○ Severe Winter Storm (Heavy Snow, Blizzards, Ice Storms) - <b>High</b></li><li>○ Wildfire - <b>High</b></li></ul></li></ul> <p>The county ranks indicate the highest municipal risk rather than the calculated regional risk. The Steering Committee was tasked to review the information provided in the presentation (see attached) to provide any additional input to revisit and potentially further adjust the rankings.</p> <p>Discussion included clarification that vulnerability assessment included only projected damages to general building stock and not potential infrastructure damages which are not modeled in Hazus-MH. These damages are an example of why the rankings should be adjusted, in particular, the flood ranking as it should include the risk posed by unmapped, localized flood areas evidenced by washouts and culvert failures. Capturing these floodprone areas was suggested as county and local level mitigation actions and could be documented in part using the ReadyWarren app.</p> <p>The public sharing of dam inundation areas was also discussed and will be addressed by Emergency Services staff.</p>	<p>Steering Committee members to email any input regarding adjusted risk ranking on or before 2/14/23.</p> <p>Emergency Services to review the level of detail provided to the public regarding dam inundation areas.</p> <p>Emergency Services, County GIS and SWCD to consider options to collect and map localized flood areas.</p>



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>These rankings will be presented to the Planning Partnership during a meeting on February 15<sup>th</sup>.</li></ul>	
6	<b>Upcoming Meetings</b> <ul style="list-style-type: none"><li>Planning Partnership Risk Assessment Meeting – February 15, 2023 <i>(Optional for Steering Committee members not affiliated with a municipality.)</i></li><li>Mitigation Strategy Workshop – March 15, 2023 <i>(Optional for Steering Committee members not affiliated with a municipality.)</i></li></ul>	
7	<b>Next Steps</b> <ul style="list-style-type: none"><li>Update Risk Assessment including adjustments as noted by Steering Committee</li><li>Present to planning partners</li><li>Populate adjusted results municipal annexes</li><li>Planning Partnership Risk Assessment Meeting: February 15, 2023</li><li>Continue to engage the public</li><li>Begin working with the municipalities to develop mitigation strategy/actions: <b>February 2023</b></li><li>Mitigation Strategy Workshop with FEMA and NYSDHSES – <b>March 15, 2023</b></li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 11:15 am.	



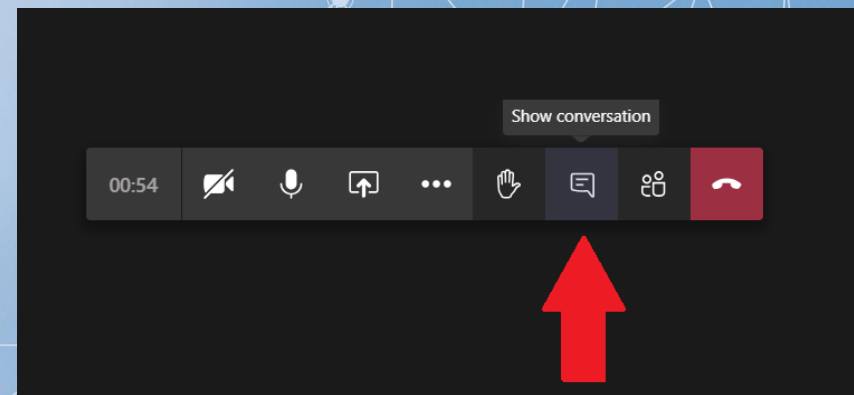
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Steering Committee #3 Meeting | February 10, 2023 | 10:00 – 11:30 AM

## ***WELCOME!***

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*

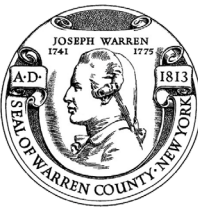


# Agenda

- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up

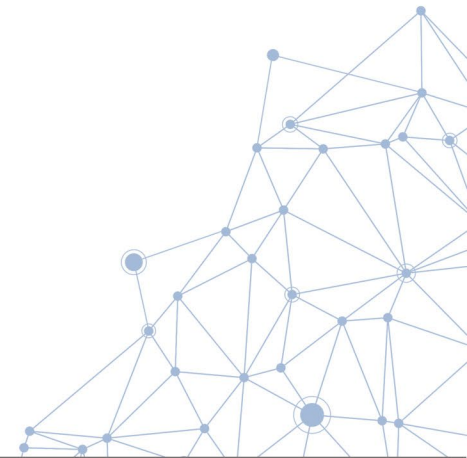






# Project Schedule Review

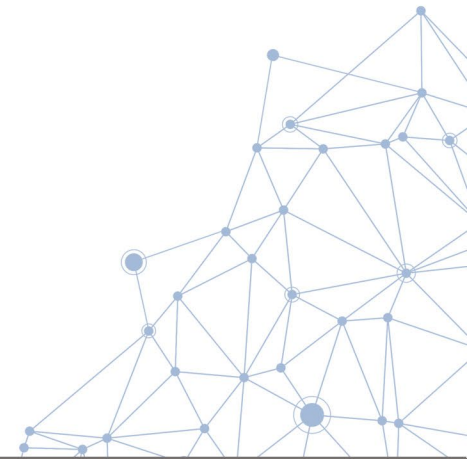
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ☐ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ☐ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ☐ | May 2023                | Review draft plan                                    |
| ☐ | July/August 2023        | Submit plan to NYSDHSES and FEMA                     |





# Progress

- Requested NFIP Data – *Data pending*
- GIS Data Collection - *Complete*
- Critical Facility Survey for Municipal Input – *Complete*
- HMP website, HMP Fact Sheet, Citizen Survey, Agency Surveys - *Complete*
- County-Level/Regional Plan Collection – *Complete*
- Planning Partnership Participation – 100%





# Document Review on Sharepoint

- Access for document review
- Review in “desktop app” in track changes

OneDrive interface showing the 'Warren County (NY) HMP' folder. The 'Steering Committee' folder is circled in green, with a blue arrow pointing to it from the right.

Name	Modified	Modified By	File size	Sharing
GIS	November 14, 2022	frankenfelds@warrencoun	4 items	Shared
Letters of Intent to Participate	September 16, 2022	Bianco, Cynthia	14 items	Shared
Outreach Materials	November 30, 2022	Bianco, Cynthia	10 items	Shared
<b>Steering Committee</b>	January 24	Bianco, Cynthia	1 item	Shared
Survey				
SWCD				

OneDrive interface showing the 'Documents for Review' folder. The file '5.2 - HOC ID\_Warren\_rev.docx' is circled in green, with a blue arrow pointing to it from the left.

Name	Modified	Modified By	File size
Old	January 31	Bianco, Cynthia	6 items
Warren_TOC.docx	January 25	Bianco, Cynthia	205 KB
<b>5.2 - HOC ID_Warren_rev.docx</b>	6 days ago	Bianco, Cynthia	422 KB
Section 1-Introduction_rev.docx	6 days ago	Bianco, Cynthia	1.05 MB
Section 2-Plan Adoption.docx	January 25	masona@warrencountyny	360 KB
Section 5.1_Methodology_rev.docx	6 days ago	Bianco, Cynthia	517 KB

OneDrive interface showing the 'Steering Committee' folder. The 'Documents for Review' folder is circled in green, with a blue arrow pointing to it from the left.


Name	Modified	Modified By	File size	Sharing
<b>Documents for Review</b>	January 24	Bianco, Cynthia	6 items	Shared



# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/ Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes – sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com) | 973.630.8044).

\* Name

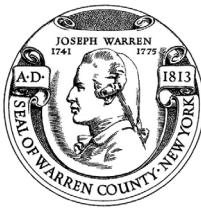
\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

# Hours



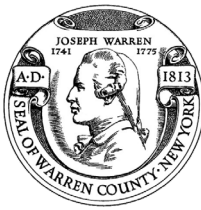
# Public and Stakeholder Outreach

- HMP website is LIVE!

<https://www.warrencountynynewyorkhmp.com>

- Social Media
- Public Survey
- Stakeholder Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey

The screenshot shows the homepage of the Warren County Hazard Mitigation Plan 2023 Update website. The header is dark blue with the Warren County seal and the title 'WARREN COUNTY HAZARD MITIGATION PLAN 2023 UPDATE'. Below the header is a navigation menu with links: Home, About, What is Mitigation, Meetings, Calendar, Explore the Plan, and Additional Information. The main content area has a white background. It starts with the title 'Warren County Hazard Mitigation Plan 2023 Update' and a welcome message. It then describes the project's goal to save lives and property by reducing hazard vulnerability. A call to action for a public survey is prominently displayed, with a button that says 'CLICK HERE TO TAKE THE PUBLIC SURVEY'. Below this, there is a section for public participation and feedback, explaining that the survey will be used to develop portions of the HMP. At the bottom, there is a calendar view for February 2023, showing a list of events.

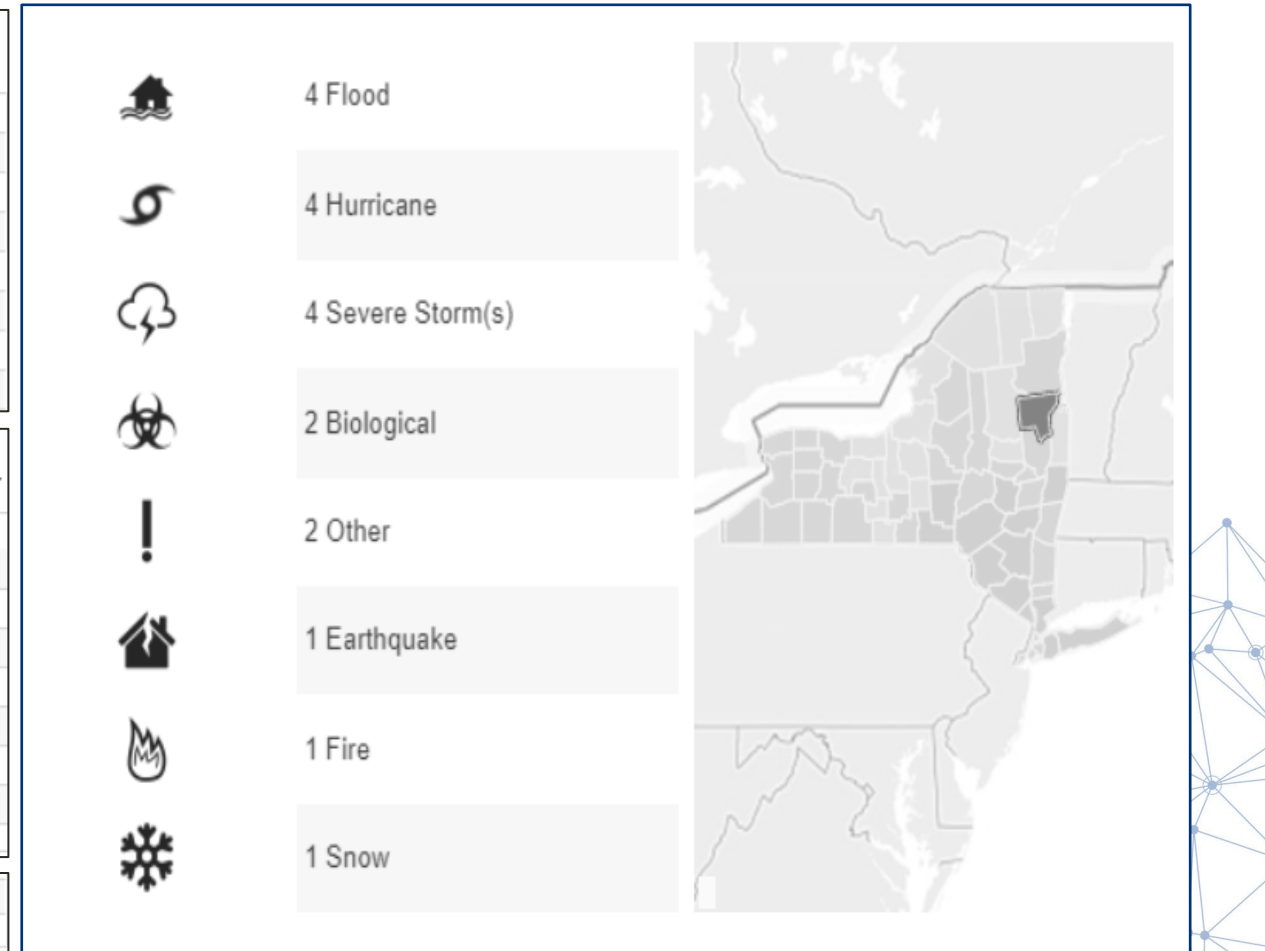


# Hazard Mitigation – What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480







# 2023 HMP Hazards of Concern

- Disease Outbreak
- Earthquake
- Extreme Temperatures
- Flood
- High Hazard Potential Dams
- Infestation
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire



# What is Risk?

## ✓ Hazard

- Source of potential danger or adverse condition

## ✓ Exposure

- Manmade or natural features that are exposed to the hazard

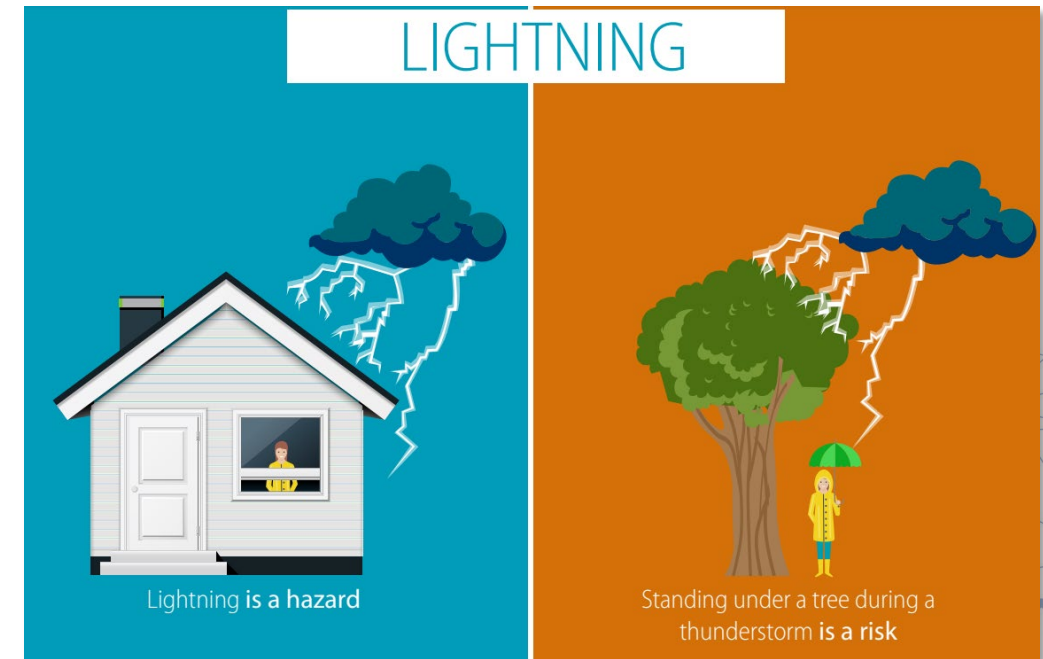
## ✓ Vulnerability

- Damage susceptibility of the exposed features

## ✓ Adaptive Capacity (or capability)

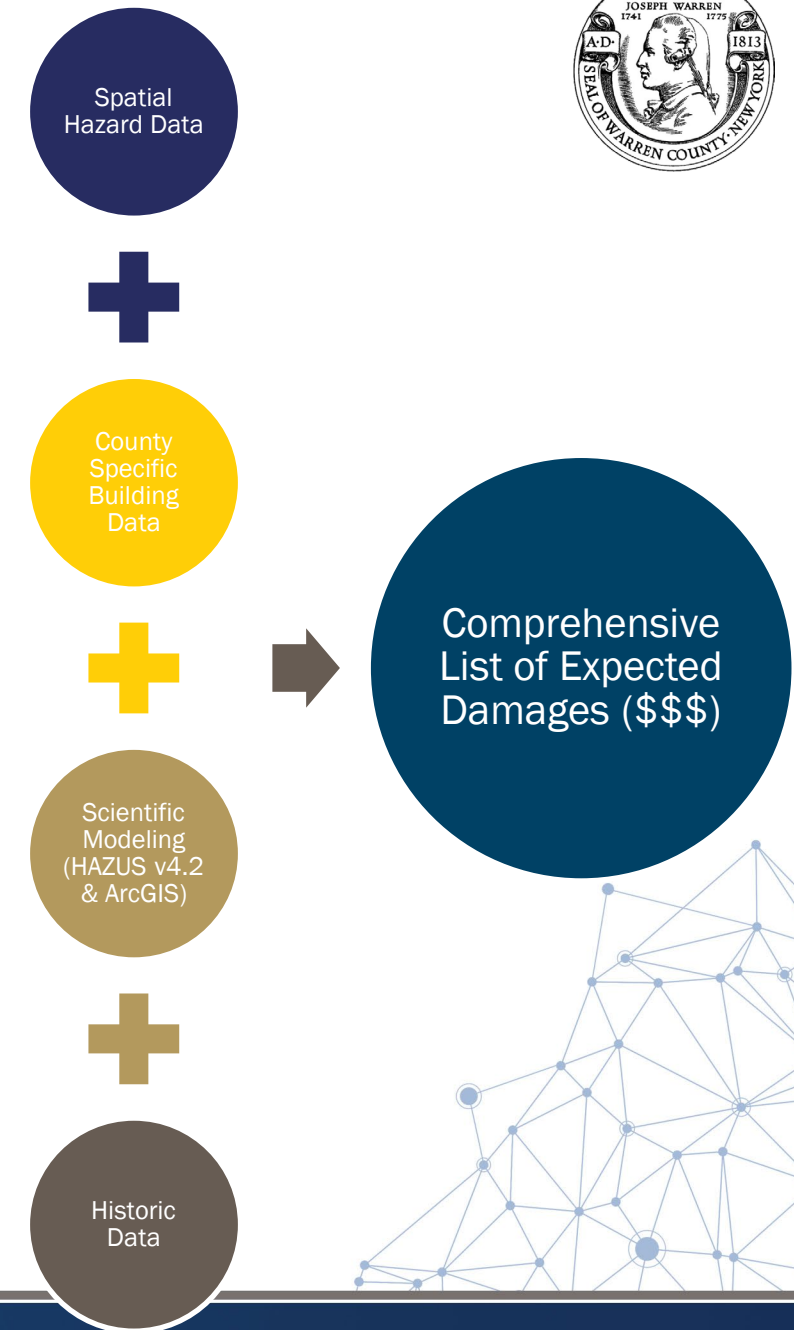
- Plans/policies
- Response/recovery
- Financial resources

## ✓ Climate Change



# Purpose of the Risk Assessment

- To get a better understanding of the risks you face
- Initial results based on available data
- Quantitative data (population/structures exposed, structural damages within hazard zones) used when available
- Qualitative community input (such as unmapped flood areas) integrated to adjust results
- Local community input to adjust relative rankings

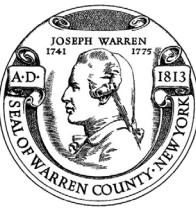




# Preliminary Hazard Ranking

How are the rankings calculated?

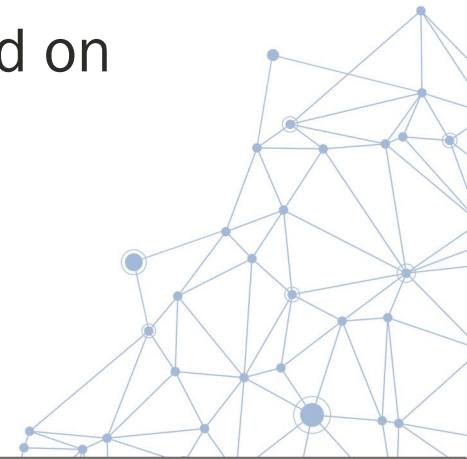




# Preliminary Hazard Ranking Methodology

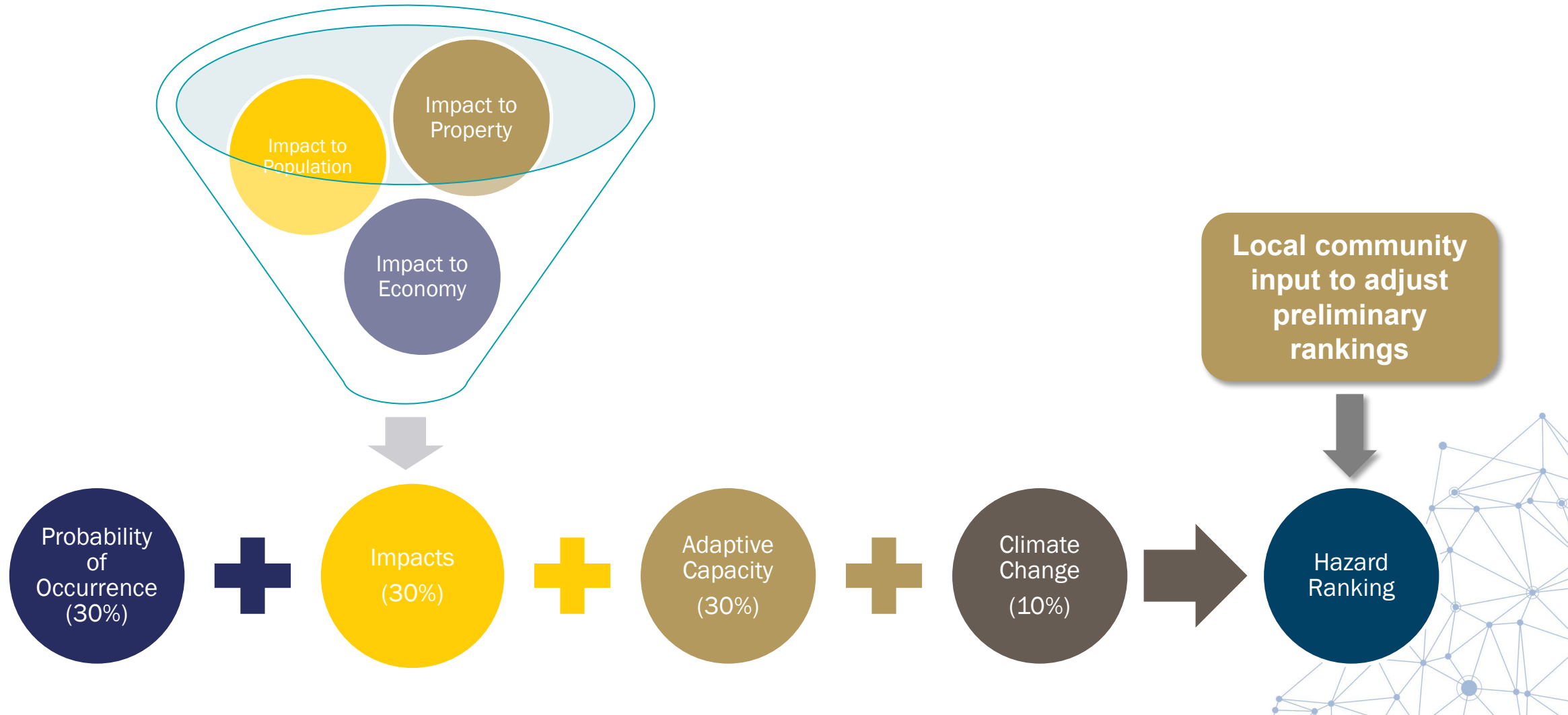
Hazard Ranking is determined by quantitative and qualitative factors including:

- The calculated probability of a hazard occurring based on historical data
- *Impacts to people, property, and the economy* based on GIS data and analysis of exposure.
- The degree to which climate change will affect future occurrences based on best available data.
- Capability- the ability of your community to respond to the hazard based on ordinances, mitigation strategies and procedures, and readiness.





# Hazard Ranking Formula





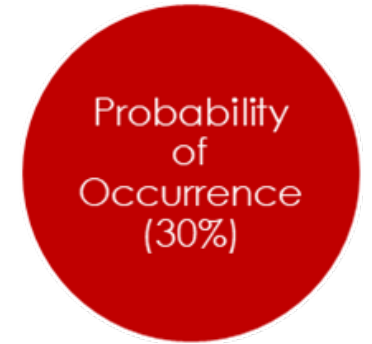
# Ranking the Hazards of Concern

What information plays a role in determining the risk rankings?

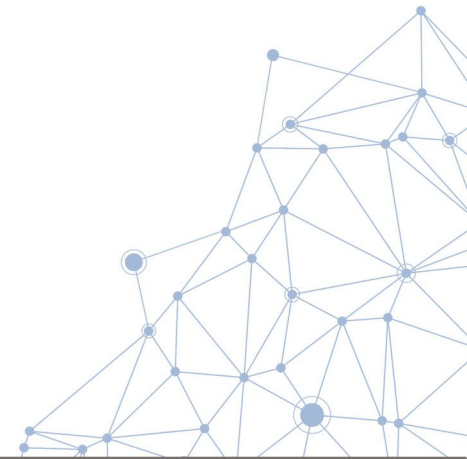




# Probability Of Occurrence



- **Unlikely**
  - Not likely to occur or less than 1% annual chance of occurring
- **Rare**
  - Between 1 and 10% annual chance of occurring
- **Occasional**
  - Between 10 and 100% annual chance of occurring
- **Frequent**
  - 100% chance occurring; occurs multiple times a year





# Hazard Ranking Input

## Impact on Population – Function of population exposed

- ✓ Low – 14% or less population exposed
- ✓ Medium – 15%-29% population exposed
- ✓ High – 30%+ population exposed

## Impact on property – Function of structures exposed

- ✓ Low – 14% or less structures exposed
- ✓ Medium – 15%-29% structures exposed
- ✓ High – 30%+ structures exposed

## Impact on economy – Function of damages to building stock

- ✓ Low – 9% or less loss estimate of total replacement cost
- ✓ Medium – 10%-19% loss estimate of total replacement cost
- ✓ High – 19%+ loss estimate of total replacement cost

## Capability – Function of level of planning, policies, enforcement

- ✓ Weak – outdated policies; limited to no deployable resources; limited capabilities to respond; long recovery
- ✓ Moderate – minimum requirements; mitigation strategies identified but not implemented; moderate county capabilities
- ✓ Strong – exceed requirements; mitigation/protective measures in place; county/jurisdiction has ability to recover quickly because resources are readily available, and capabilities are high

## Climate Change – Function of climate predictions

- ✓ Low - No local data is available; modeling projects are uncertain on whether there is increased future risk; confidence level is low (inconclusive evidence)
- ✓ Medium - Studies and modeling projections indicate a potential for exacerbated conditions due to climate change
- ✓ High - Studies and modeling projections indicate exacerbated conditions/increased future risk due to climate change



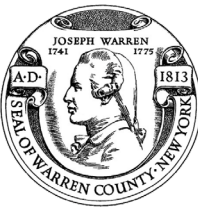


# Preliminary Overall Risk Ranking

Hazard of Concern	2021 CEPA Ranking	2023 Calculated Risk Ranking	2017 Risk Ranking	2023 Adjusted Ranking
Earthquake	Low	Low	High	Medium
Extreme Temperature	-	Medium	-	Medium
Flood	Very High	Low	Medium	High
Severe Storm	Medium	High	High	High
Severe Winter Storm	High	High	High	High
Wildfire	Medium	High	High	High
Infestation	-	Medium	Medium	Medium
Dam Failure	-	High	-	High
Disease Outbreak/Pandemic	Medium	Low	Medium	Medium

\* Potential adjustments

# Municipal Level Risk Ranking (Preliminary)



Hazard Ranking									
Municipality	Earthquake	Extreme Temps	Flood	Severe Storm	Severe Winter Storm	Wildfire	Infestation	Dam Failure	Disease Outbreak
Bolton (T)	Low	Medium	Low	High	High	Medium	Medium	High	Medium
Chester (T)	Low	Medium	Low	High	High	Low	Medium	High	Low
Glens Falls (C)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Hague (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Horicon (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Johnsburg (T)	Low	Medium	Low	High	High	Low	Medium	High	Medium
Lake George (T)	Low	Medium	Low	High	High	High	Medium	Medium	Medium
Lake George (V)	Low	Medium	Low	High	High	High	Medium	Low	Low
Lake Luzerne (T)	Medium	Medium	Low	High	High	Medium	Medium	Medium	Low
Queensbury (T)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Stony Creek (T)	Medium	Low	Low	High	High	Low	Medium	Medium	Low
Thurman (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Warrensburg (T)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Warren County	Medium	Medium	Low	High	High	High	Medium	High	Low

\* To be adjusted





# Sample Risk Analysis Input (Flood)

Warren County Municipality	Probability		Impact on Population				
	Impact	Index	Population (2020 Decennial)	1-Percent Annual Chance Flood Event Population Exposed	Percent Population Exposed (1-Percent Annual Chance Flood Event)	Impact	Numeric Value x3
Bolton (T)	Frequent	3	2,012	132	6.5%	L	3
Chester (T)	Frequent	3	3,086	262	8.5%	L	3
Glens Falls (C)	Frequent	3	14,830	0	0.0%	L	3
Hague (T)	Frequent	3	633	45	7.1%	L	3
Horicon (T)	Frequent	3	1,471	77	5.2%	L	3
Johnsburg (T)	Frequent	3	2,143	49	2.3%	L	3
Lake George (T)	Frequent	3	2,494	65	2.6%	L	3
Lake George (V)	Frequent	3	1,008	2	0.2%	L	3
Lake Luzerne (T)	Frequent	3	3,079	200	6.5%	L	3
Queensbury (T)	Frequent	3	29,169	376	1.3%	L	3
Stony Creek (T)	Frequent	3	758	23	3.0%	L	3
Thurman (T)	Frequent	3	1,095	8	0.7%	L	3
Warrensburg (T)	Frequent	3	3,959	147	3.7%	L	3
Warren County	Frequent	3	65,737	1,385	2.1%	L	3

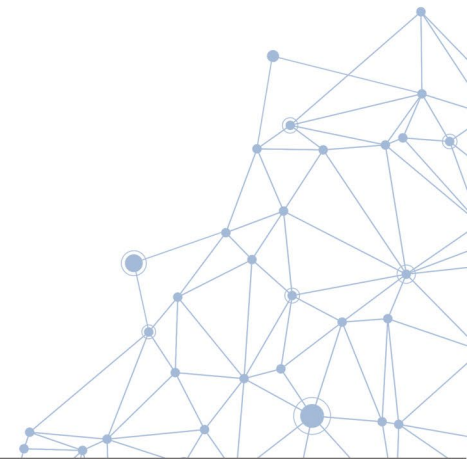


# Earthquake

- Number of Events

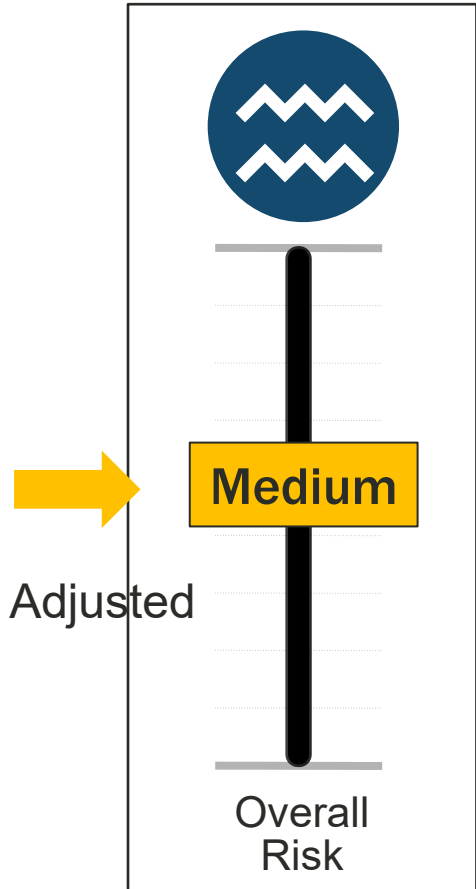
- 189 earthquakes epicentered in NYS with 4 epicentered in Warren County, per 2015 NYS HMP, between 1973 and 2014
- Faults are located within the County
- Individual Assistance (IA) declared for EMA declarations DR-1415 in Warren County (5/16/2002)
- Impacts
  - 2 earthquake scenarios: 500-yr and 2500-yr events
  - People and structures located in areas with soils more susceptible to earthquakes

Warren County  
Ranking  
**MEDIUM**





# Countywide Preliminary Risk Ranking: Earthquake



**Probability of Occurrence: Rare**



**Impact on Population: Medium**

65.6% of population is exposed and vulnerable (NEHRP D & E soils)



**Impact on Property: High**

48.7% of County building stock is exposed and vulnerable (NEHRP D & E soils)



**Impact on Economy: Low**

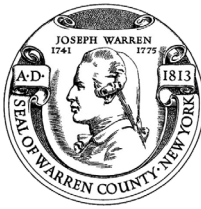
\$1.9% of Structural Replacement Cost Value damaged



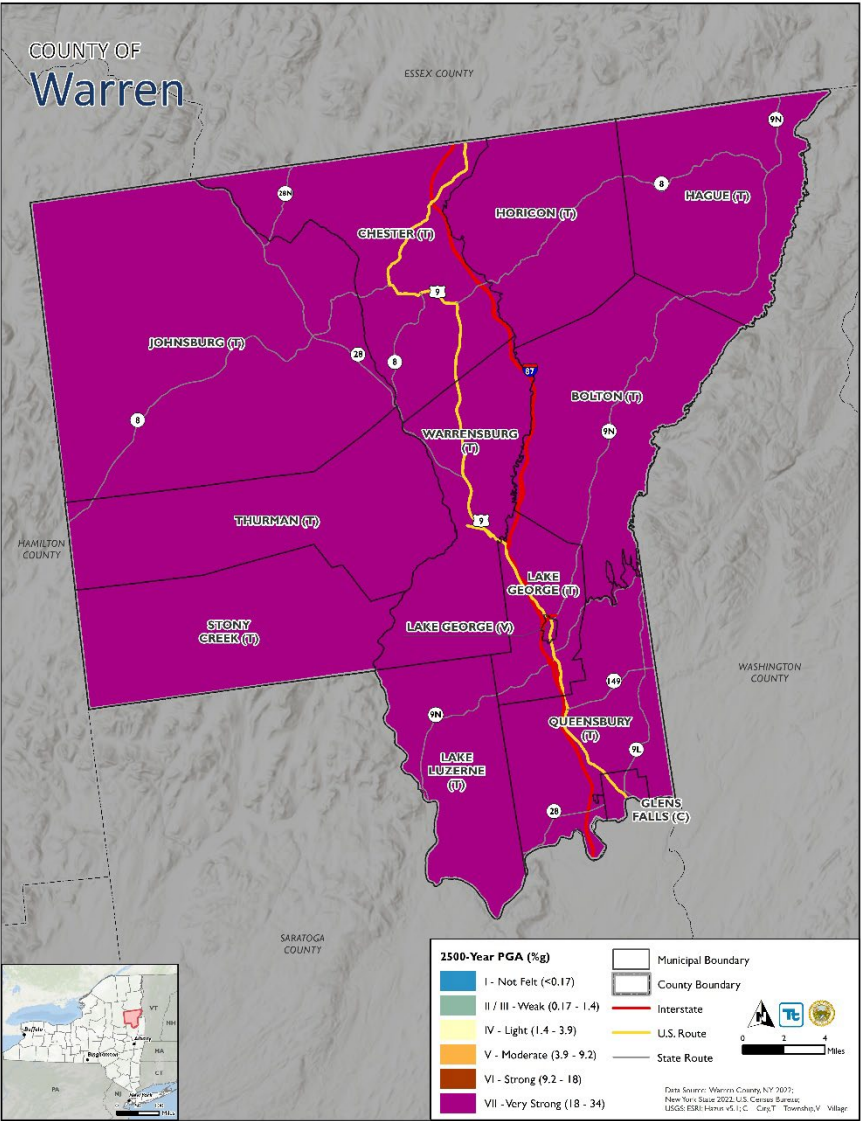
**Adaptive Capacity: Medium for all municipalities**



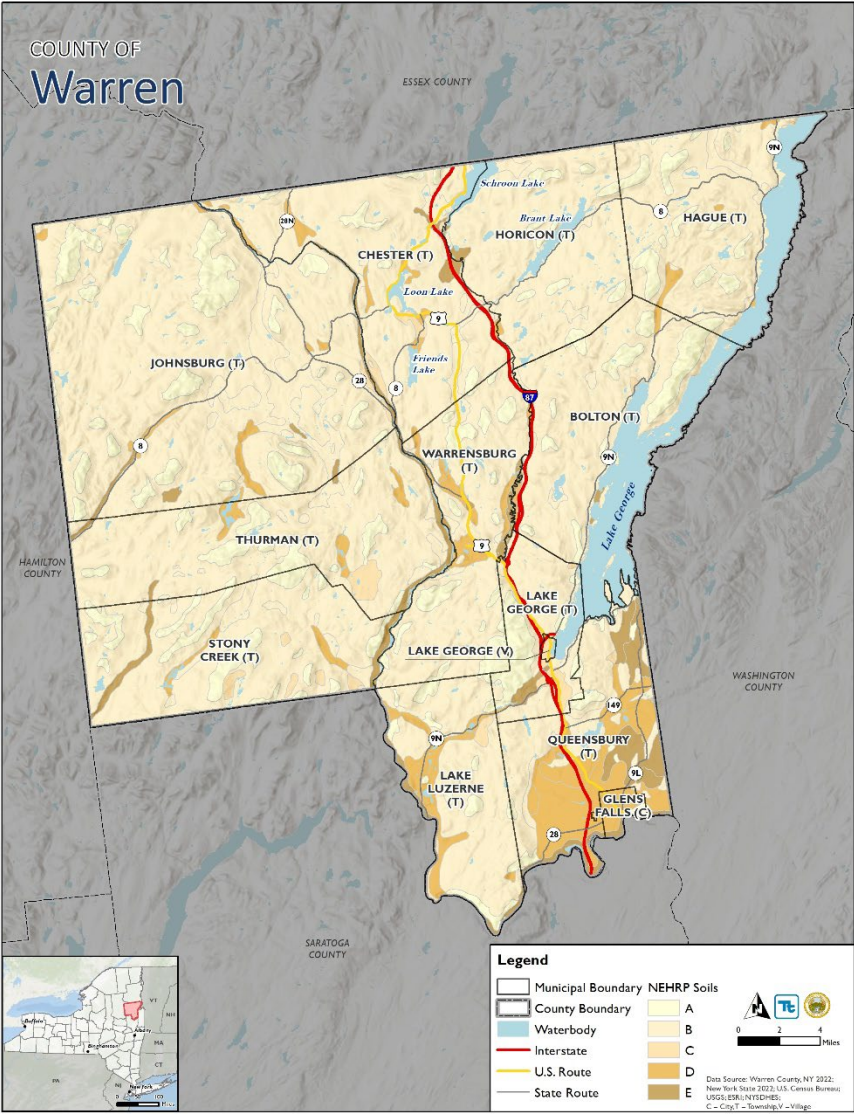
**Climate Change: Low for all municipalities**



# Peak Ground Acceleration



# NEHRP Soil Class



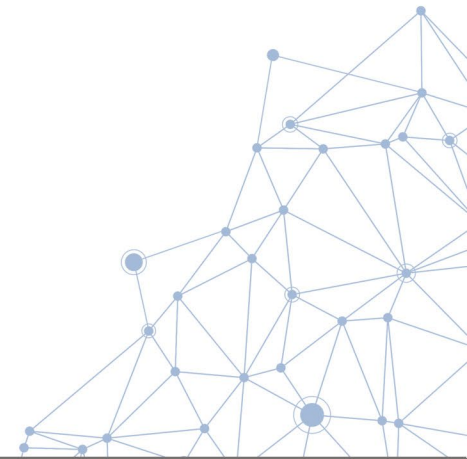




# Flood

- Previous Events
  - Riverine, flash, and stormwater flooding
    - Between 2000 and 2022, Warren County included in 2 FEMA flood-related declarations.
      - FEMA-DR-1993 (Severe Storms Tornadoes, Winds and Flooding) – April 26, 2011
      - FEMA-DR-4129 (Severe Storms, and Flooding) – July 2013
- Exposure
  - People and property located in the 1% annual chance flood area

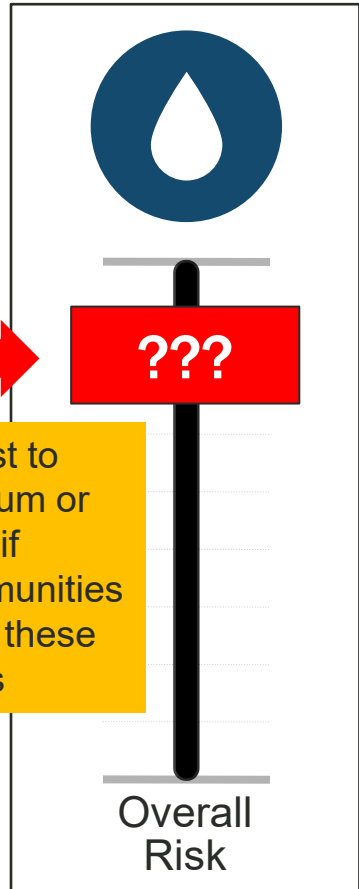
Warren County  
Ranking  
**LOW**







# Countywide Preliminary Risk Ranking: Flood



**Probability of Occurrence: Frequent**



**Impact on Population: Low**

1,385 people (2.1% of the population) in the SFHA



**Impact on Property: Low**

1,252 buildings (3.1% of total County buildings) in the SFHA; 1 Rep Loss



**Impact on Economy: Low**

\$721 M Replacement Cost Value (RCV) (3% of County total RCV) located in the Regulatory Floodplain



**Adaptive Capacity: Medium for all municipalities**



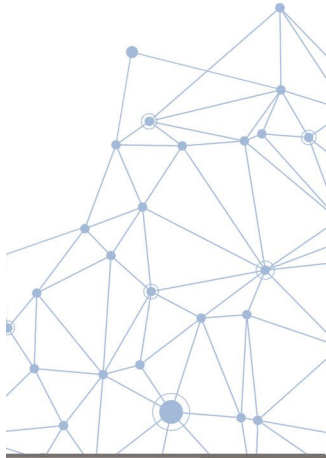
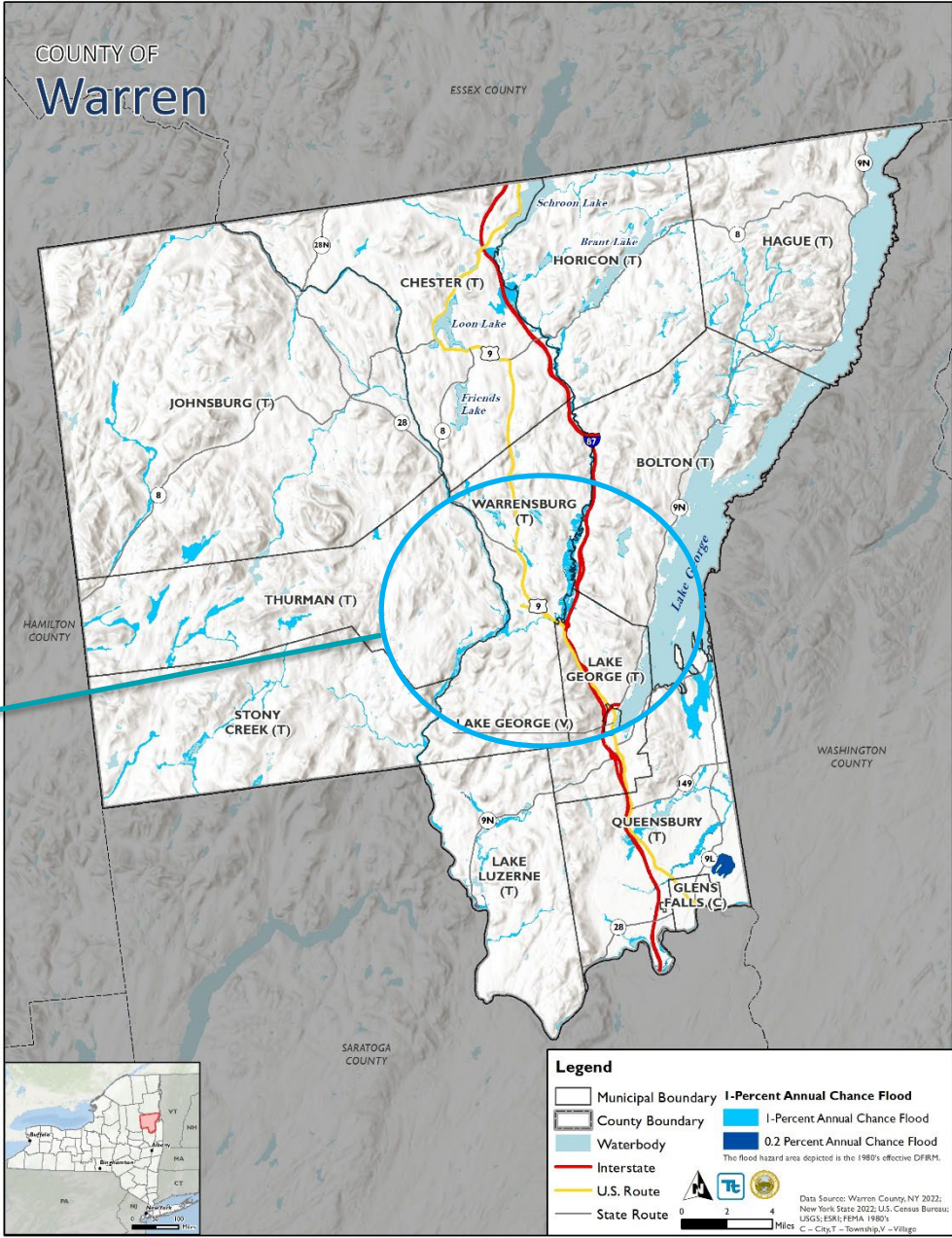
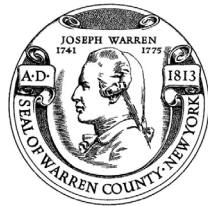
**Climate Change: High for all municipalities**



# 2023 vs. 2017 Rankings (Flood)

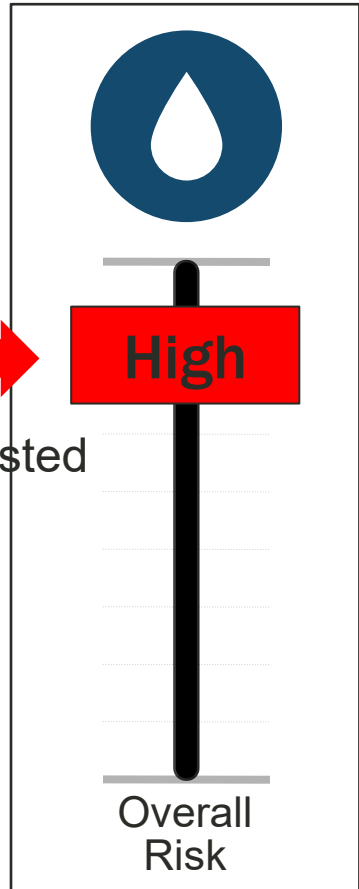
Warren County Municipality	IMPACT ON POPULATION	IMPACT ON PROPERTY	IMPACT ON ECONOMY	RISK RANKING	RISK RANKING
	Percent Population Exposed (1-Percent Annual Chance Flood Event)	Percent of Total Buildings in 1% Flood Area	Percent of Total GBS RCV	2023 Estimated	2017
Bolton (T)	6.5%	6.6%	6.5%	Low	Medium
Chester (T)	8.5%	8.2%	7.6%	Low	Medium
Glens Falls (C)	0.0%	0.1%	1.0%	Low	Medium
Hague (T)	7.1%	7.0%	3.2%	Low	Medium
Horicon (T)	5.2%	5.2%	7.2%	Low	Medium
Johnsburg (T)	2.3%	2.4%	3.8%	Low	Medium
Lake George (T)	2.6%	2.5%	1.0%	Low	Medium
Lake George (V)	0.2%	1.1%	1.2%	Low	Medium
Lake Luzerne (T)	6.5%	6.3%	3.6%	Low	Medium
Queensbury (T)	1.3%	1.4%	2.1%	Low	Medium
Stony Creek (T)	3.0%	3.2%	3.8%	Low	Medium
Thurman (T)	0.7%	0.8%	0.5%	Low	Medium
Warrensburg (T)	3.7%	3.9%	2.7%	Low	High
Warren County	2.1%	3.1%	3.0%	Low	Medium

# Flood Hazard Areas





# Countywide Preliminary Risk Ranking: Dam Failure



**Probability of Occurrence: Rare**



**Impact on Population: High**

216 people in inundation areas



**Impact on Property: High**

254 buildings (0.6% of total County buildings) located in inundation areas



**Impact on Economy: High**

\$130 M Replacement Cost Value (RCV) (0.5% of County total RCV) in inundation areas



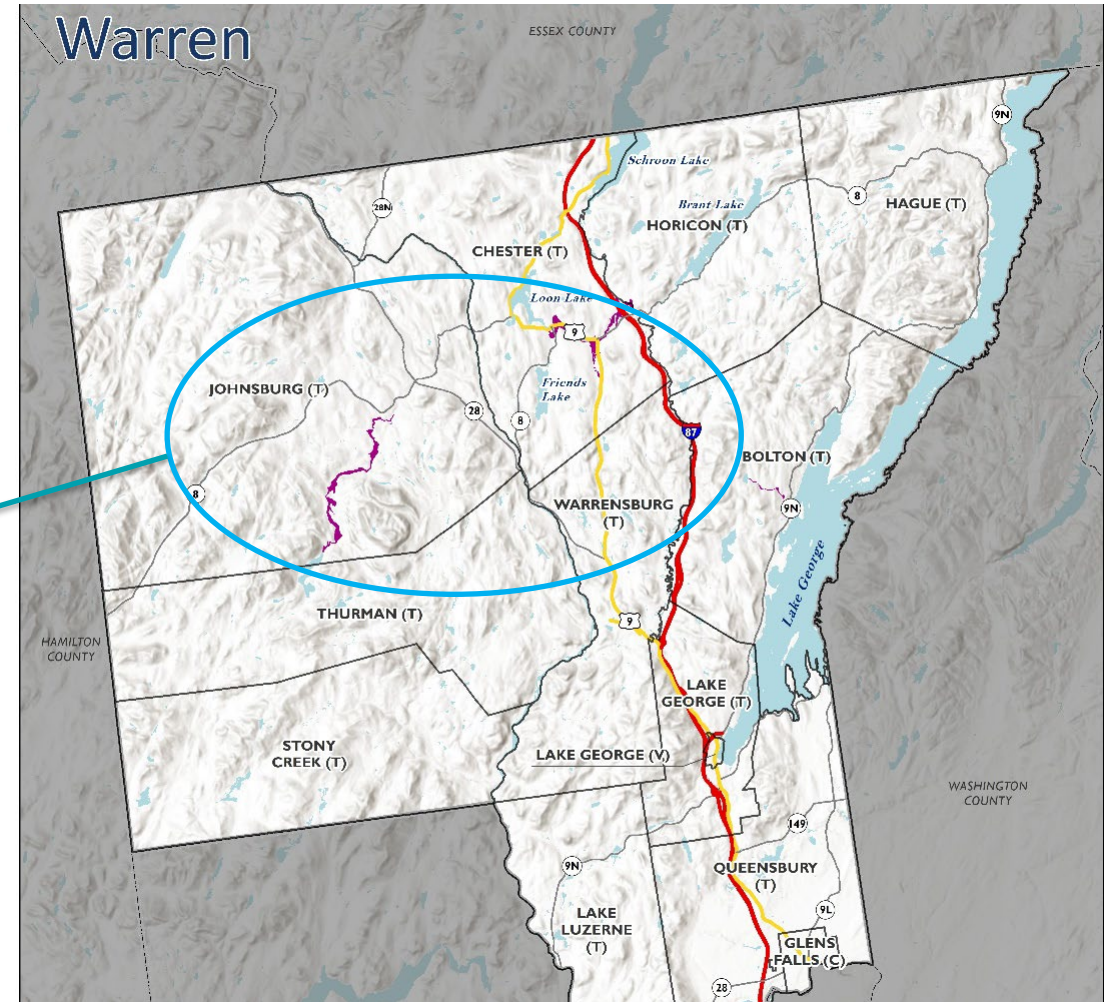
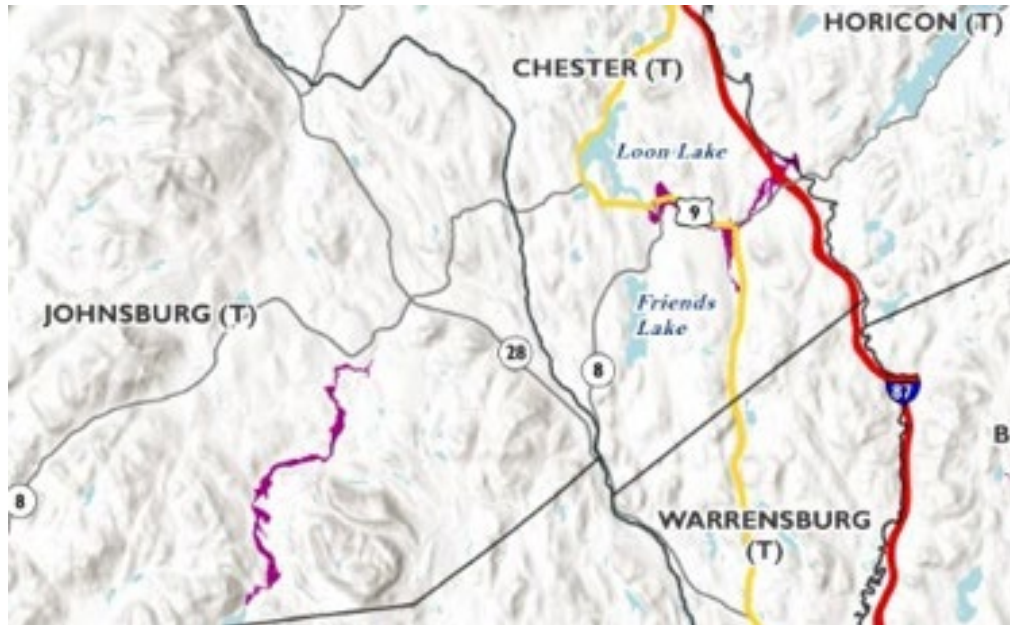
**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**



# Dam Inundation Areas







# Severe Storm

- Previous Events

- Hazard includes lightning, hail, and windstorms
- FEMA-DR-4472 (Severe Storms, Straight-line Winds and Flooding) – October 2019
- Between 2016 and 2022, Warren County was included in 1 FEMA severe storm-related declaration.
- According to the NOAA, 5 tornado events took place in Warren County between 1950 and 2022

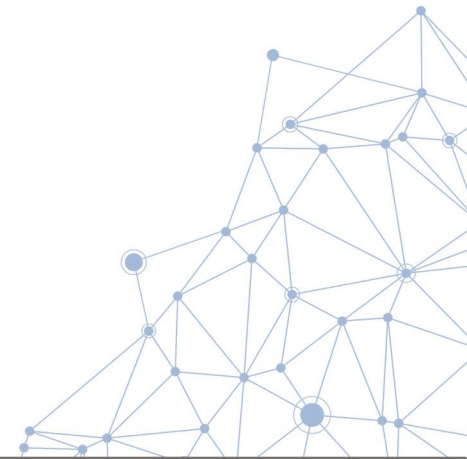
Warren County  
Ranking  
**HIGH**

- Exposure

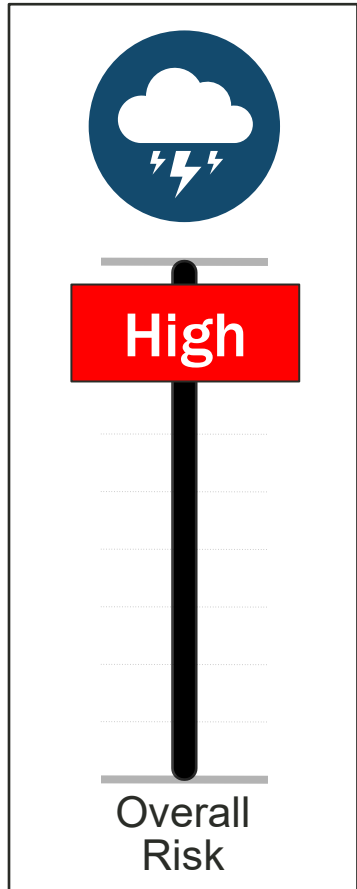
- Population and property exposed to 100-year peak wind gusts (Tropical Storm-39 to 73 mph) and 500-year (Tropical Storm speeds)
- All people and property exposed and vulnerable

- Potential Impacts

- Power outages
- Critical facility and infrastructure damage



# Countywide Preliminary Risk Ranking: Severe Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable



**Impact on Economy: Low**

\$4.8 M (less than 1%) general building stock loss for a 500-year event



**Adaptive Capacity: High for all municipalities**



**Climate Change: High for all municipalities**

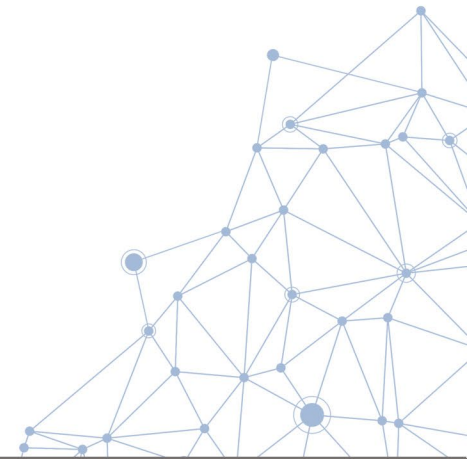


# Wildfire

- Previous Events

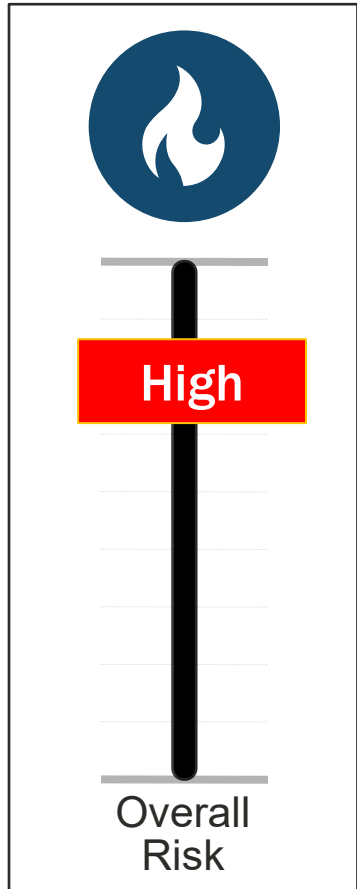
- The NYS HMP identified wildfire as a hazard of concern for New York State, however the daily probability of a wildfire event for the state is .09 percent.
- Warren County was included in one FEMA fire declaration; however, it was a manmade terrorist attack.
- According to the 2020 Warren County CEPA, the wildfire hazard is ranked medium.
- Exposure
  - People and property located in Wildfire Urban Interface WUI.

Warren County  
Ranking  
**HIGH**





# Countywide Preliminary Risk Ranking: Wildfire



**Probability of Occurrence: Occasional**



**Impact on Population: High**

44.4% of population exposed to the WUI Interface



**Impact on Property: High**

14,488 buildings (35.9 % of County total) exposed to WUI Interface



**Impact on Economy: High**

\$8.6M in RCV 35.4% of County total) exposed to WUI Interface

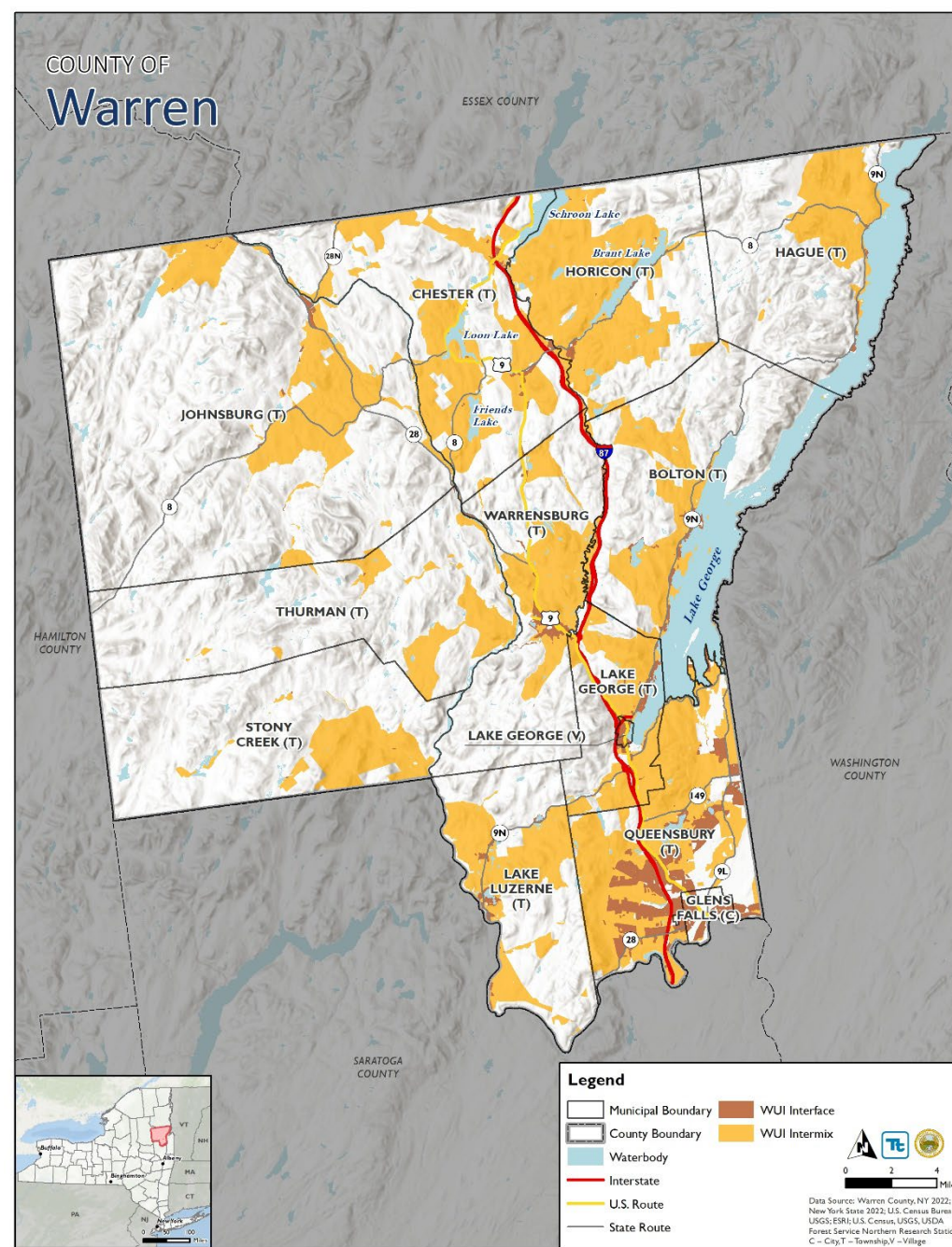
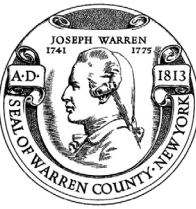


**Adaptive Capacity: Medium for all municipalities**

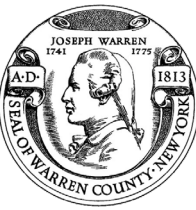


**Climate Change: High for all municipalities**

# Wildland Urban Interface/ Intermix Area



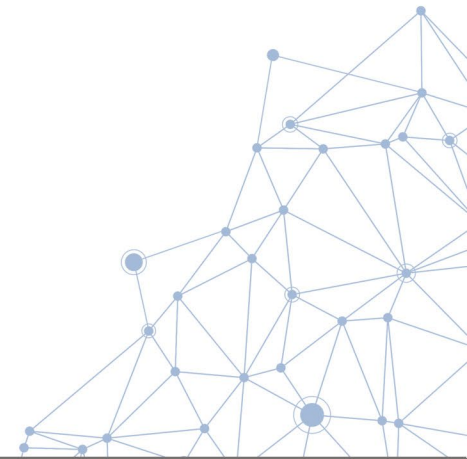




# Severe Winter Storm

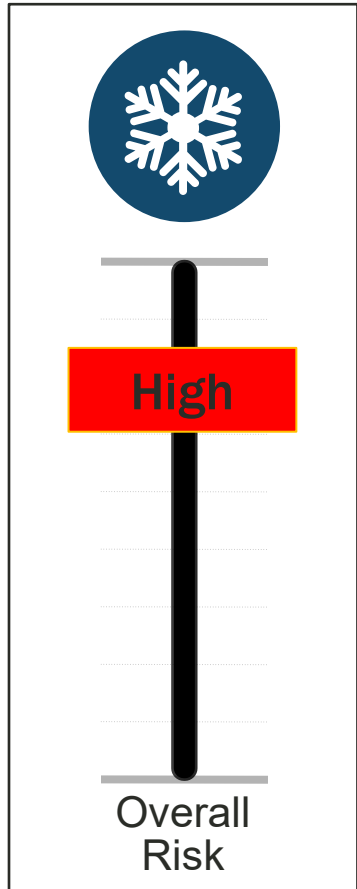
- Hazard includes heavy snow, blizzards, ice storms
- Previous Events
  - FEMA included Warren County in one winter storm-related disaster declaration
    - FEMA-EM-3107 (Severe Blizzard) – March 1993
- Exposure
  - All people and property exposed and vulnerable
- Potential Impacts
  - Power outages
  - Critical facility and infrastructure damage
  - Transportation interruptions/accidents

Warren County  
Ranking  
**HIGH**





# Countywide Preliminary Risk Ranking: Severe Winter Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable; however, impacts are minimal



**Impact on Economy: Low**

\$1.2M (5%) potential losses to building stock



**Adaptive Capacity: High for all municipalities**



**Climate Change: Medium for all municipalities**

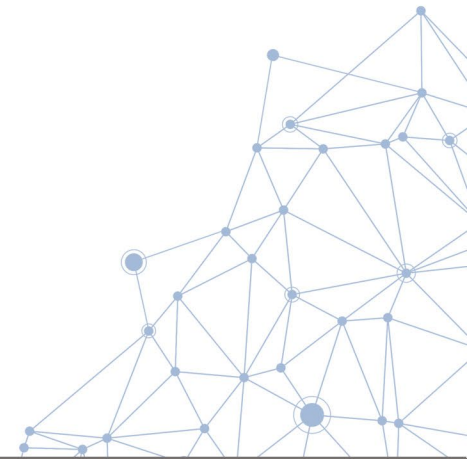


# Disease Outbreak/Pandemic

- Previous Events

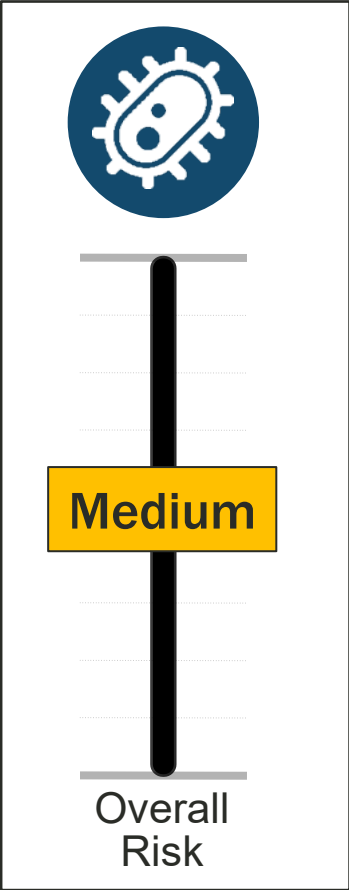
- According to the 2020 Warren County CEPA, the pandemic hazard is ranked medium.
- The County has been impacted by the COVID-19 pandemic (DR-4480).
- The County has been impacted by various diseases (COVID-19, West Nile Virus, Lyme disease)
- Exposure
  - Entire County is exposed and vulnerable; however, not occurring multiple times a year with significant impacts
  - Severe events can lead to staffing and bed shortages in hospitals

Warren County  
Ranking  
**MEDIUM**





# Countywide Preliminary Risk Ranking: Disease Outbreak



Probability of Occurrence: Occasional



Impact on Population: Medium  
(14,754 County residents are 65+ years and 2,850 >5 years (26.8 % of County population))



Impact on Property: Low



Impact on Economy: Medium

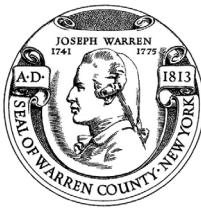


Adaptive Capacity: Medium for all municipalities



Climate Change: Medium for all municipalities

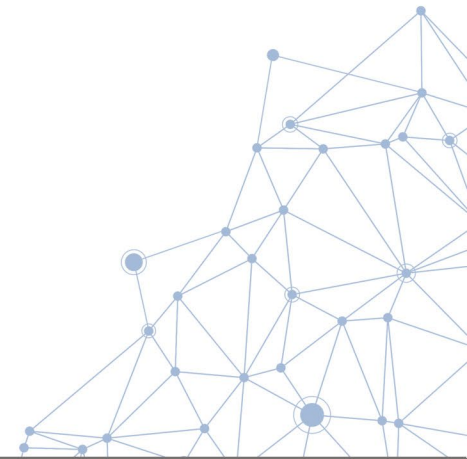




# Extreme Temperature

- Previous Events
  - Hot and cold events
- Exposure
  - Entire County is vulnerable
  - Increased vulnerability to populations at higher risk (65+ / <5 years old)
- Potential impacts:
  - Increased wildfire/brush fire risk
  - Impacts to agriculture/farms
  - Long-periods of warm temperatures can lead to drought conditions

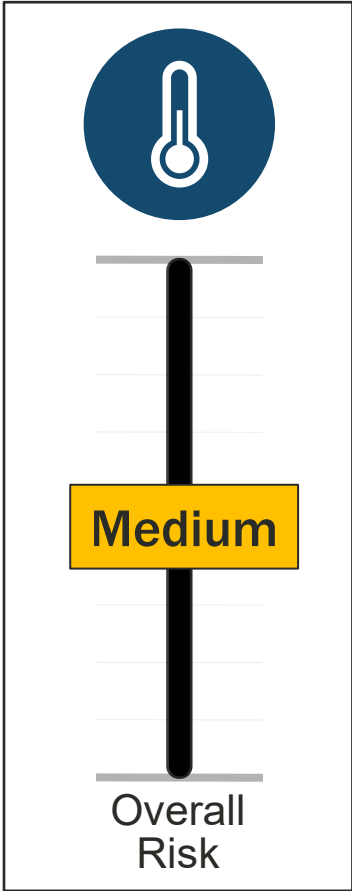
Warren County  
Ranking  
**MEDIUM**







# Countywide Preliminary Risk Ranking: Extreme Temps



Probability of Occurrence: Occasional



Impact on Population: Medium

17,604 County residents are 65+ years old or >5 years (26.8% of County population)



Impact on Property: Low



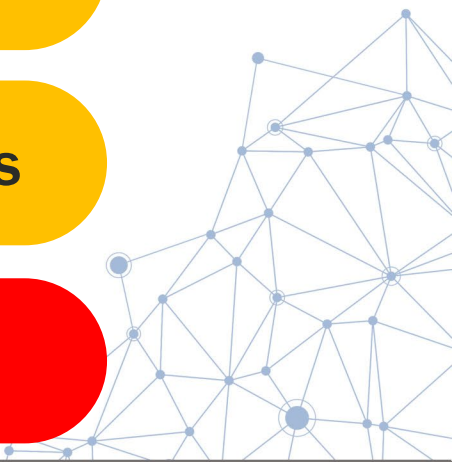
Impact on Economy: Medium



Adaptive Capacity: Medium for all municipalities



Climate Change: High for all municipalities





# Infestation and Invasive Species

- Previous Events

- Beaver Dam Failure, March 2022
- Hemlock Woolly Adelgid, Lake George, 2017
- Emerald Ash Borer (EAB), Shroon River, 2022

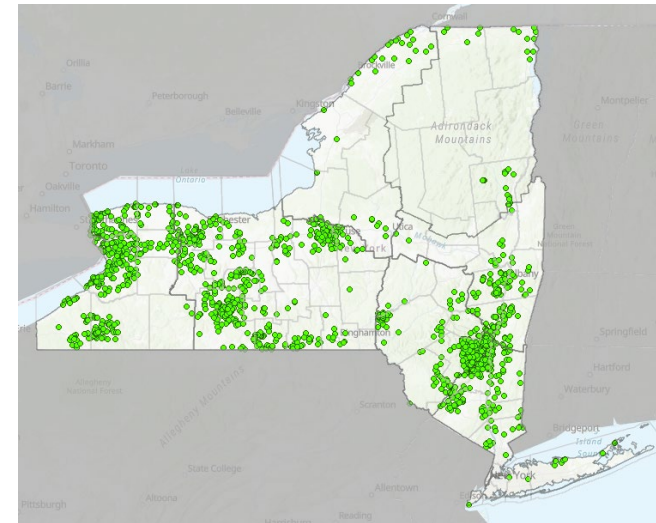
- Exposure

- Entire County is vulnerable

- Potential impacts:

- Soil destabilization
- Increased wildfire risk
- Impacts to agriculture/farms

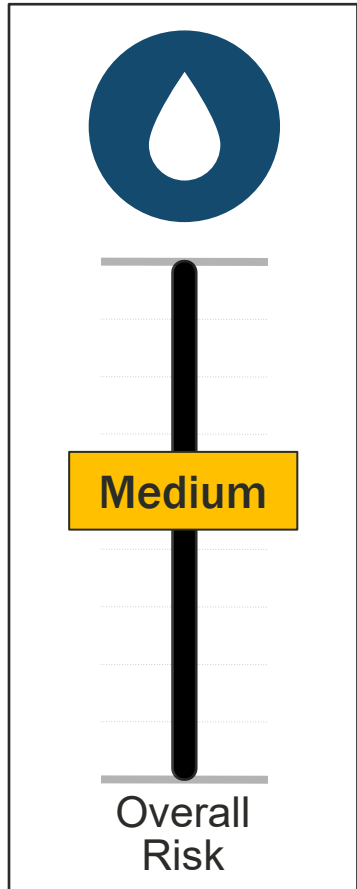
Warren County  
Ranking  
**MEDIUM**



EAB – Source: New York Invasive Species Network 2019



# Countywide Preliminary Risk Ranking: Infestation



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**



**Impact on Property: Medium**



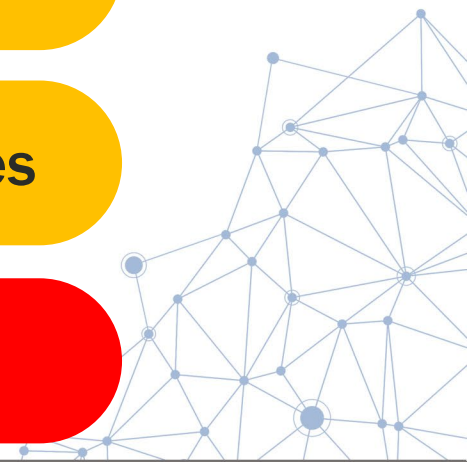
**Impact on Economy: Medium**



**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**





# Next Steps

- Update Risk Assessment
  - Prepare results to present to planning partners
  - Populate adjusted results municipal annexes
  - Planning Partnership Risk Assessment Meeting: February 15, 2023
  - Public Involvement Strategy – ongoing throughout the planning process
- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 15, 2023**



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!



**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #3 – AGENDA**  
**MEETING DATE/TIME: February 15, 2023 – 10:00 am**



- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up





# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Planning Partnership Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	February 15, 2023, 10:00 am

## Attendees:

Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Jessica Leerkes*	Engineer, Town of Chester
Dan Barusch*	Town/Village Lake George, Planner
Dave Duell*	Town of Queensbury Highway Superintendent
Mark DeMers	Deputy Highway Superintendent
Craig Leggett*	Supervisor, Town of Chester
Debra Runyan*	Town of Thurman Supervisor
Tammie DeLorenzo*	Assistant to the County Administrator, Warren County
Michael Geraci*	Supervisor, Town of Horicon
Frank E. Thomas*	Supervisor, Town of Stoney Creek
Khristopher Kassay	Town of Lake Luzerne
Erin Putney	Town of Lake Luzerne, Zoning Officer
Laura Moore*	Planner, Town of Queensbury
Westfall, Josh*	Planner, Town of Bolton
James Hull	Code Enforcement Officer, Town of Warrensburg
Mike Dunkley	Deputy Highway Superintendent, Town of Johnsbury
Ernie Dunkley	Safety Officer, Town of Johnsbury
Keith Lanfear	Superintendent of Public Works, Village of Lake George
William Norton	Superintendent, Water & Sewer, City of Glens Falls
John Strough	Supervisor, Town of Queensbury
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to provide a project status update and the preliminary municipal level hazards of concern relative risk rankings; to prepare the Planning Partners to review municipal rankings and adjust as necessary to take into account local data or undocumented issues.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation.</li> <li>Warren County (Jim Lieberum, Warren County Soil &amp; Water Conservation District) provided an overview of the importance of the plan in identifying projects to reduce risk and encouraged municipal</li> </ul>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<p>teams supporting the plan to include public works, fire department, emergency management, and law enforcement staff to provide information on past events and problem areas to support the development mitigation projects.</p> <ul style="list-style-type: none"><li>• The process continues to be on track for plan submittal to FEMA in August 2023.</li><li>• The majority of data to support the hazard mitigation plan (HMP) development has been received, with the receipt of the National Flood Insurance Program (NFIP) data pending processing by FEMA.</li></ul>	
2	<p>In-Kind Services Tracking/Outreach</p> <ul style="list-style-type: none"><li>• Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li><li>• Warren County reminded municipalities to submit documentation of in-kind hours to support the obligations related to the planning grant funding.</li><li>• The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>• Surveys to target the public, neighboring counties, agencies, and businesses have been distributed and will be used to provide additional input to the plan to support the identification of mitigation actions.</li></ul>	<p>Action: All staff to submit documentation of hours spent supporting the mitigation planning process, including hours spent to provide data, review documents, provide updates to communities.</p>
3	<p><b>Risk Assessment Overview</b></p> <ul style="list-style-type: none"><li>• Tt reviewed the methodology to calculate the relative risk of the county's identified hazards of concern and shared the preliminary risk rankings. The ranks of Low, Medium, and High for each hazard will serve as a guide in identifying impactful mitigation actions to reduce damages and increase resilience. After review and adjustment by the core group, the preliminary county level ranks are as follows:<ul style="list-style-type: none"><li>○ Disease Outbreak (including Covid-19, influenza, and tick-borne illnesses) - <b>Medium</b></li><li>○ Earthquake - <b>Medium</b></li><li>○ Extreme Temperatures - <b>Medium</b></li><li>○ Flood - <b>High</b></li><li>○ Dams Failure - <b>High</b></li><li>○ Infestation - <b>Medium</b></li><li>○ Severe Storm (Windstorm, Thunderstorm, Hail, Tornado) – <b>High</b></li><li>○ Severe Winter Storm (Heavy Snow, Blizzards, Ice Storms) - <b>High</b></li><li>○ Wildfire - <b>High</b></li></ul></li></ul> <p>The county ranks indicate the highest municipal risk rather than the calculated regional risk. The Steering Committee was tasked to review the information provided in the presentation (see attached) to provide</p>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<p>any additional input to revisit and potentially further adjust the rankings.</p> <p>Discussion included clarification that vulnerability assessment included only projected damages to general building stock and not potential infrastructure damages which are not modeled in Hazus-MH. These damages are an example of why the rankings should be adjusted, in particular, the flood ranking as it should include the risk posed by unmapped, localized flood areas evidenced by washouts and culvert failures.</p> <p>The public sharing of dam inundation areas was also discussed and will be addressed by Emergency Services staff.</p> <ul style="list-style-type: none"><li>• Tt will distribute municipal specific rankings of the hazard of concern to the Planning Partnership the week of 2/20/23. The Planning Partnership to review and adjust ranks for the hazards of concern to incorporate local hazard history and undocumented data, if necessary.</li></ul>	
6	<p><b>Upcoming Meeting</b></p> <ul style="list-style-type: none"><li>• Mitigation Strategy Workshop – March 15, 2023.</li></ul>	
7	<p><b>Next Steps</b></p> <ul style="list-style-type: none"><li>• Update municipal level risk ranking as necessary</li><li>• Address data gaps in municipal annexes</li><li>• Continue to engage the public</li><li>• Develop mitigation strategy/actions: <b>February 2023</b></li><li>• Mitigation Strategy Workshop with FEMA and NYSDHSES – <b>March 15, 2023</b></li></ul>	
7	<p><b>Conclusion</b> - The meeting concluded at 10:55 am.</p>	





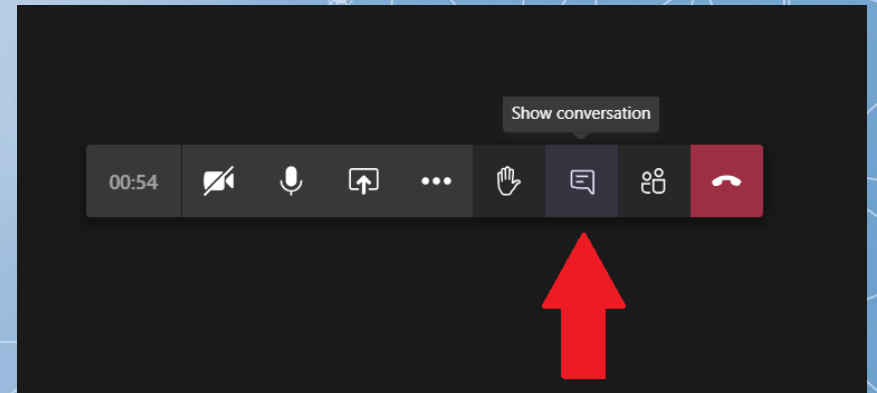
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Planning Partnership #2 Meeting | February 15, 2023 | 10:00 – 11:00 AM

## ***WELCOME!***

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*



# Agenda

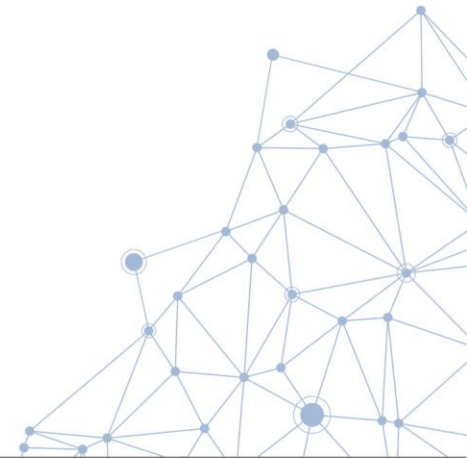
- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up

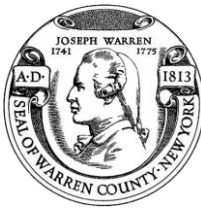




# Project Schedule Review

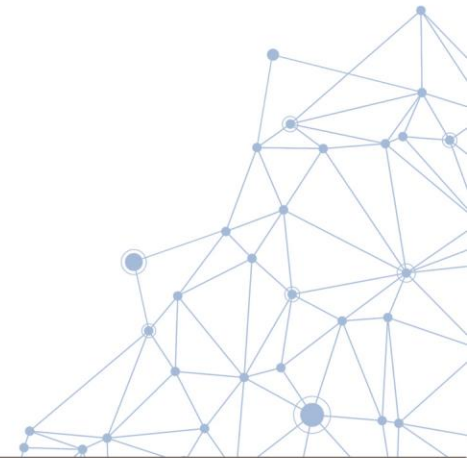
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ☐ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ☐ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ☐ | May 2023                | Review draft plan                                    |
| ☐ | July/August 2023        | Submit plan to NYSDHSES and FEMA                     |

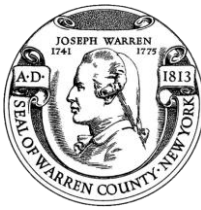




# Progress

- Requested NFIP Data – *Data pending*
- GIS Data Collection - *Complete*
- Critical Facility Survey for Municipal Input – *Complete*
- HMP website, HMP Fact Sheet, Citizen Survey, Agency Surveys - *Complete*
- County-Level/Regional Plan Collection – *Complete*
- Planning Partnership Participation – 100%






# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/ Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

# Hours







# Public and Stakeholder Outreach

- HMP website is LIVE!

<https://www.warrencountynynewyorkhmp.com>

- Social Media
- Public Survey
- Stakeholder Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey

**WARREN COUNTY HAZARD MITIGATION PLAN 2023 UPDATE**

Home About What is Mitigation Meetings Calendar Explore the Plan Additional Information

Warren County Hazard Mitigation Plan 2023 Update

Welcome to the Warren County Hazard Mitigation Plan (HMP) Website. This website provides project updates, resources, and links to hazard mitigation in support of the HMP update.

The goal of the project is to save lives and property through the reduction of hazard vulnerability for Warren County and its municipalities. During the course of this planning project, county and local leaders and the community will work in tandem to identify risks, assess capabilities, and formulate a strategy to reduce disaster vulnerability.

Public participation and feedback are vital parts of the hazard mitigation planning process. The Warren County HMP Steering Committee has developed a mitigation survey to assist in providing the public an outlet to contribute to the Warren County HMP update. This survey will be used to develop portions of the HMP.

If you have any questions or comments regarding the HMP or planning process, please complete this form, and someone from the Planning Partnership will be in touch.

Events in February 2023

List Month Week Day February 2023 Go < Today >

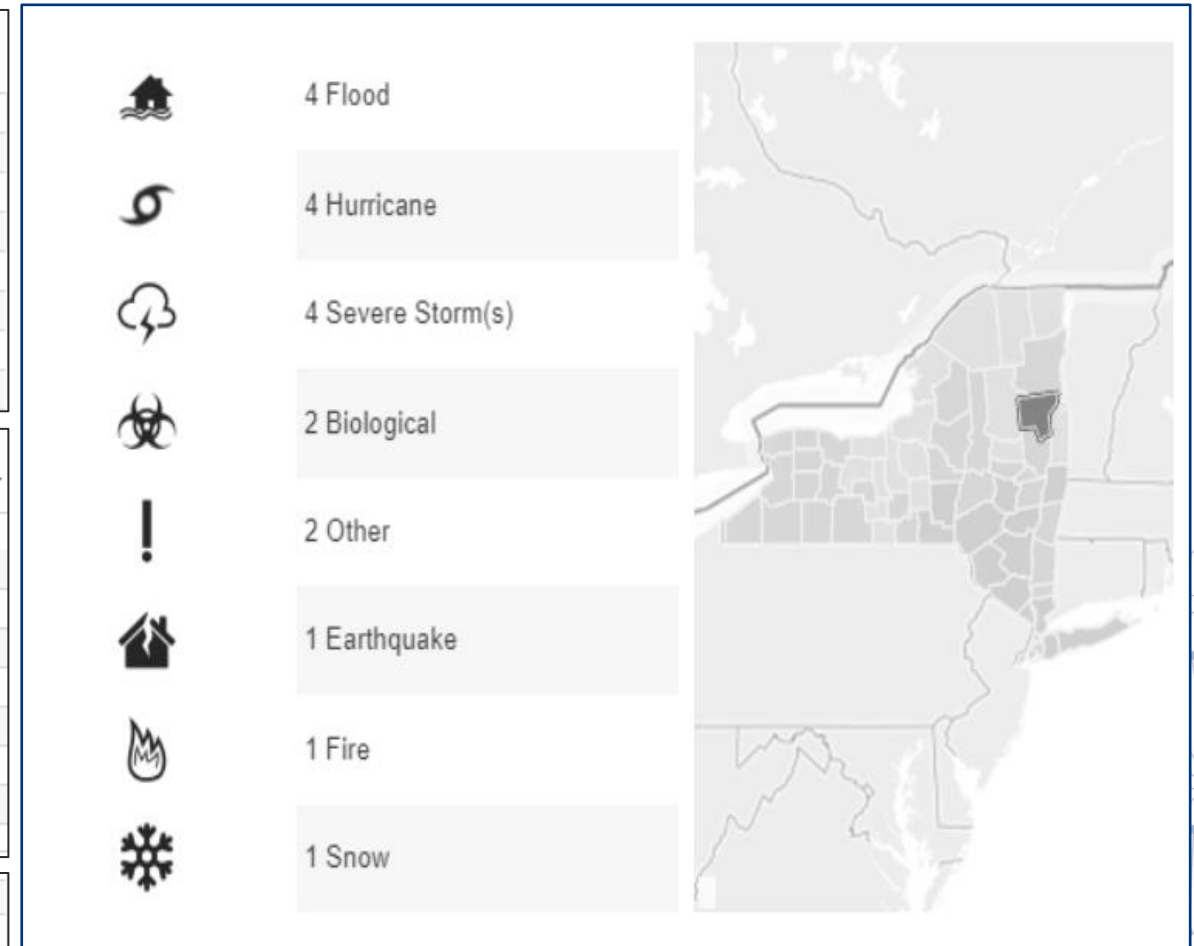


# Hazard Mitigation – What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

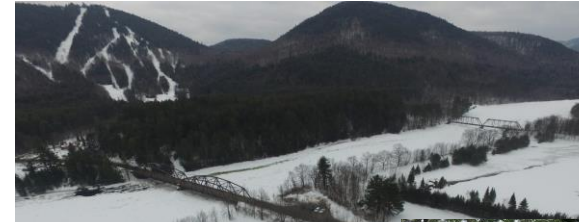
Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480





# 2023 HMP Hazards of Concern

- Disease Outbreak
- Earthquake
- Extreme Temperatures
- Flood
- High Hazard Potential Dams
- Infestation
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire





# What is Risk?

## ✓ Hazard

- Source of potential danger or adverse condition

## ✓ Exposure

- Manmade or natural features that are exposed to the hazard

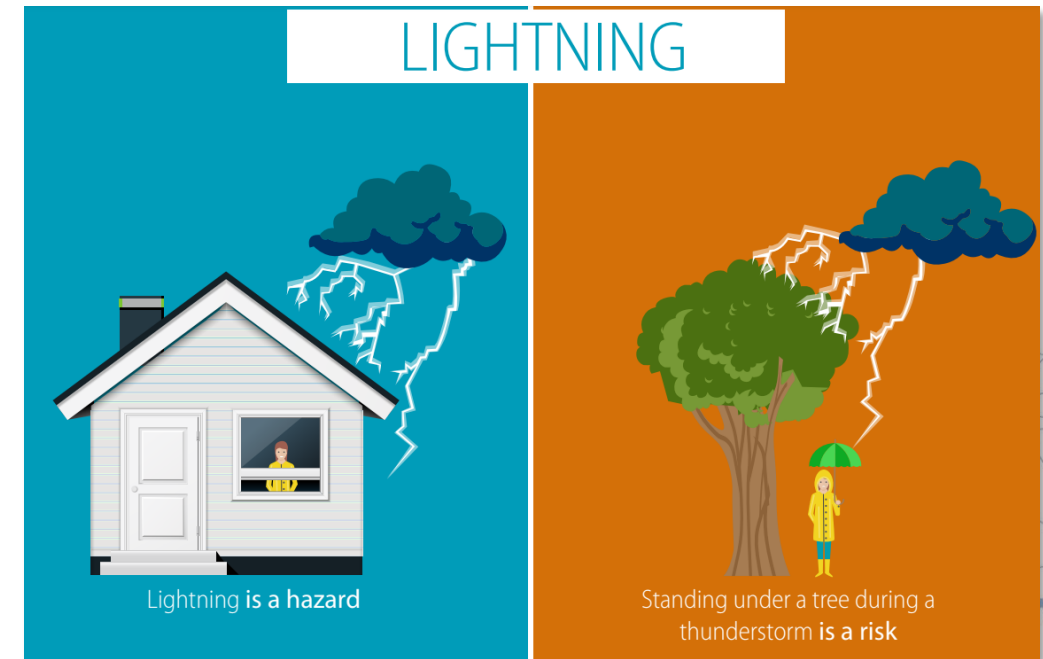
## ✓ Vulnerability

- Damage susceptibility of the exposed features

## ✓ Adaptive Capacity (or capability)

- Plans/policies
- Response/recovery
- Financial resources

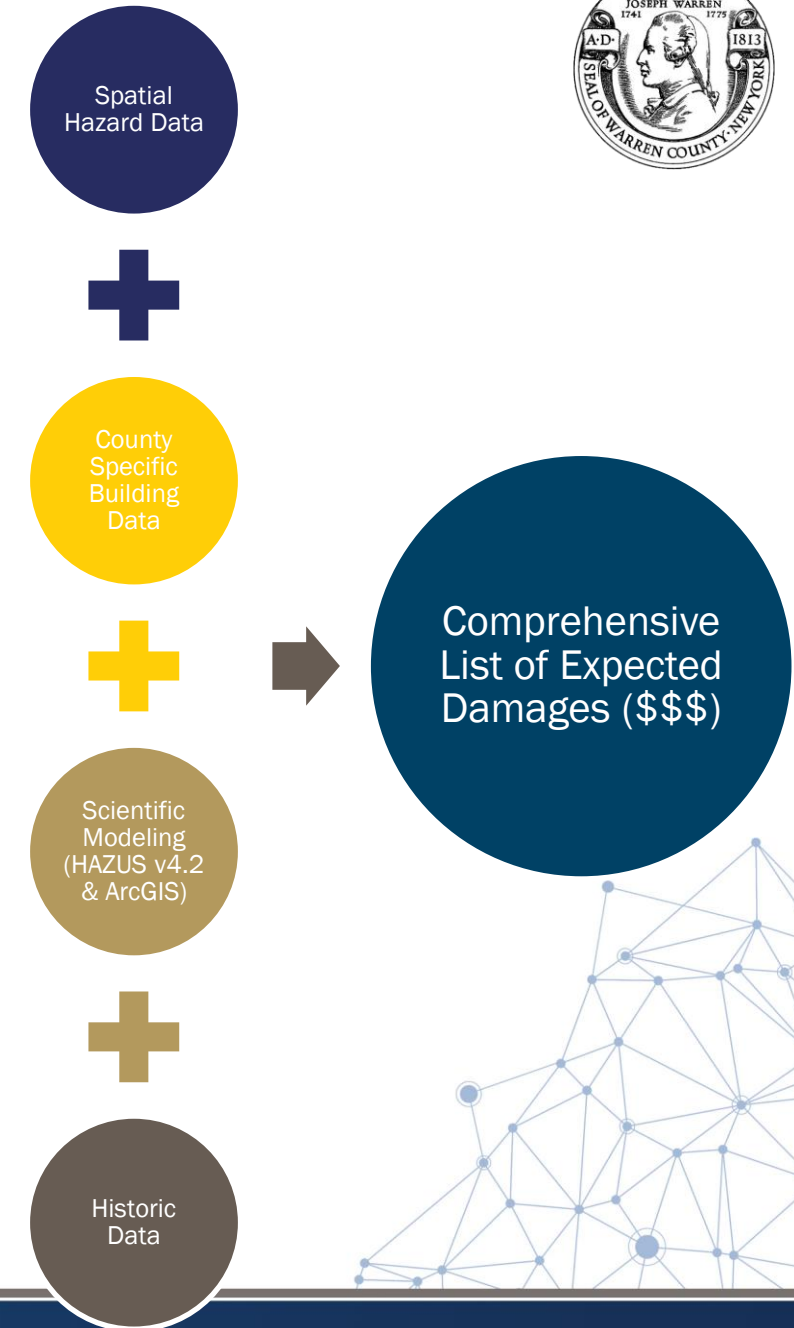
## ✓ Climate Change





# Purpose of the Risk Assessment

- To get a better understanding of the risks you face
- Initial results based on available data
- Quantitative data (population/structures exposed, structural damages within hazard zones) used when available
- Qualitative community input (such as unmapped flood areas) integrated to adjust results
- Local community input to adjust relative rankings





# Preliminary Hazard Ranking

How are the rankings calculated?

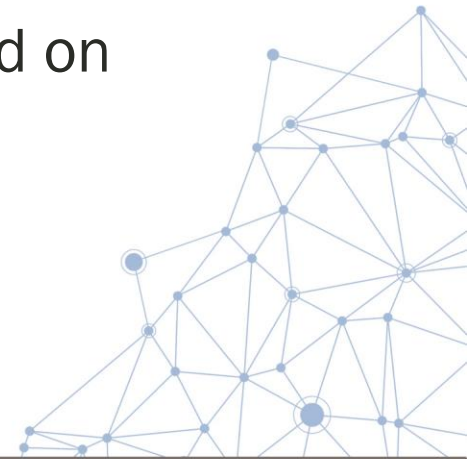




# Preliminary Hazard Ranking Methodology

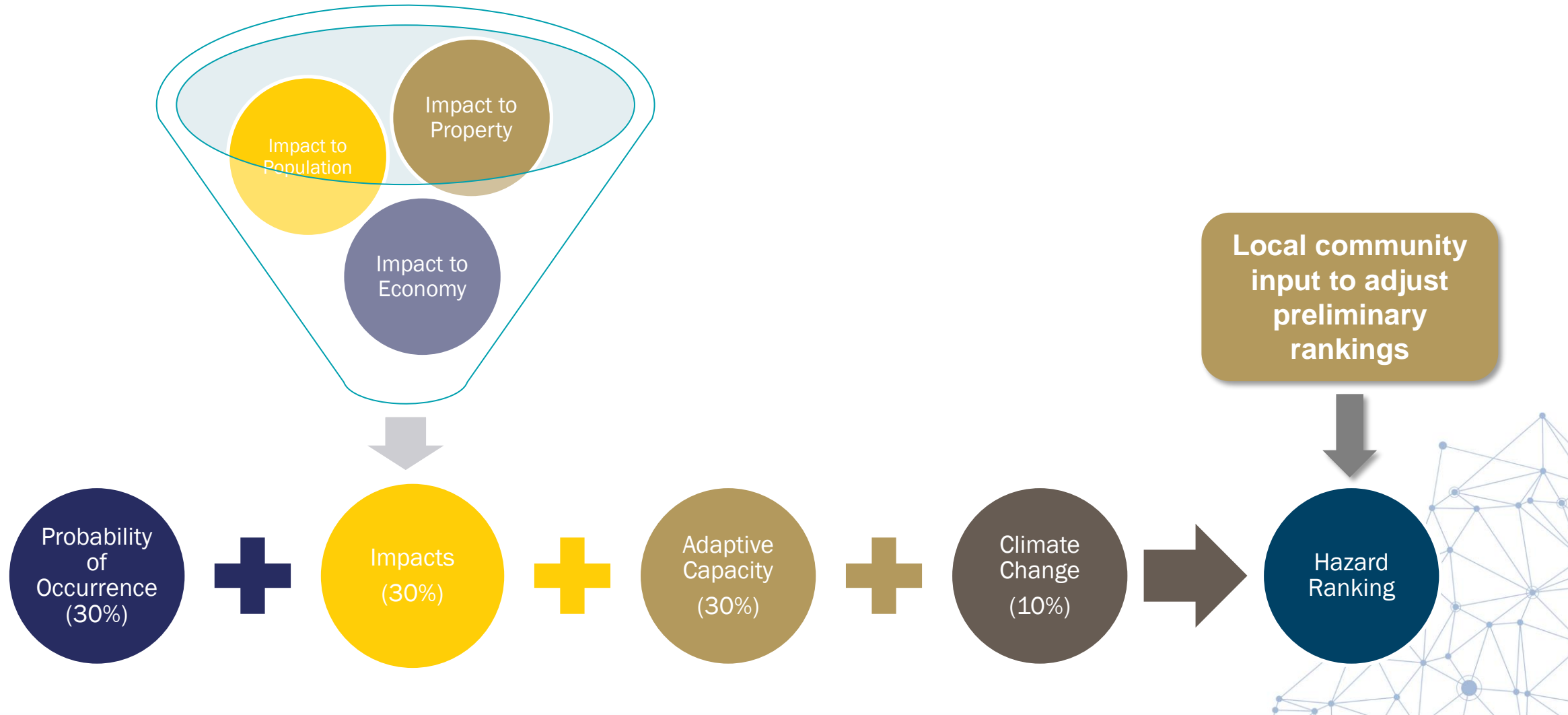
Hazard Ranking is determined by quantitative and qualitative factors including:

- The calculated probability of a hazard occurring based on historical data
- *Impacts to people, property, and the economy* based on GIS data and analysis of exposure.
- The degree to which climate change will affect future occurrences based on best available data.
- Capability- the ability of your community to respond to the hazard based on ordinances, mitigation strategies and procedures, and readiness.





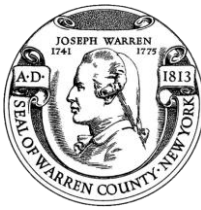
# Hazard Ranking Formula



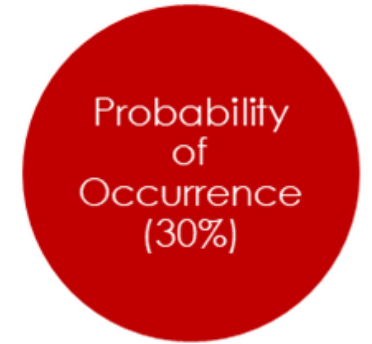
# Ranking the Hazards of Concern

What information plays a role in determining the risk rankings?

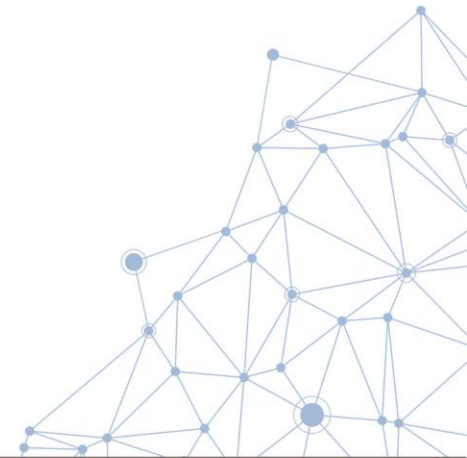




# Probability Of Occurrence



- **Unlikely**
  - Not likely to occur or less than 1% annual chance of occurring
- **Rare**
  - Between 1 and 10% annual chance of occurring
- **Occasional**
  - Between 10 and 100% annual chance of occurring
- **Frequent**
  - 100% chance occurring; occurs multiple times a year







# Hazard Ranking Input

## Impact on Population – Function of population exposed

- ✓ Low – 14% or less population exposed
- ✓ Medium – 15%-29% population exposed
- ✓ High – 30%+ population exposed

## Impact on property – Function of structures exposed

- ✓ Low – 14% or less structures exposed
- ✓ Medium – 15%-29% structures exposed
- ✓ High – 30%+ structures exposed

## Impact on economy – Function of damages to building stock

- ✓ Low – 9% or less loss estimate of total replacement cost
- ✓ Medium – 10%-19% loss estimate of total replacement cost
- ✓ High – 19%+ loss estimate of total replacement cost

## Capability – Function of level of planning, policies, enforcement

- ✓ Weak – outdated policies; limited to no deployable resources; limited capabilities to respond; long recovery
- ✓ Moderate – minimum requirements; mitigation strategies identified but not implemented; moderate county capabilities
- ✓ Strong – exceed requirements; mitigation/protective measures in place; county/jurisdiction has ability to recover quickly because resources are readily available, and capabilities are high

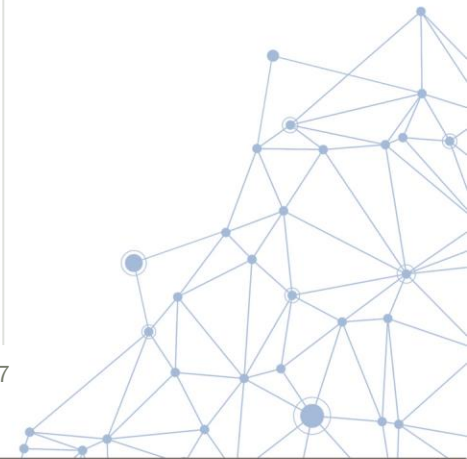
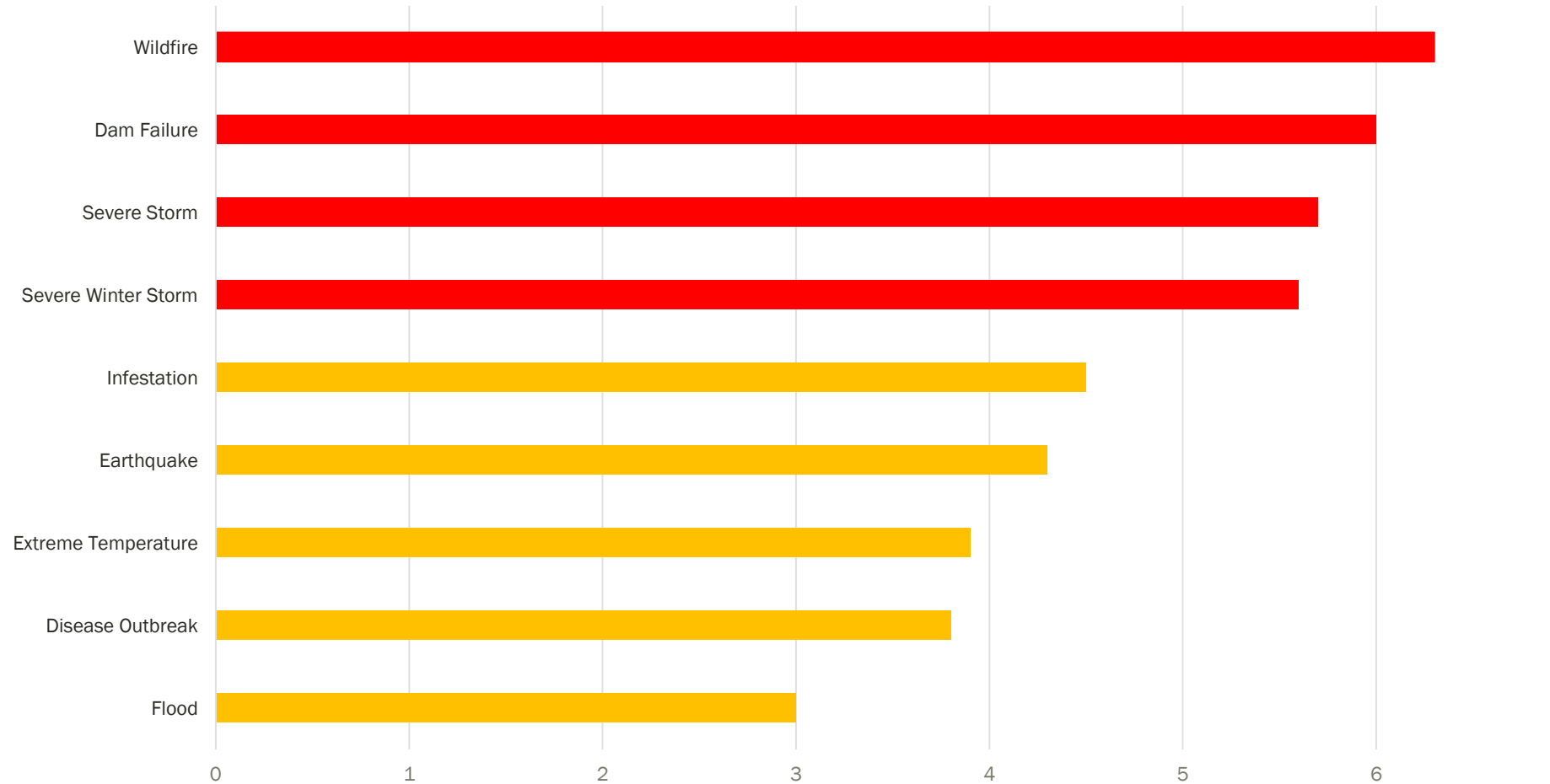
## Climate Change – Function of climate predictions

- ✓ Low - No local data is available; modeling projects are uncertain on whether there is increased future risk; confidence level is low (inconclusive evidence)
- ✓ Medium - Studies and modeling projections indicate a potential for exacerbated conditions due to climate change
- ✓ High - Studies and modeling projections indicate exacerbated conditions/increased future risk due to climate change



# Preliminary County Overall Risk Ranking

County Preliminary Relative Risk Rankings





# Preliminary County Overall Risk Ranking

Hazard of Concern	2021 CEPA Ranking	2023 Calculated Risk Ranking	2017 Risk Ranking	2023 Adjusted Ranking
Earthquake	Low	Low	High	Medium
Extreme Temperature	-	Medium	-	Medium
Flood	Very High	Low	Medium	Medium
Severe Storm	Medium	High	High	High
Severe Winter Storm	High	High	High	High
Wildfire	Medium	High	High	High
Infestation	-	Medium	Medium	Medium
Dam Failure	-	High	-	High
Disease Outbreak/Pandemic	Medium	Low	Medium	Medium

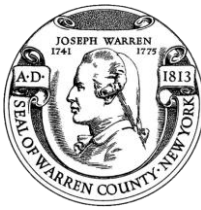
\* Potential adjustments

# Municipal Level Risk Ranking (Preliminary)



Municipality	Hazard Ranking								
	Earthquake	Extreme Temps	Flood	Severe Storm	Severe Winter Storm	Wildfire	Infestation	Dam Failure	Disease Outbreak
Bolton (T)	Low	Medium	Low	High	High	Medium	Medium	High	Medium
Chester (T)	Low	Medium	Medium	High	High	Low	Medium	High	Low
Glens Falls (C)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Hague (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Horicon (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Johnsburg (T)	Low	Medium	Low	High	High	Low	Medium	High	Medium
Lake George (T)	Low	Medium	Low	High	High	High	Medium	Medium	Medium
Lake George (V)	Low	Medium	Low	High	High	High	Medium	Low	Low
Lake Luzerne (T)	Medium	Medium	Medium	High	High	Medium	Medium	Medium	Low
Queensbury (T)	Medium	Medium	Medium	High	High	High	Medium	Medium	Low
Stony Creek (T)	Medium	Low	Low	High	High	Low	Medium	Medium	Low
Thurman (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Warrensburg (T)	Medium	Medium	Medium	High	High	High	Medium	Medium	Low
Warren County	Medium	Medium	Medium	High	High	High	Medium	High	Medium

\* adjusted



# Public Input: Flood Hazard Events

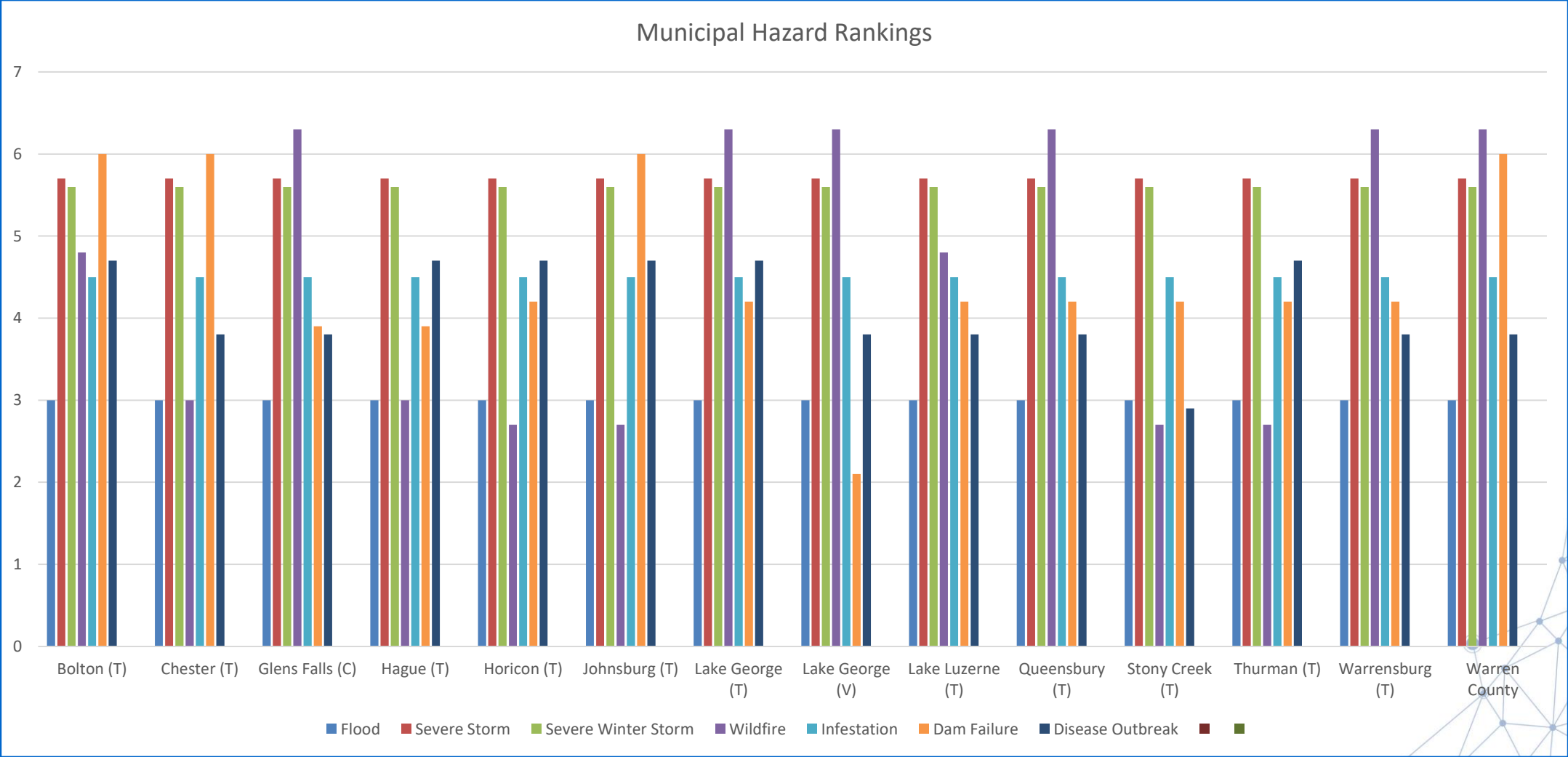
In the past 10 years, which of the following hazard events have you experienced in Warren County? Check all that apply.







# Preliminary Hazard Ranking – Warren County

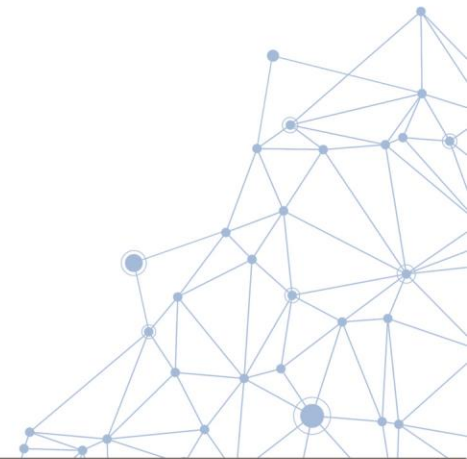




# Earthquake

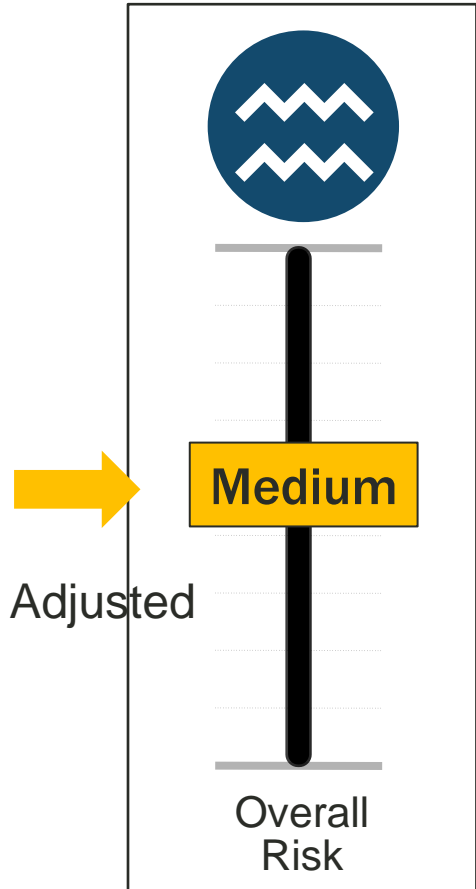
- Number of Events
  - 189 earthquakes epicentered in NYS with 4 epicentered in Warren County, per 2015 NYS HMP, between 1973 and 2014
  - Faults are located within the County
  - Individual Assistance (IA) declared for EMA declarations DR-1415 in Warren County (5/16/2002)
  - Impacts
    - 2 earthquake scenarios: 500-yr and 2500-yr events
    - People and structures located in areas with soils more susceptible to earthquakes

Warren County  
Ranking  
**MEDIUM**





# Countywide Preliminary Risk Ranking: Earthquake



**Probability of Occurrence: Rare**



**Impact on Population: Medium**

65.6% of population is exposed and vulnerable (NEHRP D & E soils)



**Impact on Property: High**

48.7% of County building stock is exposed and vulnerable (NEHRP D & E soils)



**Impact on Economy: Low**

\$1.9% of Structural Replacement Cost Value damaged



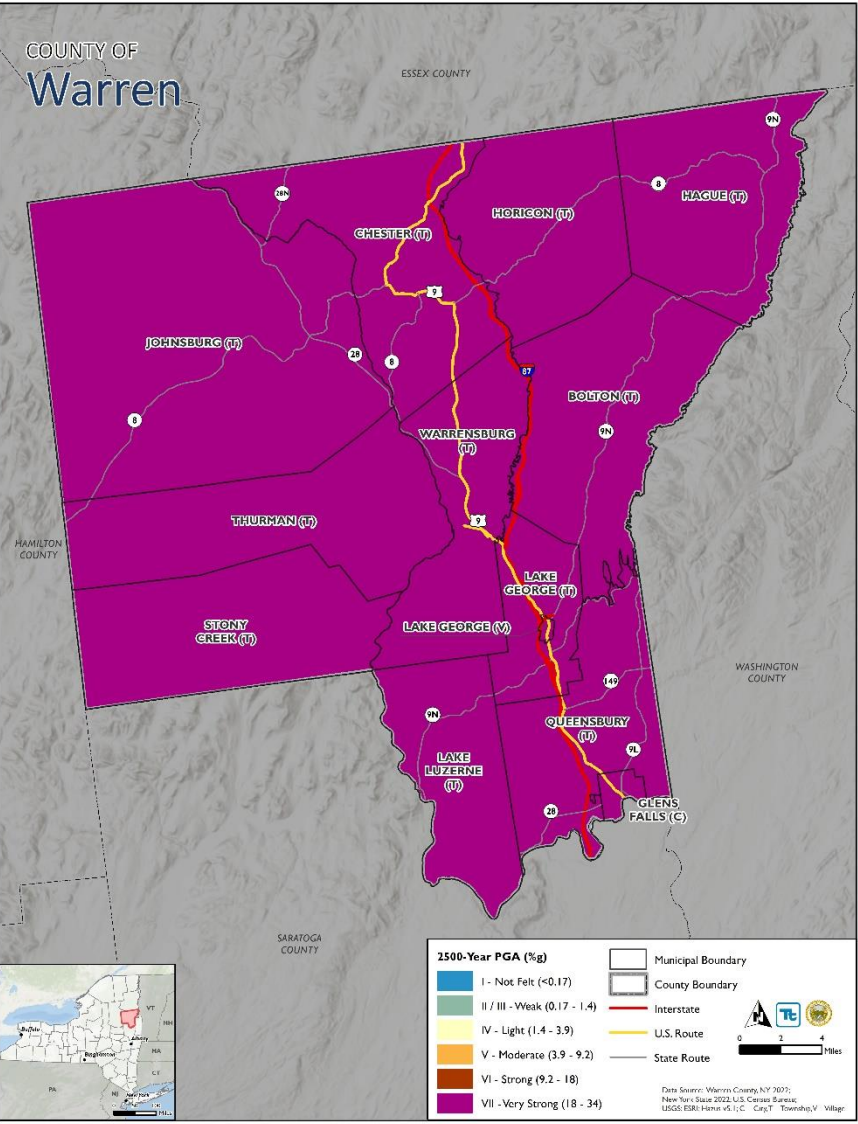
**Adaptive Capacity: Medium for all municipalities**



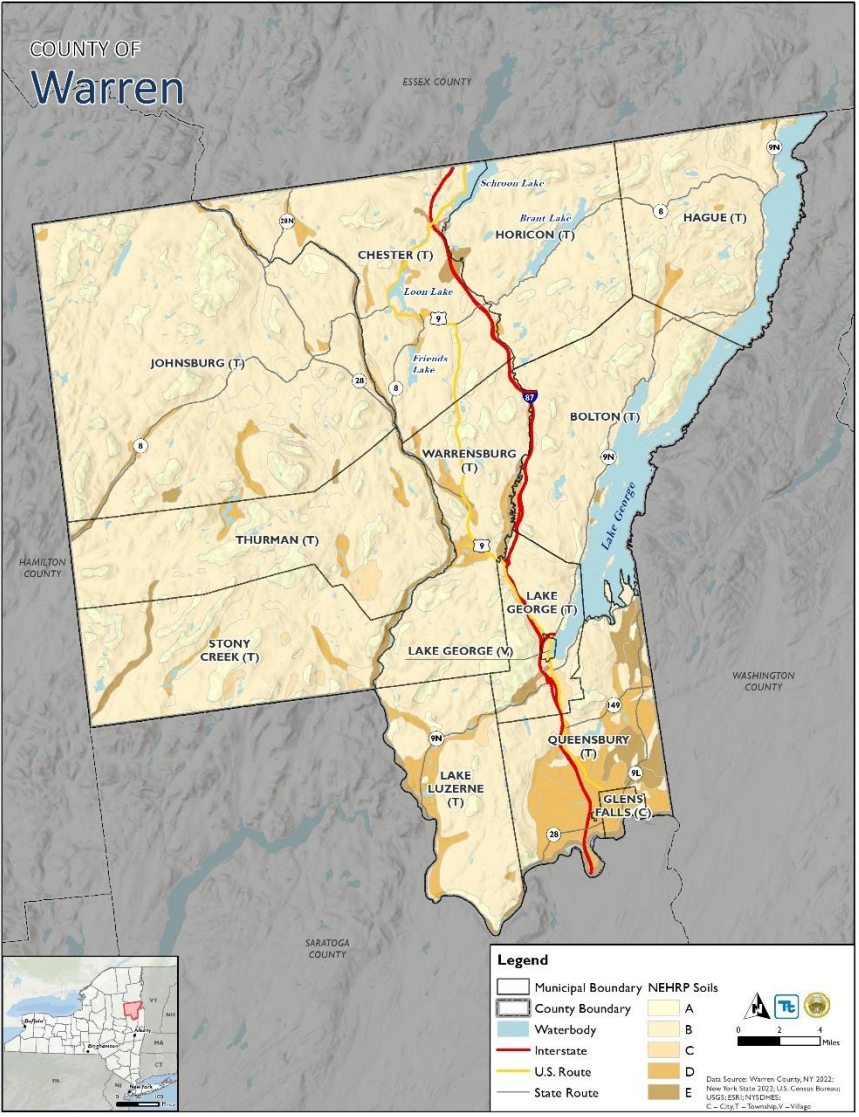
**Climate Change: Low for all municipalities**



# Peak Ground Acceleration



# NEHRP Soil Class



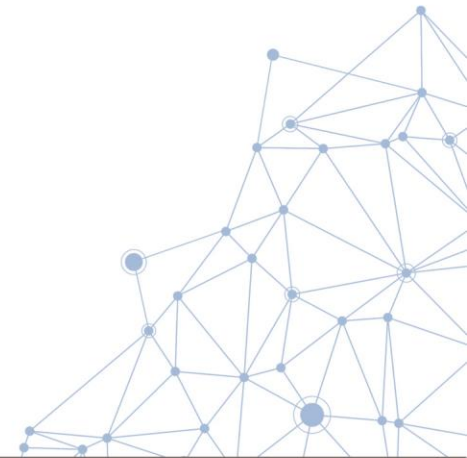




# Flood

- Previous Events
  - Riverine, flash, and stormwater flooding
    - Between 2000 and 2022, Warren County included in 2 FEMA flood-related declarations.
      - FEMA-DR-1993 (Severe Storms Tornadoes, Winds and Flooding) – April 26, 2011
      - FEMA-DR-4129 (Severe Storms, and Flooding) – July 2013
- Exposure
  - People and property located in the 1% annual chance flood area

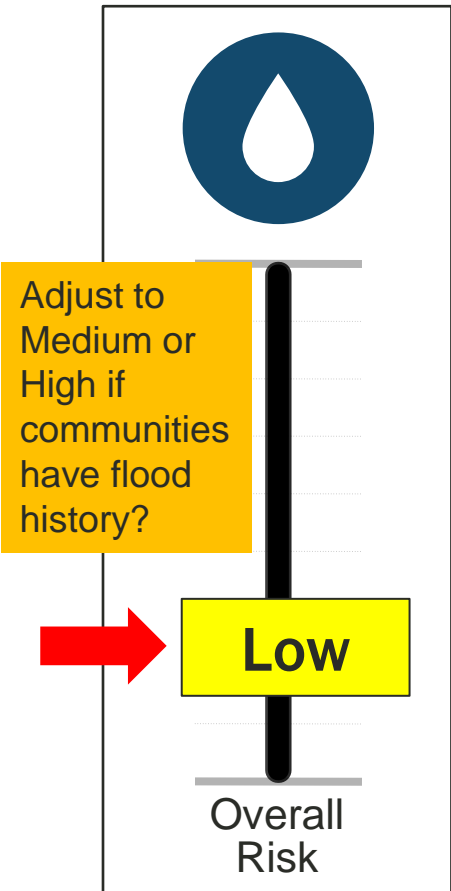
Warren County  
Ranking  
**LOW**







# Countywide Preliminary Risk Ranking: Flood



**Probability of Occurrence: Occasional or Frequent**



**Impact on Population: Low**

1,385 people (2.1% of the population) in the SFHA



**Impact on Property: Low**

1,252 buildings (3.1% of total County buildings) in the SFHA; 1 Rep Loss



**Impact on Economy: Low**

\$721 M Replacement Cost Value (RCV) (3% of County total RCV) located in the Regulatory Floodplain



**Adaptive Capacity: Medium for all municipalities**



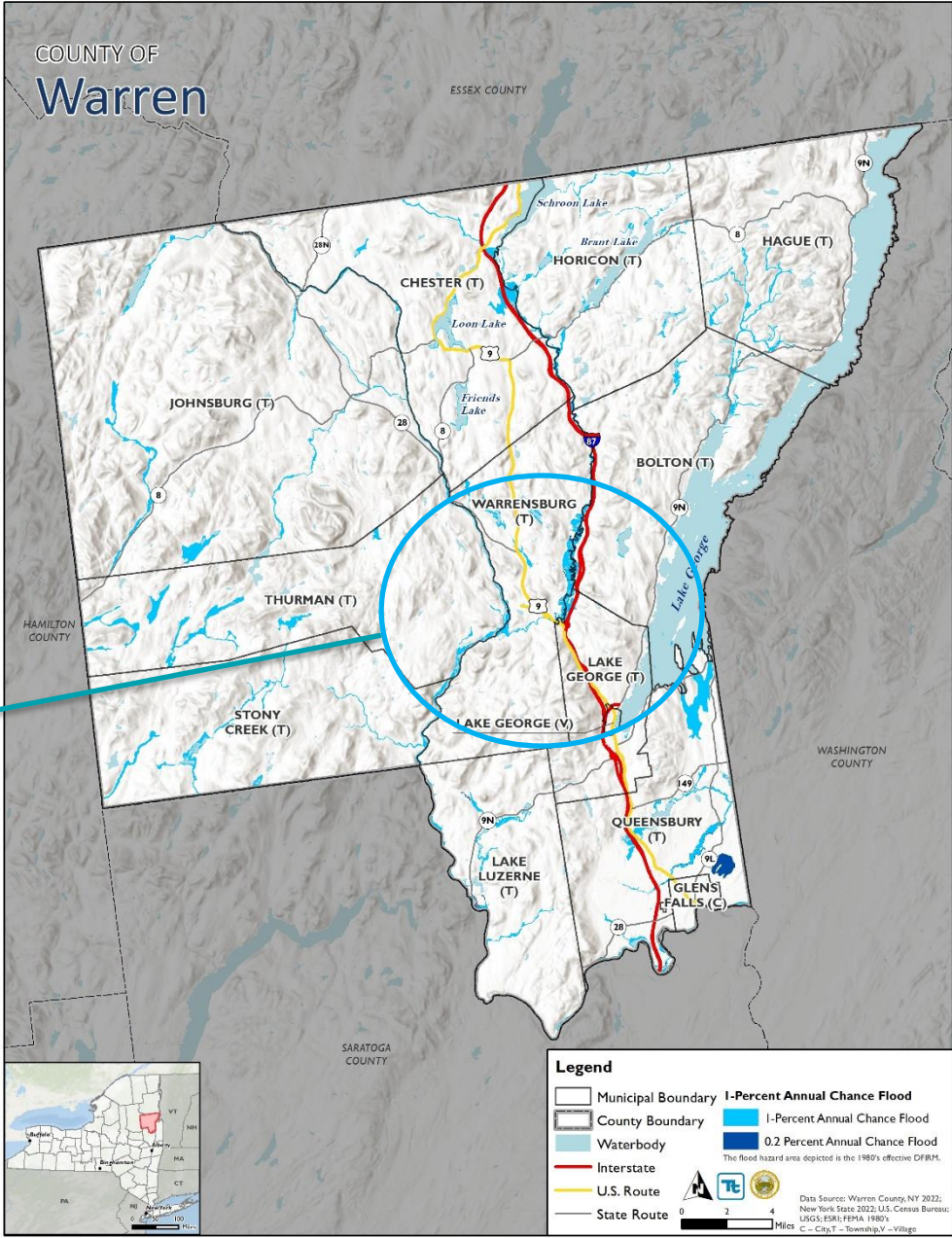
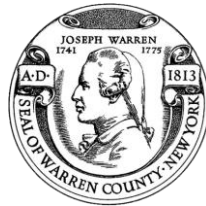
**Climate Change: High for all municipalities**

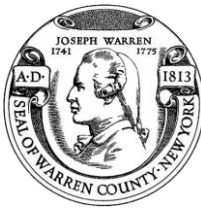


# Preliminary 2023 vs. 2017 Rankings (Flood)

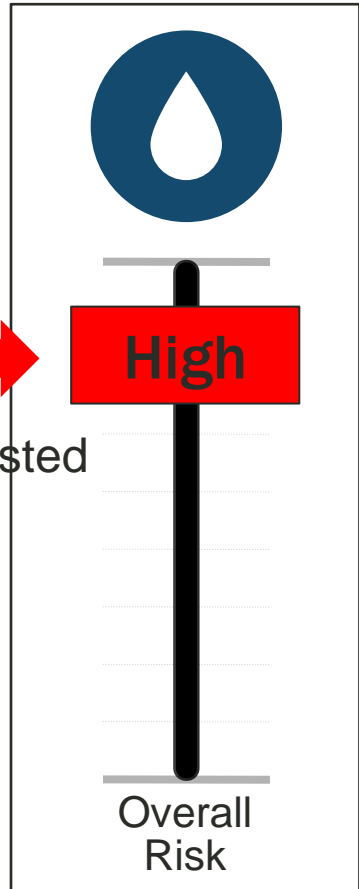
Warren County Municipality	IMPACT ON POPULATION	IMPACT ON PROPERTY	IMPACT ON ECONOMY	RISK RANKING	RISK RANKING
	Percent Population Exposed (1-Percent Annual Chance Flood Event)	Percent of Total Buildings in 1% Flood Area	Percent of Total GBS RCV	2023 Estimated	2017
Bolton (T)	6.5%	6.6%	6.5%	Low	Medium
Chester (T)	8.5%	8.2%	7.6%	Low	Medium
Glens Falls (C)	0.0%	0.1%	1.0%	Low	Medium
Hague (T)	7.1%	7.0%	3.2%	Low	Medium
Horicon (T)	5.2%	5.2%	7.2%	Low	Medium
Johnsburg (T)	2.3%	2.4%	3.8%	Low	Medium
Lake George (T)	2.6%	2.5%	1.0%	Low	Medium
Lake George (V)	0.2%	1.1%	1.2%	Low	Medium
Lake Luzerne (T)	6.5%	6.3%	3.6%	Low	Medium
Queensbury (T)	1.3%	1.4%	2.1%	Low	Medium
Stony Creek (T)	3.0%	3.2%	3.8%	Low	Medium
Thurman (T)	0.7%	0.8%	0.5%	Low	Medium
Warrensburg (T)	3.7%	3.9%	2.7%	Low	High
Warren County	2.1%	3.1%	3.0%	Low	Medium

# Flood Hazard Areas





# Countywide Preliminary Risk Ranking: Dam Failure



**Probability of Occurrence: Rare**



**Impact on Population: High**

216 people in inundation areas



**Impact on Property: High**

254 buildings (0.6% of total County buildings) located in inundation areas



**Impact on Economy: High**

\$130 M Replacement Cost Value (RCV) (0.5% of County total RCV) in inundation areas



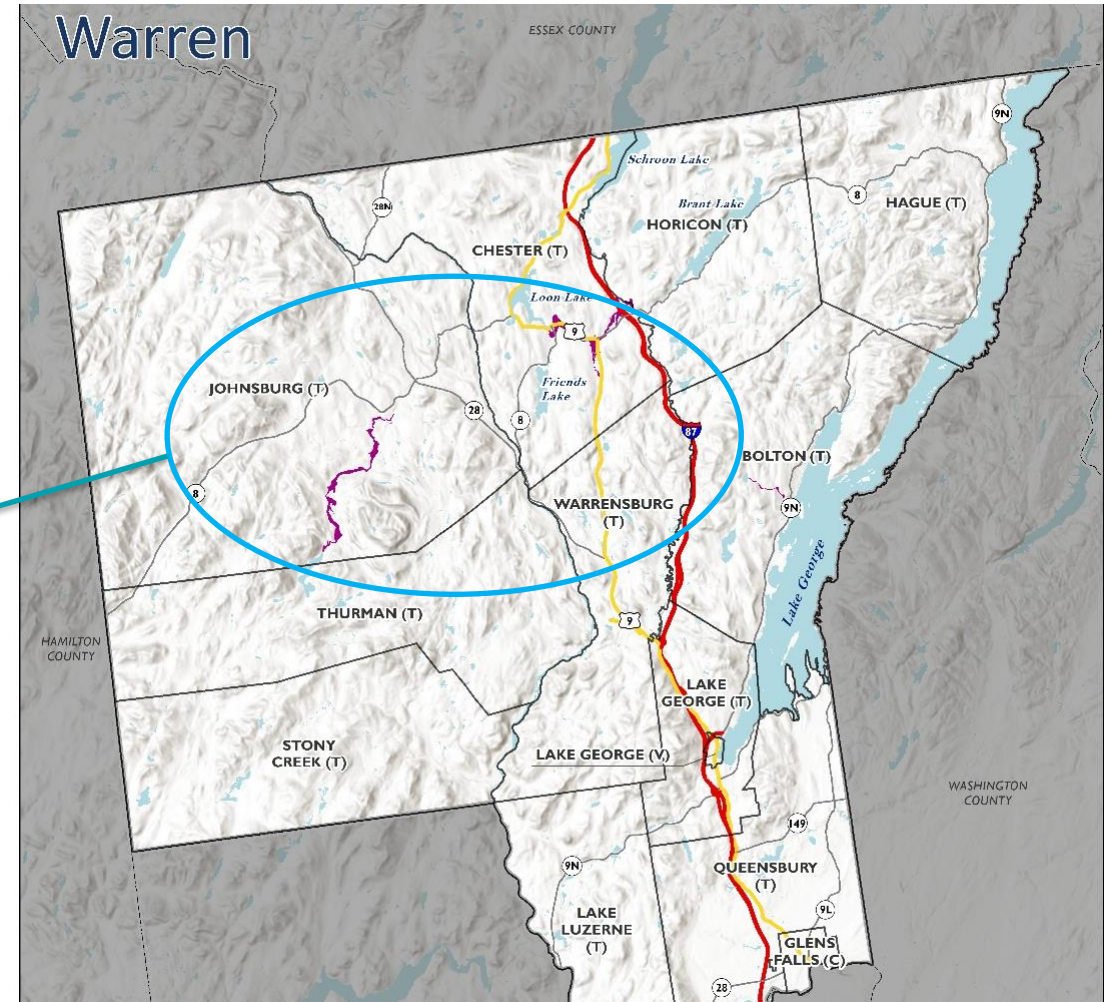
**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**



# Dam Inundation Areas







# Severe Storm

- Previous Events

- Hazard includes lightning, hail, and windstorms
- FEMA-DR-4472 (Severe Storms, Straight-line Winds and Flooding) – October 2019
- Between 2016 and 2022, Warren County was included in 1 FEMA severe storm-related declaration.
- According to the NOAA, 5 tornado events took place in Warren County between 1950 and 2022

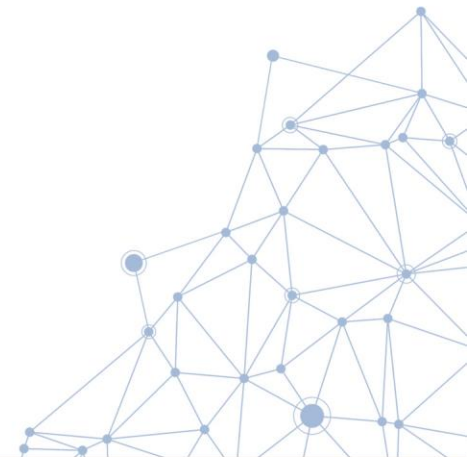
Warren County  
Ranking  
**HIGH**

- Exposure

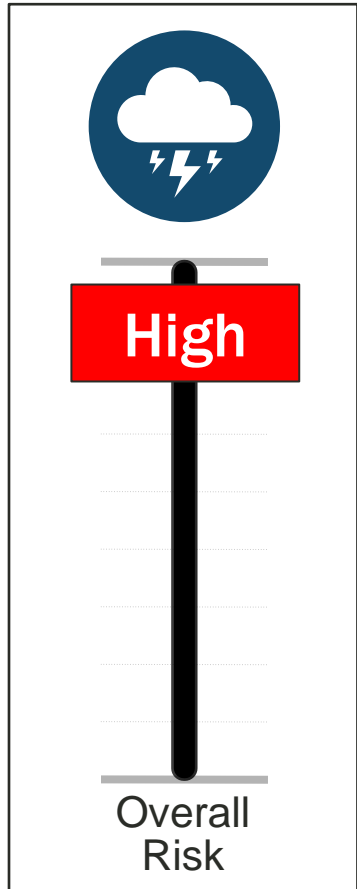
- Population and property exposed to 100-year peak wind gusts (Tropical Storm-39 to 73 mph) and 500-year (Tropical Storm speeds)
- All people and property exposed and vulnerable

- Potential Impacts

- Power outages
- Critical facility and infrastructure damage



# Countywide Preliminary Risk Ranking: Severe Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable



**Impact on Economy: Low**

\$4.8 M (less than 1%) general building stock loss for a 500-year event



**Adaptive Capacity: High for all municipalities**



**Climate Change: High for all municipalities**

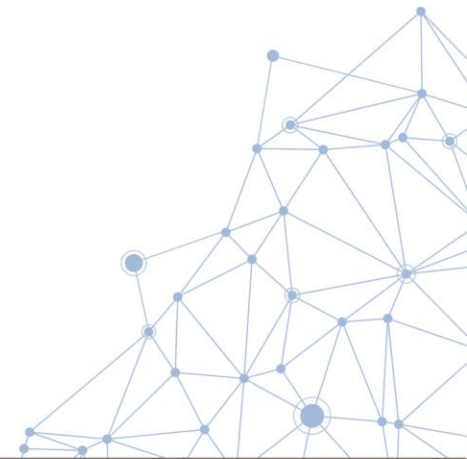


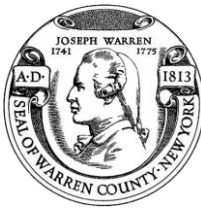
# Wildfire

- Previous Events

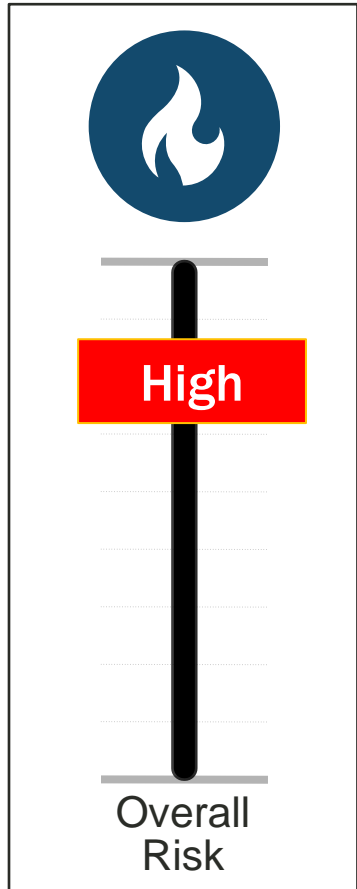
- The NYS HMP identified wildfire as a hazard of concern for New York State, however the daily probability of a wildfire event for the state is .09 percent.
- Warren County was included in one FEMA fire declaration; however, it was a manmade terrorist attack.
- According to the 2020 Warren County CEPA, the wildfire hazard is ranked medium.
- Exposure
  - People and property located in Wildfire Urban Interface WUI.

Warren County  
Ranking  
**HIGH**





# Countywide Preliminary Risk Ranking: Wildfire



**Probability of Occurrence: Occasional**



**Impact on Population: High**

44.4% of population exposed to the WUI Interface



**Impact on Property: High**

14,488 buildings (35.9 % of County total) exposed to WUI Interface



**Impact on Economy: High**

\$8.6M in RCV 35.4% of County total) exposed to WUI Interface

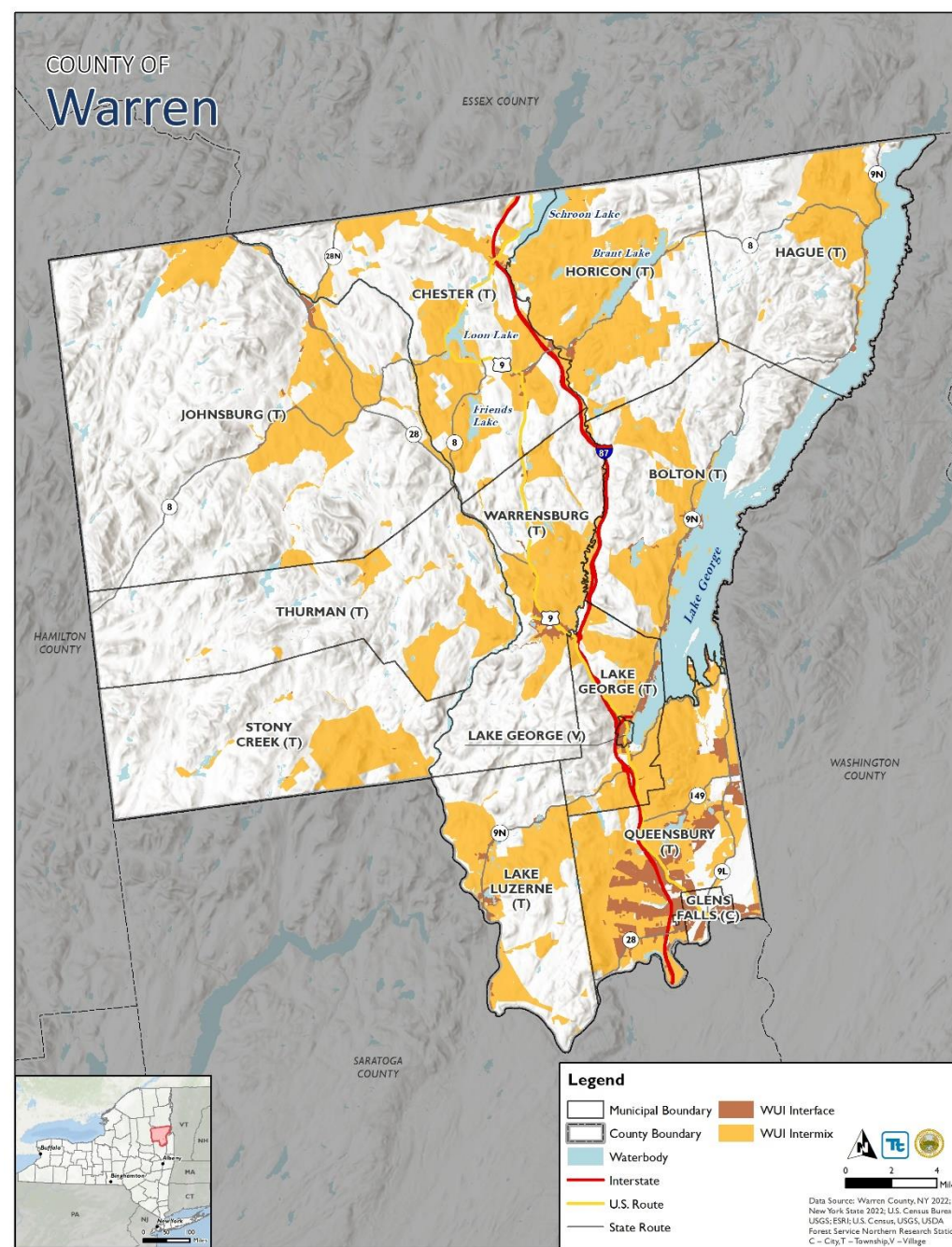
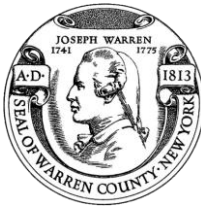


**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**

# Wildland Urban Interface/Intermix Area



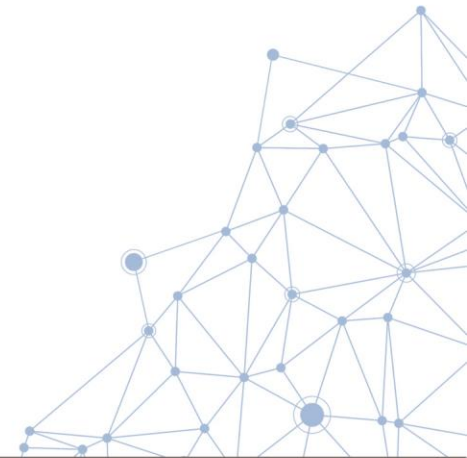




# Severe Winter Storm

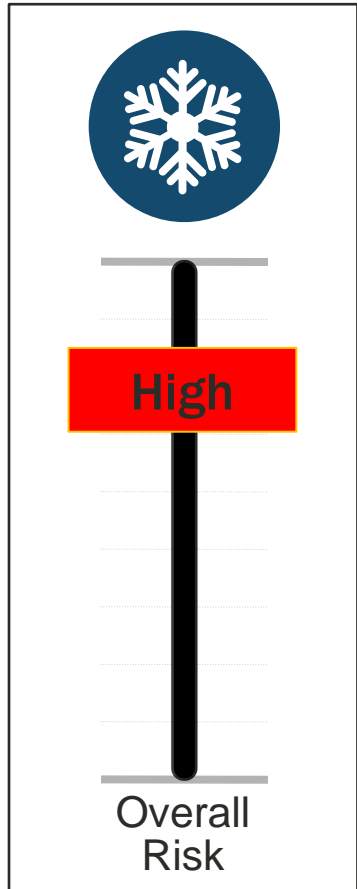
- Hazard includes heavy snow, blizzards, ice storms
- Previous Events
  - FEMA included Warren County in one winter storm-related disaster declaration
    - FEMA-EM-3107 (Severe Blizzard) – March 1993
- Exposure
  - All people and property exposed and vulnerable
- Potential Impacts
  - Power outages
  - Critical facility and infrastructure damage
  - Transportation interruptions/accidents

Warren County  
Ranking  
**HIGH**





# Countywide Preliminary Risk Ranking: Severe Winter Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable; however, impacts are minimal



**Impact on Economy: Low**

\$1.2M (5%) potential losses to building stock



**Adaptive Capacity: High for all municipalities**



**Climate Change: Medium for all municipalities**

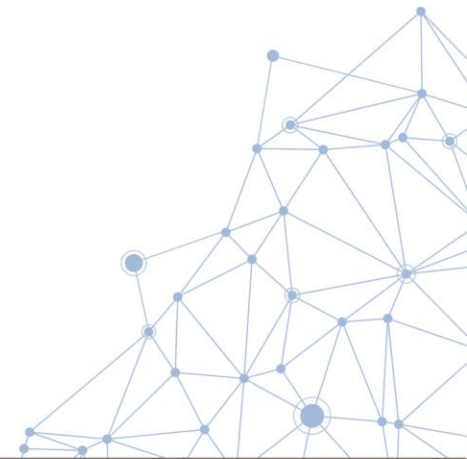


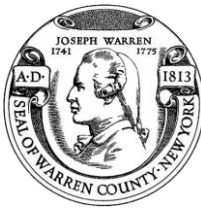
# Disease Outbreak/Pandemic

- Previous Events

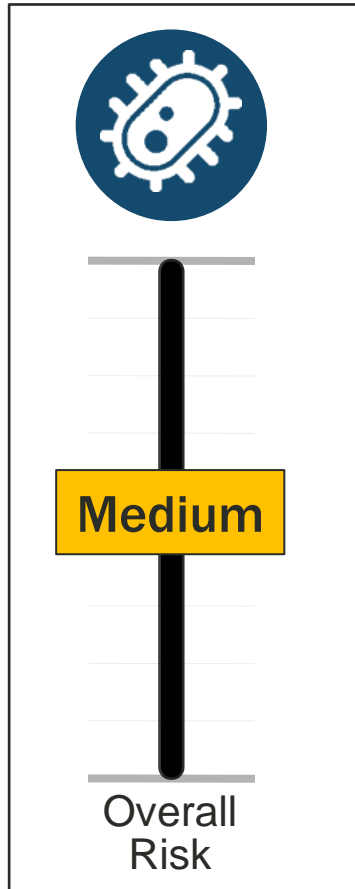
- According to the 2020 Warren County CEPA, the pandemic hazard is ranked medium.
- The County has been impacted by the COVID-19 pandemic (DR-4480).
- The County has been impacted by various diseases (COVID-19, West Nile Virus, Lyme disease)
- Exposure
  - Entire County is exposed and vulnerable; however, not occurring multiple times a year with significant impacts
  - Severe events can lead to staffing and bed shortages in hospitals

Warren County  
Ranking  
**MEDIUM**





# Countywide Preliminary Risk Ranking: Disease Outbreak



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**

(14,754 County residents are 65+ years and 2,850 >5 years (26.8 % of County population))



**Impact on Property: Low**



**Impact on Economy: Medium**



**Adaptive Capacity: Medium for all municipalities**



**Climate Change: Medium for all municipalities**

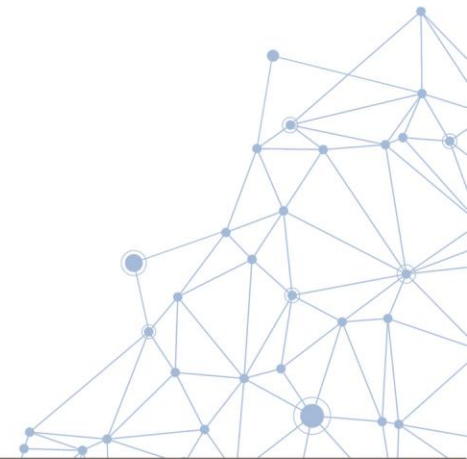




# Extreme Temperature

- Previous Events
  - Hot and cold events
- Exposure
  - Entire County is vulnerable
  - Increased vulnerability to populations at higher risk (65+ / <5 years old)
- Potential impacts:
  - Increased wildfire/brush fire risk
  - Impacts to agriculture/farms
  - Long-periods of warm temperatures can lead to drought conditions

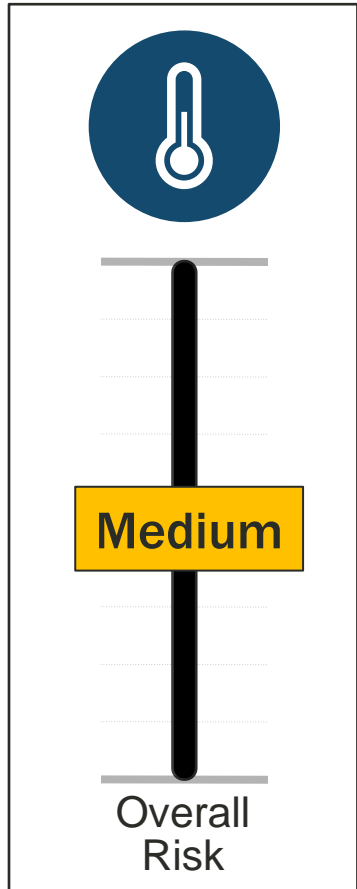
Warren County  
Ranking  
**MEDIUM**







# Countywide Preliminary Risk Ranking: Extreme Temps



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**

17,604 County residents are 65+ years old or >5 years (26.8% of County population)



**Impact on Property: Low**



**Impact on Economy: Medium**



**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**



# Infestation and Invasive Species

- Previous Events

- Beaver Dam Failure, March 2022
- Hemlock Woolly Adelgid, Lake George, 2017
- Emerald Ash Borer (EAB), Shroon River, 2022

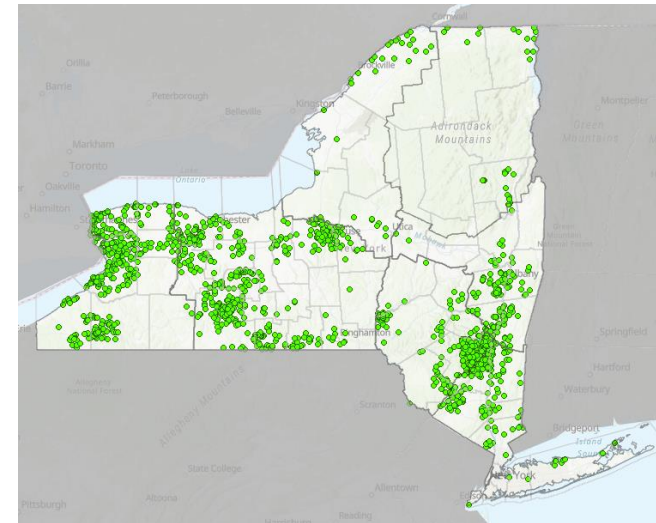
- Exposure

- Entire County is vulnerable

- Potential impacts:

- Soil destabilization
- Increased wildfire risk
- Impacts to agriculture/farms

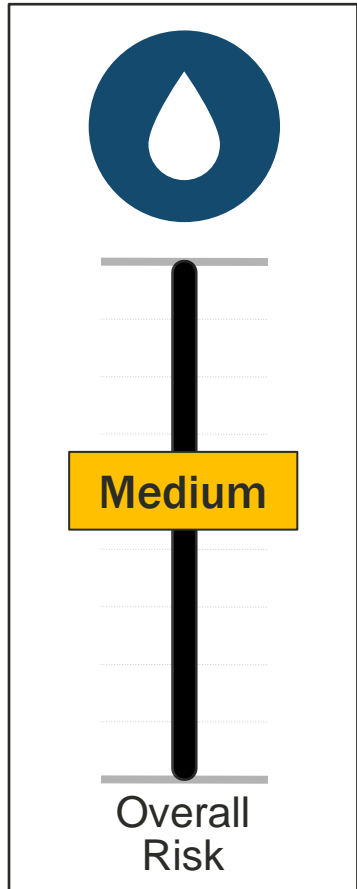
Warren County  
Ranking  
**MEDIUM**



EAB – Source: New York Invasive Species Network 2019



# Countywide Preliminary Risk Ranking: Infestation



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**



**Impact on Property: Medium**



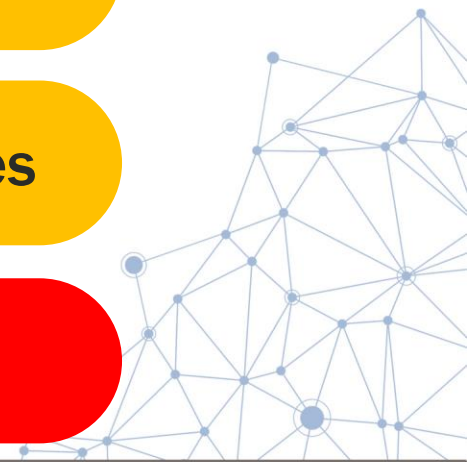
**Impact on Economy: Medium**

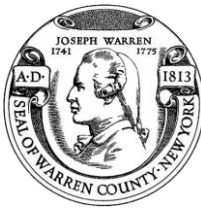


**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**





# Next Steps

- Update Risk Assessment
  - Prepare results to present to planning partners
  - Populate adjusted results municipal annexes
  - Planning Partnership Risk Assessment Meeting: February 15, 2023
  - Public Involvement Strategy – ongoing throughout the planning process
- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 15, 2023**



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!



**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #4 – AGENDA**  
**MEETING DATE/TIME: March 8, 2023 – 10:00 am**



- Welcome
- Progress Report
- Pending Action Items
- Public and Stakeholder Outreach
- Other Items
- Next Steps/ Questions/ Wrap Up





# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	March 8, 2023, 10:00 am

## Attendees:

Ann Marie Mason	Director, Warren County Office of Emergency Services (OES)
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Dan Barusch	Town/Village Lake George, Planner
Ashley Rivers	Warren County Office of Emergency Services
John Gibb	Contingency Management Consulting Group
Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Don Lehman	Warren County Public Information Officer
Sandra LeBarron	Director of Environmental Health and Safety, Finch Pruyn
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to provide a brief progress report and address pending action items.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation.</li> <li>The process continues to be on track for plan submittal to FEMA in August 2023.</li> <li>The majority of data to support the hazard mitigation plan (HMP) development has been received, with the receipt of the National Flood Insurance Program (NFIP) data pending processing by FEMA.</li> </ul>	
2	<b>Progress Report</b> <ul style="list-style-type: none"> <li>Risk Ranking worksheets due today. To date the communities that have submitted include: <ul style="list-style-type: none"> <li>Town of Lake George</li> <li>Village of Lake George <ul style="list-style-type: none"> <li>Town of Hague - In progress</li> <li>Town of Lake Luzerne - Requested clarification and noted worksheets in progress</li> <li>Town of Chester - Complete and awaiting supervisor review</li> <li>Town of Queensbury - In progress</li> </ul> </li> </ul> </li> </ul>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>• Assistance offered to the following communities via Mr. John Gibb:<ul style="list-style-type: none"><li>○ Town of Chester</li><li>○ Town of Glens Falls</li><li>○ Town of Horicon</li><li>○ Town of Johnsburg</li><li>○ Town of Queensbury.</li></ul></li></ul>	
3	<p><b>Pending Action Items</b></p> <ul style="list-style-type: none"><li>• High Hazard Dam Information. Warren County OEs confirmed that dam inundation areas will be deemed confidential information and available at the Office of Emergency Services on an as needed basis.</li><li>• Collection of localized flooding information. Warren County SWCD, OES, and GIS affirmed that the collection of localized flood impacts will be a collaborative mitigation action to be included in the hazard mitigation plan.</li><li>• Receipt of National Flood Insurance information. Warren County OES confirmed that FEMA has provided this information. This will be incorporated into the hazard mitigation plan to assist with the identification of mitigation strategies.</li><li>• Surveys targeting the public, neighboring counties, agencies, and businesses are live and will be used to provide additional input to the plan to support the identification of mitigation actions. Warren County PIO will perform another media blast to support a robust response to the surveys. To date sixty-nine responses have been received for the public survey. This represents an 87% completion rate with an average of 9 minutes to complete the survey. Respondents identified thirty areas vulnerable to hazard of concern.</li><li>• Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li><li>• The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>• Tetra Tech reminded steering committee members to access the project OneDrive site to review draft plan sections and to provide input, as necessary.</li></ul>	<p>Warren County Public Information Officer to</p> <p>Tetra Tech to analyze NFIP data for inclusion in the HMP process and plan.</p>
6	<p><b>Upcoming Meeting</b></p> <ul style="list-style-type: none"><li>• Mitigation Strategy Workshop – March 15, 2023 (<i>Optional for Steering Committee members not affiliated with a municipality.</i>)</li></ul>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



7	<b>Next Steps</b> <ul style="list-style-type: none"><li>• Populate adjusted results municipal annexes</li><li>• Planning Partnership Risk Assessment Meeting: February 15, 2023</li><li>• Continue to engage the public</li><li>• Work with the municipalities to develop mitigation strategy/actions</li><li>• Mitigation Strategy Workshop with FEMA and NYSDHSES – <b>March 15, 2023</b></li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 10:38 am.	





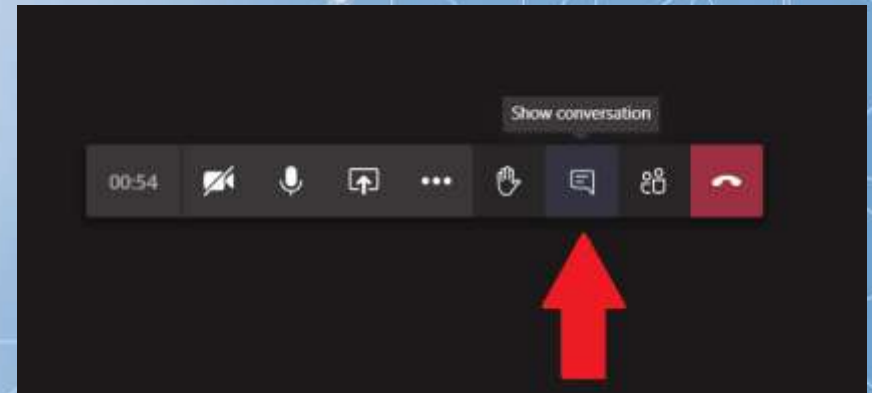
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Steering Committee #4 Meeting | March 8, 2023 | 10:00 – 11:00 AM

## **WELCOME!**

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*



# Agenda

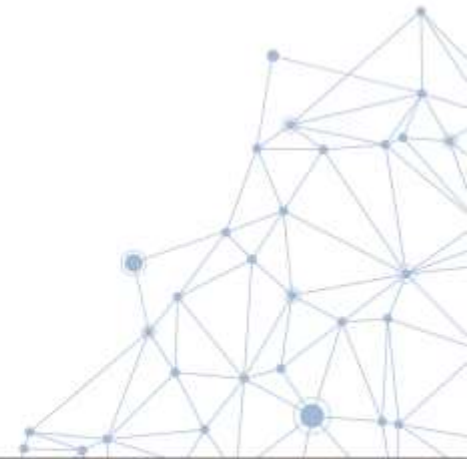
- Welcome
- Progress Report
- Pending Action Items
- Public and Stakeholder Outreach
- Other Items
- Next Steps/ Questions/ Wrap Up





# Project Schedule Review

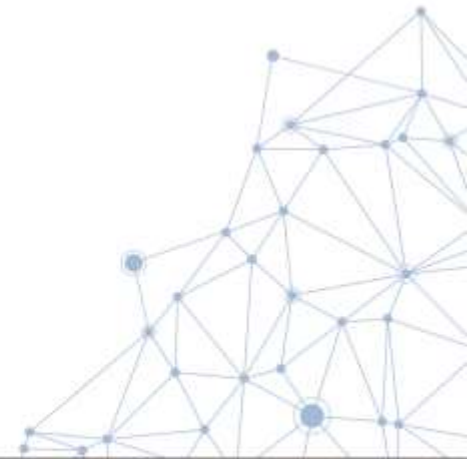
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ✓ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ☐ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ☐ | May 2023                | Review draft plan                                    |
| ☐ | July/August 2023        | Submit plan to NYSDHSES and FEMA                     |





# Progress Report

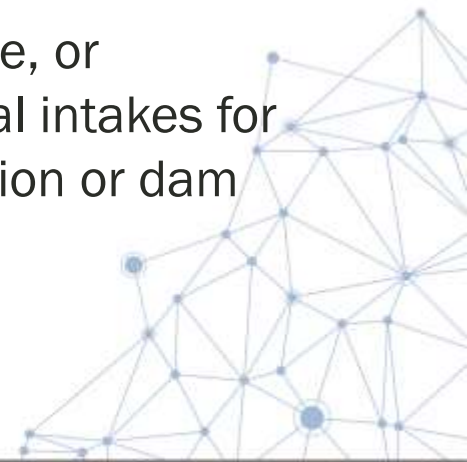
- Requested NFIP Data – *Data pending*
- Risk Ranking Worksheets due today.
  - To date these communities have submitted:
    - Town of Lake George
    - Village of Lake George
    - Town of Hague
  - In progress
    - Town of Lake Luzerne asked for clarification and noted worksheets in progress
    - Town of Chester, complete and awaiting supervisor review
    - Town of Queensbury, in progress
  - Assistance offered via Mr. John Gibb to:
    - Town of Chester
    - Town of Glens Falls
    - Town of Horicon
    - Town of Johnsbury
    - Town of Queensbury





# Pending Action Items

- Pending action items:
  - Emergency Services to review the level of detail provided to the public regarding dam inundation areas.
  - Emergency Services, County GIS and SWCD to consider options to collect and map localized flood areas.
  - NFIP information receipt
- Information Request
  - Input regarding history of damages for disease outbreak, extreme heat, dam failure, or infestation hazards is requested. Examples include data/metrics regarding hospital intakes for related illnesses, impacts on workforce, or localized information regarding infestation or dam failure.



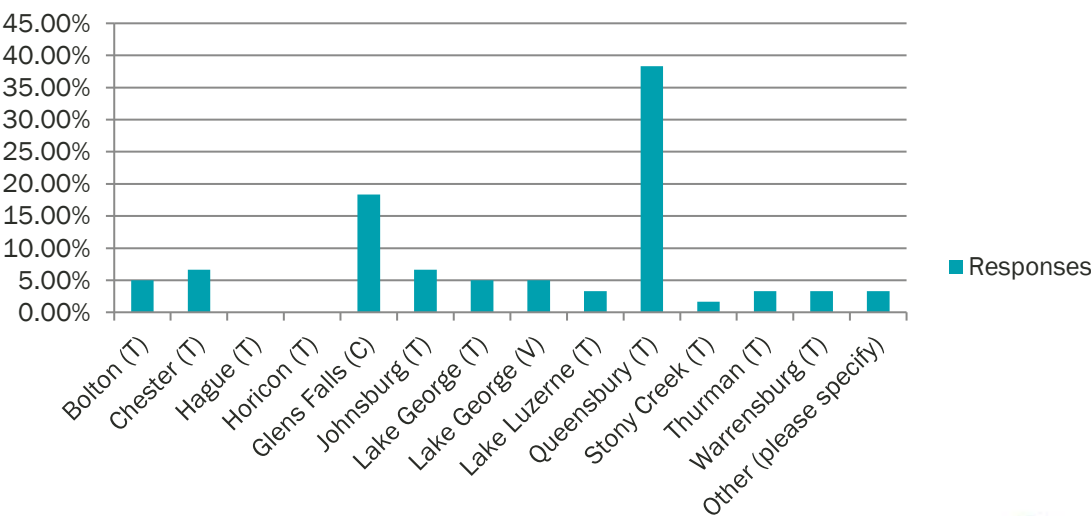




# Public Survey Results

- 69 Responses
- 87% Completion Rate
- 9 Minutes to Complete (Avg)
- ~30 identified vulnerable areas/items

Please indicate the municipality in which you live:



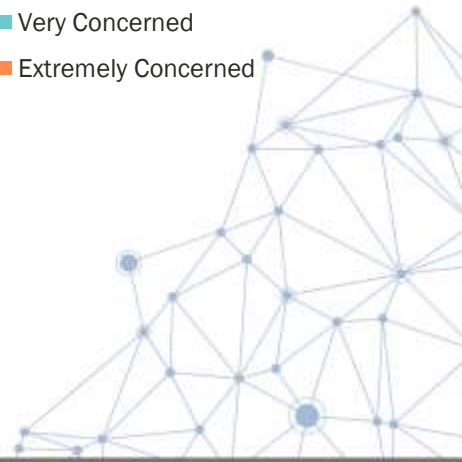
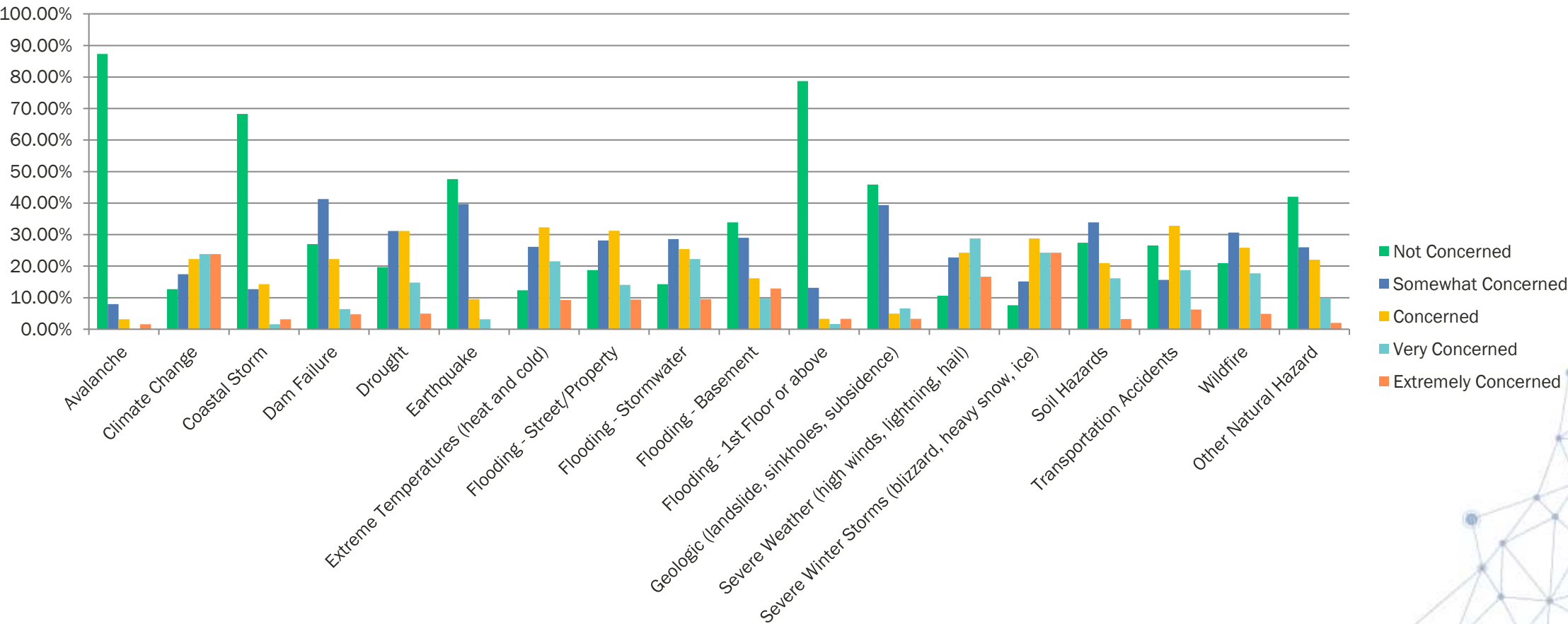
County streets Lake property Glens Falls Rd water due Road River  
flood drainage trees Hudson River None ice





# Public Survey Results - Hazard Concerns

How concerned are you about the following hazards in Warren County? Please check one for each hazard.





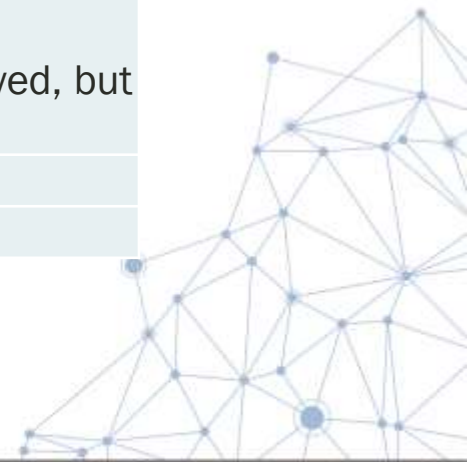
# Problem Areas

- Prone to power outages from trees on lines
- General back-up power, snow/ice blockage on highways
- Floodprone area on Meadowbrook Road @ Halfway Brook
- Low water levels in Kattskill Bay Lake George due to water management practices
- Apartment building for disabled and retired with all electric heat. No on demand generator. Located at 10 Manor Rd.
- 13th Lake Road, North River. The gabion walls are pushed out and look like they will give at any time. Also rocks fall in the middle of the road all the time.
- Flooding - 9N S/Hidden Valley Drive (Tubby Tubes-Lake Luzerne, NY 12846), due to a sewer drain that doesn't handle all the water, causing back up and ice/danger in winter. Trees down in my property from recent high winds (1275 Lake Avenue, Lake Luzerne, 12846)
- Water Tank control panel without power backup
- Ice jamming on Hudson River at 418 Bridge. Flooding on River Road
- Lake George sewage treatment plant has minimal security and is vulnerable to walk up attacks on infrastructure.
- Numerous roads and stream crossings could be subject to flood/storm damage.
- East End in Glens Falls is known for being a high water table area
- North Bolton Road at the foot of Church Hill Road is continually flooded due to the road having been raised several years ago. Raising the road removed all drainage possibilities and County officials refuse to do anything to correct the problem.
- Storm Drainage system that runs down the Lakeview Circle drive in the town of lake George and crosses Lake Shore Dr in the town of lake George and continues down to the lakefront between the Fairview Improvement association property and the lake view terrace property.
- Lack of municipal sewer and water
- Poor drainage for city streets (most streets in Glens Falls); raw sewage releases into the Hudson River (sometimes even if it only rains briefly); Poor tree maintenance causes downed branches in the high winds we now get for many months of the year.
- My road is collapsing into a stream. Many dead trees along the road. So called protected land around the watershed is not protected or monitored
- C/Glens Falls flood prone streets. Warren St, Mohican St, CR 19 T/Chester. SR 418 bridge & River Rd, Barton Mines RD Johnsburg
- Loon Lake Dam, Rt 8/9, Chestertown
- ZERO fragrance-free emergency shelters! Acute respiratory response / reactive airways when exposed for perfumes, scented products (ubiquitous), etc. ALSO: FEMA Flood Map makes ZERO sense! Unable to determine if my address is - or is not - in a flood plain: Fredella Avenue, Glens Falls, NY.
- Hudson River Basin Lake Luzerne to Corinth
- We have experienced power outages for as lengthy as 5 days. being on a deep well, the outage not only effects our lights and heat, but water as well.



# Problem Areas

- Queensbury - Halfway Brook Area/flooding  
Warrensburg - Schroon River Area/flooding  
Chester & Horicon - Schroon River Area/flooding
- Meadowbrook rd, Qby - Flooding
- Lakeview Circle Drive Town of Lake George
- GFWWTP releasing sewage into Hudson after every heavy rainstorm.  
Inadequate storm drainage on streets
- Still ZERO fragrance-free emergency shelters - I would not be able to survive in an emergency shelter due to respiratory distress when exposed to fragranced / scented products (body, laundry, cleaning, etc.)
- Power cybersecurity concern
- Flooding of the Hudson River in the spring occasionally that affects the State rt. 28 between North Creek and North River, and includes part of the town North Creek at the train station where Teddy Roosevelt learned McKinley had died from his wound, and he was now President. The historic Train station has been preserved, but flooding of the Hudson in the spring has caused concern a number of years in the past ten.
- Thurman bridge
- Downtown Warrensburg from Schroon River flooding





# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

# Hours

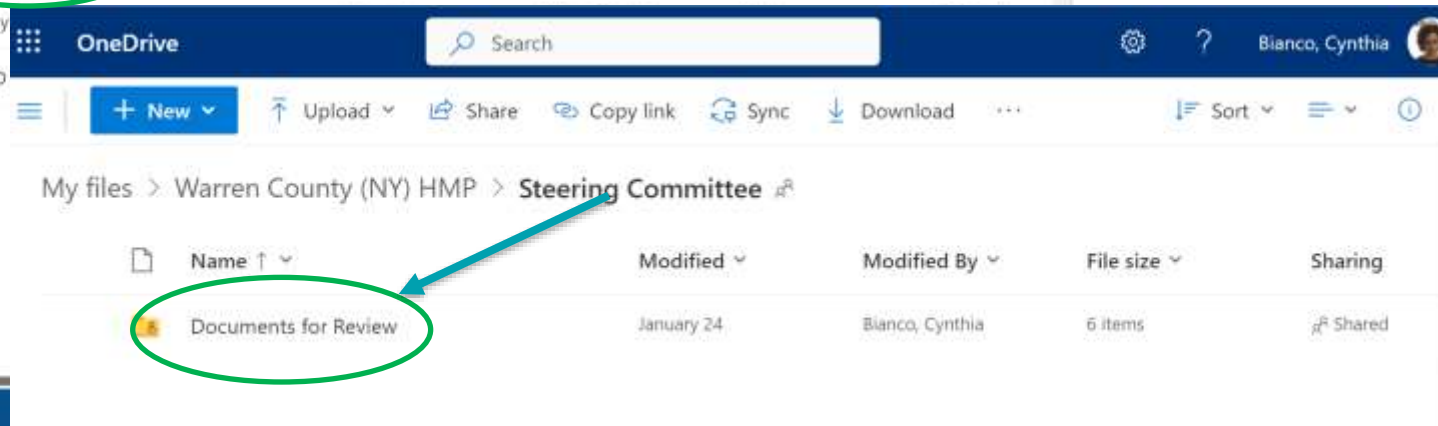
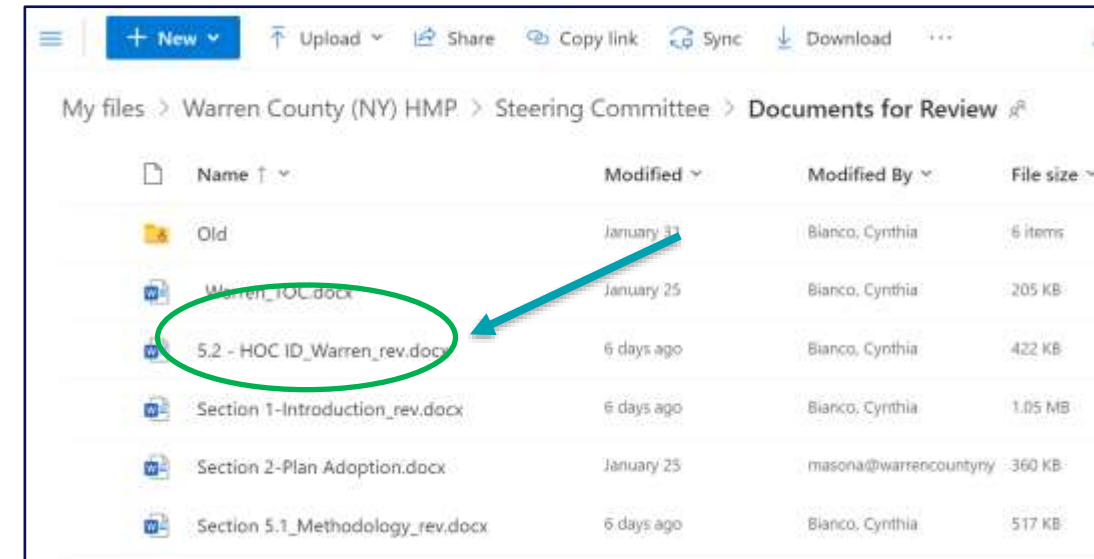
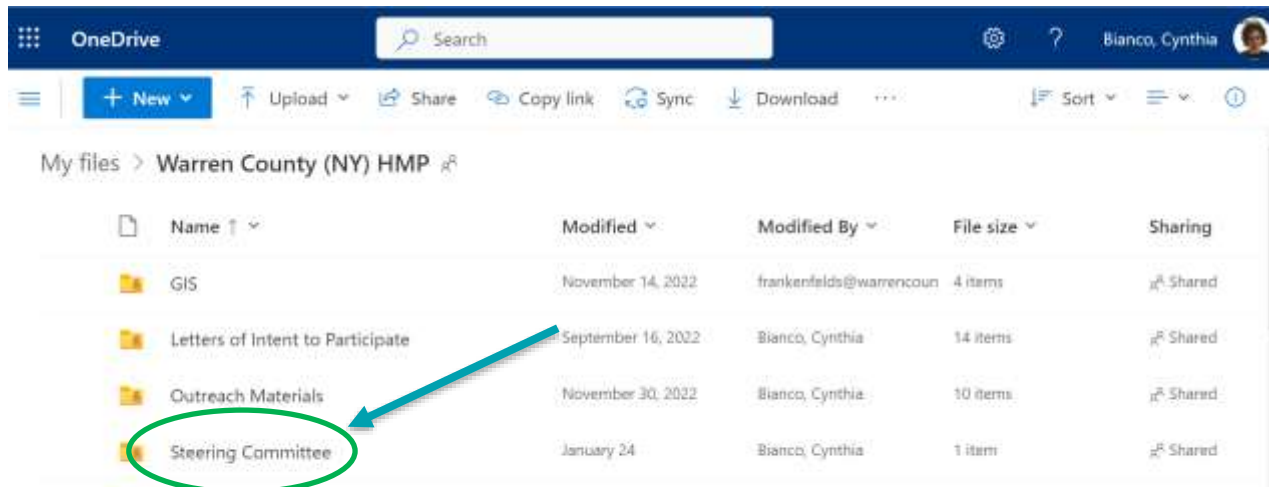






# Document Review on Sharepoint

- Access for document review
- Review in “desktop app” in track changes





# Next Steps

- Update Risk Assessment
  - Populate adjusted results municipal annexes to support project identification
  - Public Involvement Strategy – ongoing throughout the planning process
- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 15, 2023**



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

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Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)

The background of the slide is a scenic photograph of a large, multi-story resort building with a white facade and a red roof, situated on a lush green island in the middle of a large blue lake. A white ferry boat with a red stripe is moving across the water in the foreground. The sky is blue with scattered white clouds.

Thank  
You!



# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Mitigation Strategy Workshop
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	March 15, 2023, 10:00 am

## Attendees:

Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ann Marie Mason	Director, Warren County Emergency Services
Jessica Leerkes	Engineer, Town of Chester
Dan Barusch	Town/Village Lake George, Planner
Keith Lanfear	Village of Lake George
Craig Leggett	Supervisor, Town of Chester
Tammie DeLorenzo	Assistant to the County Administrator, Warren County
Michael Geraci	Supervisor, Town of Horicon
Khristopher Kassay	Town of Lake Luzerne
Karen Putney	Town of Lake Luzerne, Zoning Officer
James Hull	Code Enforcement Officer, Town of Warrensburg
Ernie Dunkley	Safety Officer, Town of Johnsbury
Danae Tucker	Town of Johnsbury
John Strough	Supervisor, Town of Queensbury
Laura Moore	Planner, Town of Queensbury
Mindy Conway	Town Clerk, Town of Chester
Betsy Parmerter	NYSDHSES
Elizabeth O'Reilly	NYSDHSES
Edna Frasier	Supervisor, Town of Hague
Cathy Clark	Town of Hague
Sheila Mender	City of Glens Falls
Don Lehman	Warren County Public Information
Kevin Clapp	NYSDHSES
John Gibb	CMCG
Roland Paperman	NYSDHSES
Laura Stebbins	Glens Falls
John Wilkerson	NYSDHSES
Paul Hoole	FEMA
Ethan Gaddy	Warren County
Chris Huch	Tetra Tech, Inc.
Cynthia Addonizio-Bianco	Tetra Tech, Inc.





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Agenda Summary: Purpose to provide guidance on identifying mitigation actions and developing a mitigation strategy		
Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"><li>Meeting started at 10:05 am</li><li></li></ul>	
2	<b>In-Kind Services Tracking/Outreach</b> <ul style="list-style-type: none"><li>Mr. Lieberum reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li><li>Warren County reminded municipalities to submit documentation of in-kind hours to support the obligations related to the planning grant funding.</li><li>The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li></ul>	Action: Submit documentation of hours spent supporting the mitigation planning process, including hours spent to provide data, review documents, provide updates to communities.
3	<b>Developing Mitigation Strategies</b> <ul style="list-style-type: none"><li>Tetra Tech reviewed risk reduction strategies as included in the presentation (attached).</li><li>Regarding mitigation project details, in addition to the mitigation project matrix, Tetra Tech recommends at least two action worksheets for grant eligible projects. If a community has repetitive or severe repetitive loss properties, these should be addressed with an action worksheet.</li><li>Tetra Tech distributed brainstorming worksheets to kick-start the development of problem statements. In addition, they provided all communities with pre-populated Action Worksheets for some initial projects.</li></ul>	
4	<b>Development of Actions and Action Worksheets.</b> Tetra Tech reviewed the following guidelines for the content of Action Worksheets: <ul style="list-style-type: none"><li>Projects should have a strong connection to the risk assessment</li><li>Projects should be specific in time, place, and location</li><li>Projects should be diverse in nature</li><li>Communities have been provided a Mitigation Catalog</li><li>Project descriptions to include consideration of priorities, integration with existing programs, timelines, benefits, and costs•</li></ul>	
5	<b>Next Steps</b>	Schedule a support meeting with Tetra Tech to complete your community annex.



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>• To enable those who could not participate, a video of the presentation is available online for review here: <a href="#">Warren County Mitigation Workshop Video</a></li><li>• Continue to engage the public</li><li>• Develop mitigation strategy/actions: <b>March 2023</b></li><li>• Email <a href="mailto:chris.huch@ttratech.com">chris.huch@ttratech.com</a> to schedule a support meeting with Tetra Tech to complete your community annex.</li></ul>	
6	<b>Conclusion</b> - The meeting concluded at 11:14 am.	



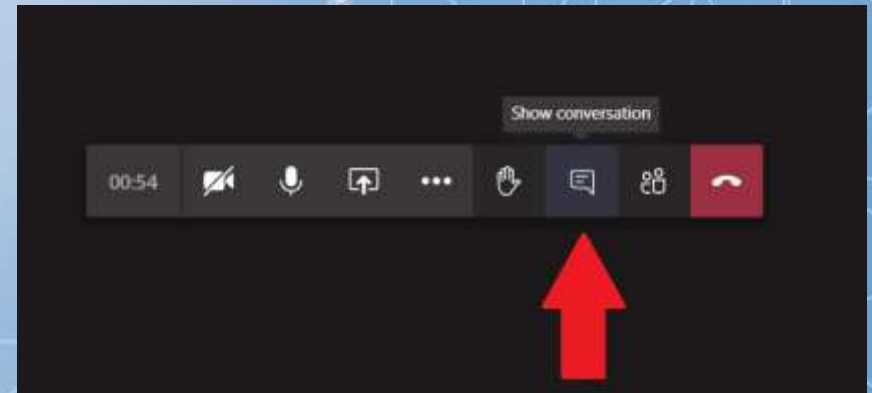
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Mitigation Workshop | March 15, 2023 | 10:00 – 11:30 AM

## **WELCOME!**

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*





# Agenda

1. Introductions
2. In-Kind Tracking Reminder
3. Hazard Mitigation Refresher
4. Project Status
5. Developing Mitigation Strategies – NYS DHSES, FEMA
6. Updating Previous Actions
7. Using Mitigation Development Worksheets to Select Your Actions
8. Action Worksheets
9. Next Steps





# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetratech.com](mailto:cynthia.bianco@tetratech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

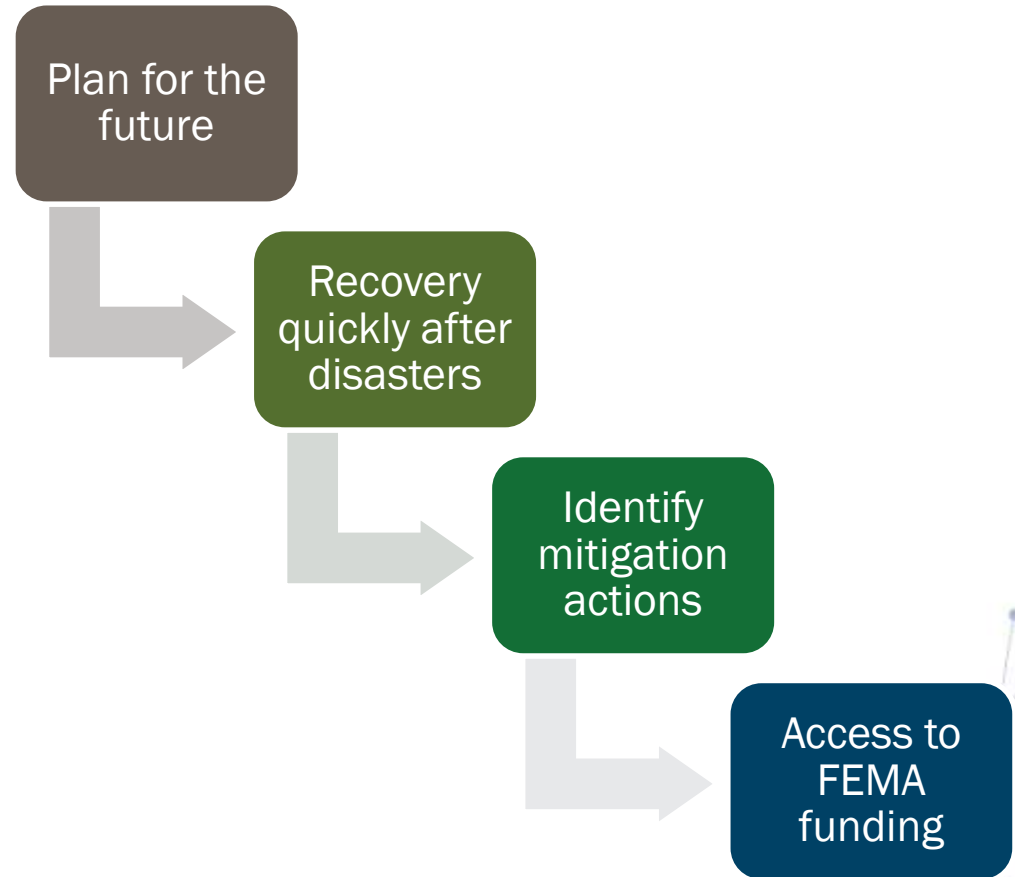
Date

# Hours





# Hazard Mitigation – What is it?





# Why are we spending valuable time on this?

## Hazard Mitigation Works!

- For every \$1 spent on hazard mitigation, saves the U.S. \$6 in future disaster costs!
- More than just money – it could prevent 600 deaths and 1 million non-fatal injuries!

**More Mitigation Measures,  
More Savings**



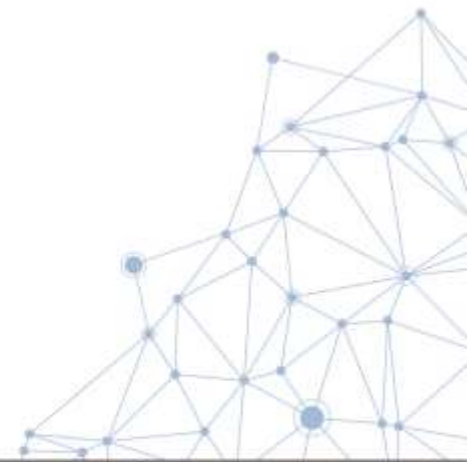
**One dollar invested in mitigation =  
six dollars U.S. saves in future costs**





# Our Schedule

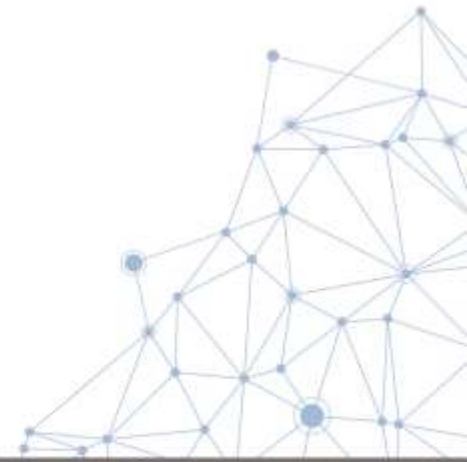
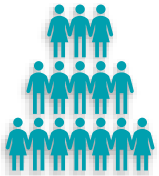
Task	Date
Data Collection	Complete
Update Hazard Profiles	Complete
Risk Assessment	Complete
Risk Results Presentation	Complete
Mitigation Strategy Workshop	March 15, 2023– TODAY!
Review Draft Plan	May 2023
Public Review of Plan	June/July
Submit to NYSDHSES	July/August
Submit to FEMA	September/October 2023





# Public Outreach and Engagement

- Check out the HMP website - <https://www.warrencountynewyorkhmp.com/>
- Post links on social media and department/agency websites
- Citizen, stakeholder and neighboring county surveys distributed, as of 3/10/23:
  - Citizen Survey: 71 responses
  - Stakeholder Survey: 9 responses
  - Neighboring County Survey: 1 response
  - *All responses relating to your jurisdiction are included in your updated Annex*



# Mitigation Strategy







# 2023 HMP Hazards of Concern

- Disease Outbreak
- Earthquake
- Extreme Temperatures
- Flood
- Dam Failure
- Infestation and Invasive Species
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire

*A community must include at least one mitigation action for each hazard that is deemed to have a significant impact on the community.*

*For hazards with minimal or no perceived impact to a community, a statement must be included in the annex to indicate why the community has not address any hazards with a mitigation action.*

# Risk Reduction Examples

## To Reduce Risk:

- *Manipulate the Hazard:*
  - Structural flood control
- *Reduce/Eliminate Exposure:*
  - Property acquisition
- *Reduce Vulnerability:*
  - Retrofit existing structures
- *Increase Capability:*
  - Preparation, technical assistance, planning, enforcement





# Using your Mitigation Strategy to Reduce Risk

- What is a *Mitigation Strategy*?
  - A group of projects or actions to reduce the impacts of the hazards of concern on your community
- Terms to describe the *Mitigation Strategy* include:
  - *Mitigation Action Plan or Action Plan*
  - *Mitigation Projects or Initiatives or Actions*

Your Mitigation Strategy table is included in your annex of the plan.  
**TWO of your actions must be detailed on Action Worksheets**



# FEMA Mitigation Action Types



**Plans and regulations** include government authorities, policies, or codes that encourage risk reduction, such as building codes and state planning regulations. This may also include planning studies.



**Structure and infrastructure projects** involve modifying existing structures and infrastructure or constructing new structures to reduce the impact of hazards.



**Natural systems protection projects** minimize losses while also preserving or restoring the function of natural systems.

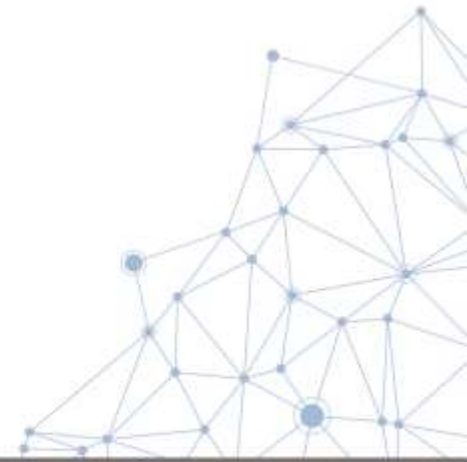


**Education and awareness programs** include long-term, sustained programs to inform and educate citizens and stakeholders about hazards and mitigation options. This category could also include training.



# NYS Requirements for Mitigation Strategy Update

- Need to develop at least 2 Action Worksheets
- If jurisdiction has a regulatory floodplain then one worksheet must address flooding
  - [if the jurisdiction has Repetitive and Severe Repetitive Loss Properties - it is good practice to include action with details (street or neighborhood names)]
- Critical facilities in the 100-year floodplain – must be protected to the 500-year flood event
  - If already protected, we must note how
  - If not protected, a mitigation action must be developed
- Plan for Climate Change and propose actions to address

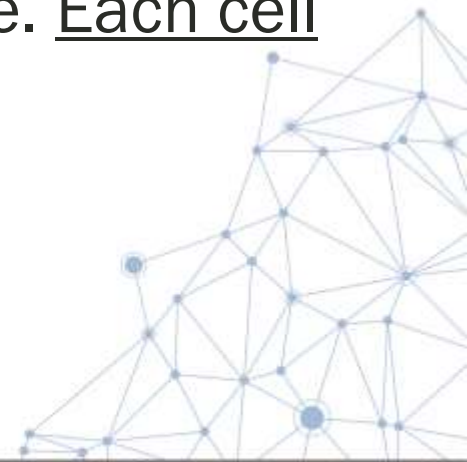






# NYS Requirements for Mitigation Strategy Update

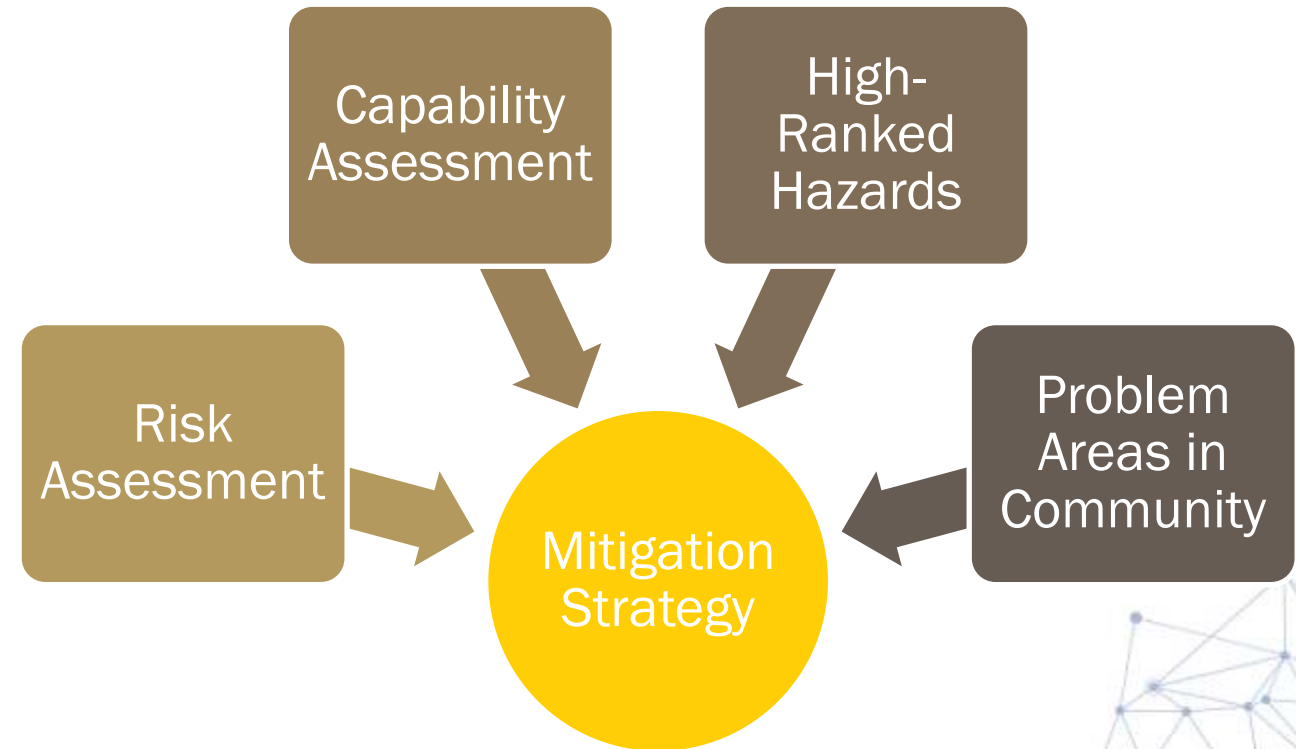
- Proposed actions MUST have specific information identified including:
  - Project lead
  - Estimated cost
  - Timeline
  - Whether the action involves a critical facility
- All required items are identified within the proposed action table. Each cell of the table MUST be filled out!





# Connecting to the Mitigation Strategy

- Need a clear connection between vulnerability and proposed mitigation actions.
- Capability assessment provides insight into challenges/opportunities for the mitigation strategy as well.
- Provides the factual basis for activities proposed in the mitigation strategy.



# The roadmap to a strong mitigation strategy



Hazards of Concern:  
High Ranked Hazards

Problem Areas:  
Mitigation  
Development  
Worksheets

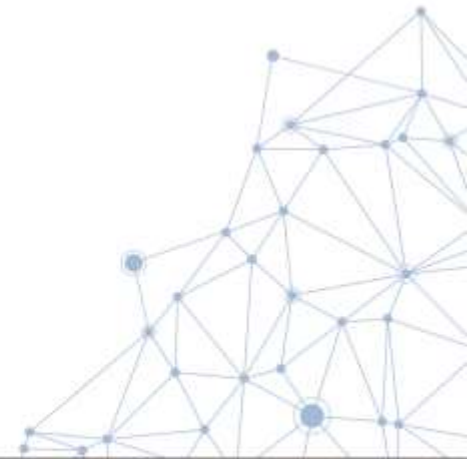
Mitigation  
Initiatives  
Table

Action  
Worksheets



# What are we focusing on for our mitigation strategy?

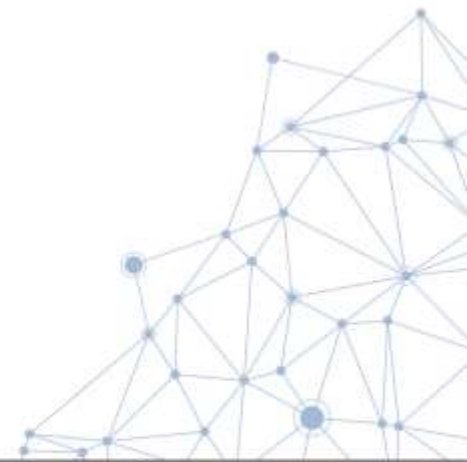
- Stronger connection between the risk assessment and mitigation strategy
  - At least one action is needed to address each hazard of concern
- More specific actions
  - Specific projects, in specific locations, in a specific timeframe
- Diverse actions
  - Include a variety in the types of actions





# Update the Mitigation Strategy

- Review our Goals and Objectives
- Start with Problems (many identified on your Worksheets)
  - Areas that have been impacted by hazard events
  - Recurring issues
  - Critical/Lifeline facilities in the floodplain
  - RL/SRL properties need mitigating
  - Evacuation routes and sheltering needs



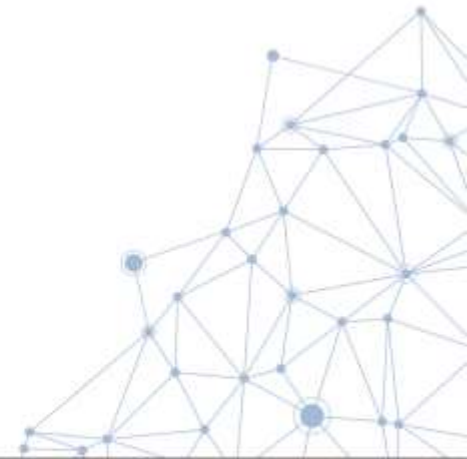




# Update the Mitigation Strategy

- Identify New Mitigation Actions/Projects
- Modify 'Carry-Over' projects from the previous HMP -more specific or address different aspect of original problem

## Quality Over Quantity!!

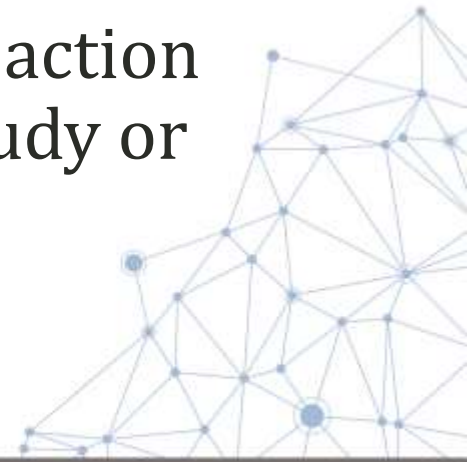


# Making Previous Actions More Specific



# Why we must update our actions...

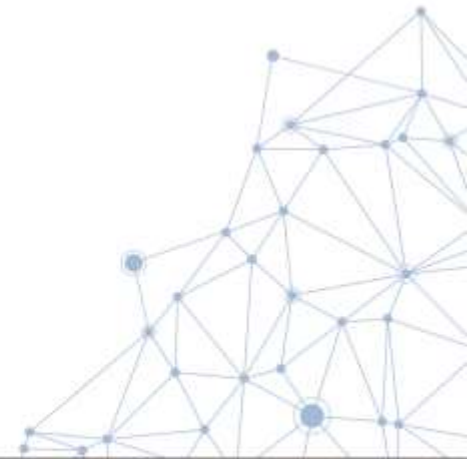
- Actions in the previous plan often were general and did not include detailed information.
- Detailed information is needed to support FEMA grant applications for funding support.
- Focus on updating previous actions to include the necessary level of detailed information.
- If detailed information is not available, note a phase in the action that will gather this information such as an engineering study or feasibility assessment.
- Use the same level of detail for new actions as well!





## Example: Previous problem and action

- **Problem:** Critical facilities require backup power.
- **Solution:** Acquire backup power for critical facilities.





## Example: Improved problem and action

- **Problem:** Town Hall lacks a backup power source. The Town Hall houses the Emergency Operations Center and also can serve as a backup shelter. Lack of power results in a breakdown of continuity of operations and prevents the Town Hall from providing critical services during a hazard event.
- **Solution:** The Town Engineer will work with the Office of Emergency Management to research and purchase the appropriately sized backup generator for the Town Hall. The Town DPW will install the backup generator and necessary electrical components and will be responsible for testing and upkeep of the generator after installation.





# Example: EVEN MORE Improved problem and action


- **Problem:** Town Hall lacks a backup power source. The Town Hall houses the Emergency Operations Center and also can serve as a backup shelter **for approximately 100 people**. Lack of power results in a breakdown of continuity of operations and prevents the Town Hall from providing critical services during a hazard event.
- **Solution:** The Town Engineer will work with the Office of Emergency Management to research and purchase **a 75 kW** generator for the Town Hall. The Town DPW will install the backup generator **on the roof of the Town Hall** and necessary electrical components and will be responsible for testing and upkeep of the generator after installation.

# Mitigation Development Worksheet





# Use Your Worksheet to Identify Mitigation Actions



Hazard Mitigation Plan 2023 Update  
Warren County, NY  
Hazard Ranking Review

Note: \*Adaptive capacity was assumed Moderate for all hazards.

**Problem Statement Development**

Utilizing the results gathered to date (i.e., risk assessment, capability assessment, identified problem areas, 2017 mitigation strategy), please review the identified problems and potential solutions and add anything that may be missing to inform your mitigation strategy development.

**Risk Assessment**

What is your hazard concern of greatest concern? Refer to your hazard ranking results on page 1 (ex: stormwater flooding, falling trees, power loss, etc.). Do you have any projects in mind to address that hazard?

Problem / High-Ranked Hazards	Solution

**Critical Facilities - Backup Power**


Please list critical facilities that require backup power. If you have specifics (size of the generator, potential cost, etc.), please provide that information as well.

Problem	Solution


**Culverts - Undersized/In Need of Upgrade**

Please indicate the location of any culverts or stormwater components in your community that are undersized or are damaged from past flood events. Then note if you would like to add a project to address any of these locations.

Problem	Solution

TETRA TECH

Warren County, NY Hazard Mitigation Action Plan | 2023 Update  
Page 3 of 5



Hazard Mitigation Plan 2023 Update  
Warren County, NY  
Hazard Ranking Review

**Flood Protection – Elevation or Buyout**

Please identify any **repetitive loss areas**, homes, or neighborhoods that would benefit from elevation or buyout to prevent future flood damages. Then identify potential projects to provide flood protection (elevation, buyout, etc.)

Problem	Solution

**Infrastructure Protection**

Please identify roads and other infrastructure that needs protection from flooding, storms, etc. Provide any projects where you would like to include protection measures (elevate roadway, harden infrastructure, etc.)

Problem	Solution

**Outreach Projects**


Please identify gaps in public awareness regarding hazards and identify any outreach projects that you would like to include in your mitigation strategy.

Problem	Solution

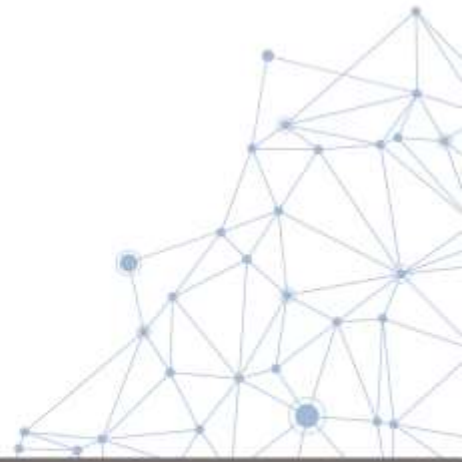
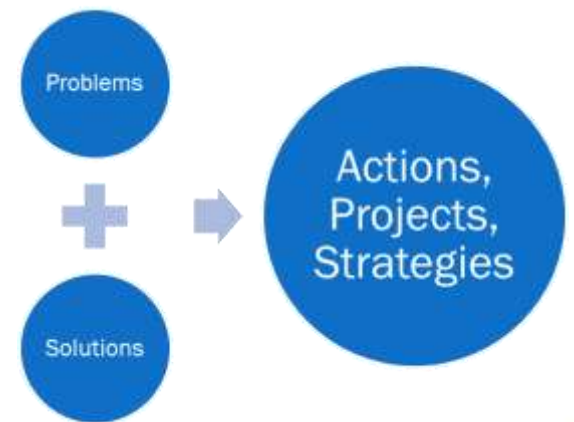
**Other Projects**

Please identify other projects that you have in mind after reviewing your problem statements, past actions, risk assessment results, and the mitigation catalog.

Problem	Solution

TETRA TECH

Warren County, NY Hazard Mitigation Action Plan | 2023 Update  
Page 4 of 5

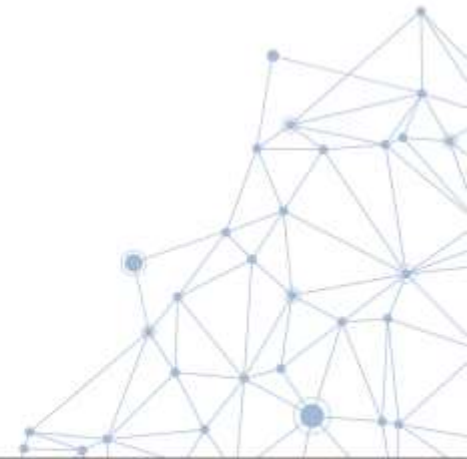




# How do you fill in the Worksheet?

The worksheet asks a series of questions to help you think about vulnerabilities within your community.

- Critical Facilities/Lifelines – backup power
- Critical Facilities/Lifelines – flood protection
- Culverts – undersized/in need of upgrades
- Flood Protection – elevations/buyouts; think about the RL/SRL properties – if you have RL/SRLs you need an action related to this
- Infrastructure Protection – what needs protection from flooding, storms, etc.?
- Anything else?

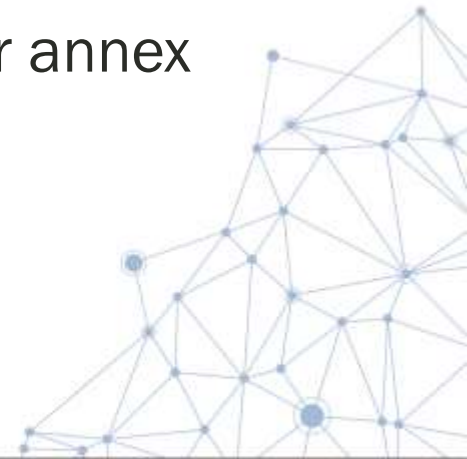




# How do you fill in the Worksheet?

- Review the pre-populated information on your worksheet
  - Information from worksheets submitted to date
  - Input from public/stakeholder surveys
  - Risk assessment results
- Determine the problems that you will pursue solutions for
- Add as much detail as possible to the problems and develop detailed solutions
- Return worksheet to your Tetra Tech planner for discussion during your annex development meeting

**Schedule your meeting with your Tetra Tech planner ASAP!**





# Proposed Action Table





# Proposed Action Table

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	EHP Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
2020-Muni-001				Problem:										
				Solution:										
2020-Muni-002				Problem:										
				Solution:										
2020-Muni-003				Problem:										
				Solution:										
2020-Muni-004				Problem:										
				Solution:										
2020-Muni-005				Problem:										
				Solution:										

# Action Worksheets





# Action Worksheets

- Each jurisdiction must develop at least 2 Action Worksheets
- Should also develop additional Action Worksheets for projects you plan to apply for FEMA funding support for within the next 5 years
- Not every action requires an Action Worksheet to be developed but the same sort of information about those actions are still needed in the Proposed Actions table of the annex
- If jurisdiction has a regulatory floodplain then one worksheet must address flooding
- Critical facilities in the 100-year floodplain – must be protected to the 500-year flood event
- Plan for Climate Change and propose actions to address



# Action Worksheet

- Description of the Problem
  - What is the problem?
  - What is the risk?
  - Where is the problem occurring?
  - Who is the problem impacting?
  - Have there been past damages?
  - How frequently does the problem occur?

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

## ➤ Description of the Solution

- How do you propose to solve or mitigate the problem?
- What are the design specifications?
  - Height and length of a floodwall
  - kW for backup generators
  - Number of structures to be bought out or elevated
  - Etc.
- Who is responsible for what aspects of the project?



Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

# Action Worksheet

## ➤ Level of Protection

- What level event is the project being designed to protect to?
  - For flood protection: 100-year flood, 500-year flood
  - For stormwater improvements: 5 year, 10 year rain events
- If not a specific level, include brief description of what protections are
  - For generators: Prevents power loss

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

# Action Worksheet

- Estimated cost
- What will the project cost?
- If project includes phases or components, what will each phase or component cost?
  - New generator: \$25K, elevation platform for generator: \$1K



Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Estimated Benefits
- Provide a description of the estimated benefits, either quantitative and/or qualitative
- Identify the benefits that implementation of this project will provide. If dollar amounts are known, include them. If dollar amounts are unknown or are unquantifiable, describe the losses that will be avoided.

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Prioritization
- High, Medium, or Low
- Use the second page of Action Worksheet to evaluate each action and assist in the determination of priority (to be discussed shortly)

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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	<input type="checkbox"/> No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes	<input type="checkbox"/> No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





# Action Worksheet

- Responsible Organization
- Identify the lead organization/department/individual for the project
- Identify any supporting organizations/departments/ individuals for the project.

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Estimated Time Required for Project Implementation
- Provide the estimated time required to complete the project from start to finish.

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Alternatives
- Three alternatives are needed for each action worksheet.
  - 1<sup>st</sup> alternative can be no action
  - 2<sup>nd</sup> and 3<sup>rd</sup> alternatives – include estimate cost and a description of the pros/cons of the alternatives

Action Worksheet			
<b>Project Name:</b>			
<b>Project Number:</b>			
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>			
<b>Description of the Problem:</b>			
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>			
<b>Is this project related to a Critical Facility?</b>		Yes <input type="checkbox"/>	No <input type="checkbox"/>
<b>Is the critical facility located in the 1% annual chance flood area?</b>		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>		<b>Estimated Benefits (losses avoided):</b>	
<b>Useful Life:</b>		<b>Goals Met:</b>	
<b>Estimated Cost:</b>		<b>Mitigation Action Type:</b>	
Plan for Implementation			
<b>Prioritization:</b>		<b>Desired Timeframe for Implementation:</b>	
<b>Estimated Time Required for Project Implementation:</b>		<b>Potential Funding Sources:</b>	
<b>Responsible Organization:</b>		<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	
Three Alternatives Considered (including No Action)			
	Action	Estimated Cost	Evaluation
<b>Alternatives:</b>	No Action	\$0	Current problem continues
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			





# Evaluation of Actions

- Consider the benefits and costs
- Consider the implementation timeline
- Consider the areas/problems of greatest need
- Consider the funding sources
- High/Medium/Low priority

**1 = highlight effective or feasible**

**0 = neutral**

**-1 = ineffective or not feasible**

Evaluation and Prioritization		
Project Name:		
Project Number:		
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety		
Property Protection		
Cost-Effectiveness		
Technical		
Political		
Legal		
Fiscal		
Environmental		
Social		
Administrative		
Multi-Hazard		
Timeline		
Agency Champion		
Other Community Objectives		
Total		
Priority (High/Med/Low)		



# Important Actions

- **Municipalities with high hazard potential dams with a condition rating of unsafe or unsound** should include an action to address the deficiencies, using the High Hazard Potential Dam (HHPD) grant program for funding.
- **Municipalities with repetitive loss properties** need to include an action to address repetitive loss (elevation and/or acquisition). Tetra Tech has emailed the communities that have repetitive loss properties.

## High Hazard Potential Dam (HHPD) Worksheet

A job aid for Municipalities Preparing /Amending Mitigation Plans<sup>1</sup>

Complete a Separate Worksheet for each<sup>2</sup> state regulated HHPD in your community.

Name of the Mitigation Plan:	Point of Contact for this Worksheet Name:
	Email:
Municipality where dam is located:	Name of Dam:
Name of the Dam Owner:	NYS Dam ID #:

Dams are critical infrastructure that can be impacted by natural hazards and if they fail to operate as designed, there could be cascading consequences downstream in the inundation area and potentially to a larger area if the use of the pooled reservoir is lost or diminished.

This worksheet, when completed, will:

1. Describe the process followed for assessing the risks to /from the identified high hazard potential dam located in the municipality.
2. Describe the risks to the dam from natural hazards, and from the dam should it fail to operate as designed.
3. Describe the mitigation plan goal that covers addressing the vulnerabilities to/from HHPDs.
4. Describe one or more planned mitigation actions / projects related to a high hazard potential dam, be it with a HHPD grant or other FEMA hazard mitigation grant programs.

This worksheet is designed to be placed in the annex of the municipality with jurisdiction over the area where the dam is located. Use of this worksheet will ensure no HHPD requirement has been overlooked for the dam being assessed. Completing worksheets for each of the HHPDs in the municipality will allow FEMA to quickly confirm the municipality has a hazard mitigation plan that included all dam risks.

It is highly recommended that when the dam owner is another municipality, the worksheet should also be added to the other municipality's mitigation plan. Doing so will ensure the other municipality meets Element B1-a and C4-b for approval of their mitigation plan under the Stafford Act requirements.

General or generic discussion of high hazard dams and their risks is welcomed content in a mitigation plan. However, it is not a substitute meeting HHPD requirements 1 thru 4, as covered by this worksheet.

<sup>1</sup> Source: Local Mitigation Planning Policy Guide (pages 34-35 and 57), Released April 19, 2022

<sup>2</sup> This change, to include all state regulated HHPDs, per the Policy Guide went into effect with the release of the release of the Rehabilitation of High Hazard Potential Dams Grant Program Fiscal Year 2022 Notice of Funding Opportunity.





# Schedule

- Complete Mitigation Development Worksheet and Schedule Meeting with your Tetra Tech Planner **Before March 31<sup>st</sup>**
- Work with Tetra Tech Planner to Complete Actions and Annex following meeting
- Draft Plan to Steering Committee by middle of May
- Final draft plan to NYS DHSES and FEMA – August/September 2023



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!



# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	June 7, 2023, 10:00 am

## Attendees:

Ann Marie Mason	Director, Warren County Office of Emergency Services (OES)
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Laura Moore	Town of Queensbury, Land Use Planner
Kevin Hajos	Warren County Department of Public Works
Ashley Rivers	Warren County Office of Emergency Services
John Gibb	Contingency Management Consulting Group
Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Sandra LeBarron	Director of Environmental Health and Safety, Finch Pruyn
Elizabeth O'Reilly	NYSDHSES

**Agenda Summary:** Purpose to provide a brief progress report and address pending action items. To re-convene the Steering Committee meeting to review the plan status and agenda items below.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:00 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items as summarized in the attached PowerPoint presentation.</li> <li>The Steering Committee is requested to access the draft plan documents on the project OneDrive to review and provide any comments or feedback to be incorporated into the plan before posting for public review.</li> </ul>	
2	<b>Progress Report</b> <ul style="list-style-type: none"> <li>The process continues to be on track for plan submittal to FEMA in August 2023.</li> <li>Upcoming milestones <ul style="list-style-type: none"> <li>Steering Committee Review of Draft Plan (through July 12<sup>th</sup>)</li> <li>Draft plan posted for public comment (August 1<sup>st</sup> – August 31<sup>st</sup>)</li> <li>Plan submittal to NYSDHSES/FEMA (September)</li> </ul> </li> </ul>	
3	<b>Draft Plan Review</b> (refer to attached presentation for details) <ul style="list-style-type: none"> <li>Survey Results</li> <li>Section-by-section content review</li> <li>Maintenance procedure review</li> </ul>	





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>Steering Committee Review guidelines</li></ul>	
4	<b>Discussion</b> <ul style="list-style-type: none"><li>Mr. Hajos reviewed and discussed mitigation actions included in the draft county annex to support finalization of the mitigation strategy. This input will be included in the draft annex.</li></ul>	
5	<b>Pending Action Items</b> <ul style="list-style-type: none"><li>Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li><li>The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>Tetra Tech reminded steering committee members to access the project OneDrive site to review draft plan sections and to provide input, as necessary.</li></ul>	<p>Steering Committee members to access plan on project OneDrive and provide comments as needed by July 12<sup>th</sup>.</p> <p>Tt to send OneDrive access links and review guidance to committee members.</p>
6	<b>Next Steps</b> <ul style="list-style-type: none"><li>Steering Committee members to access plan on project OneDrive and provide comments as needed by July 12<sup>th</sup>.</li><li>Tt to update draft plan to include committee feedback and post plan for public review in August.</li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 11:07 am.	





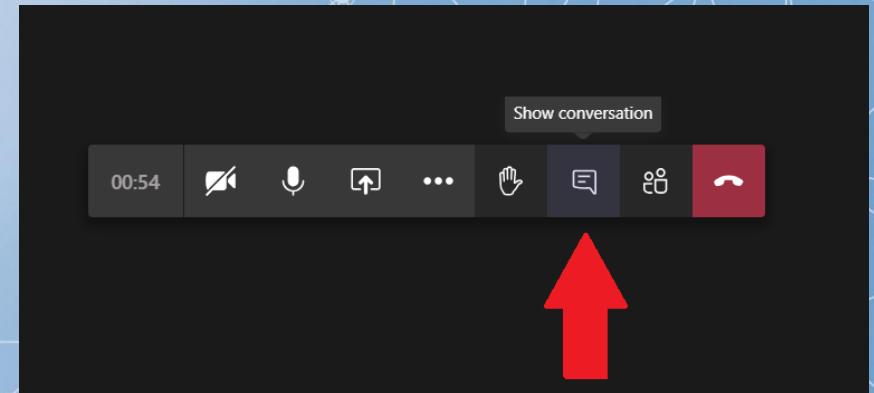
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Steering Committee #5 Meeting | June 7, 2023 | 10:00 – 11:00 AM  
Draft Plan Review

## ***WELCOME!***

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

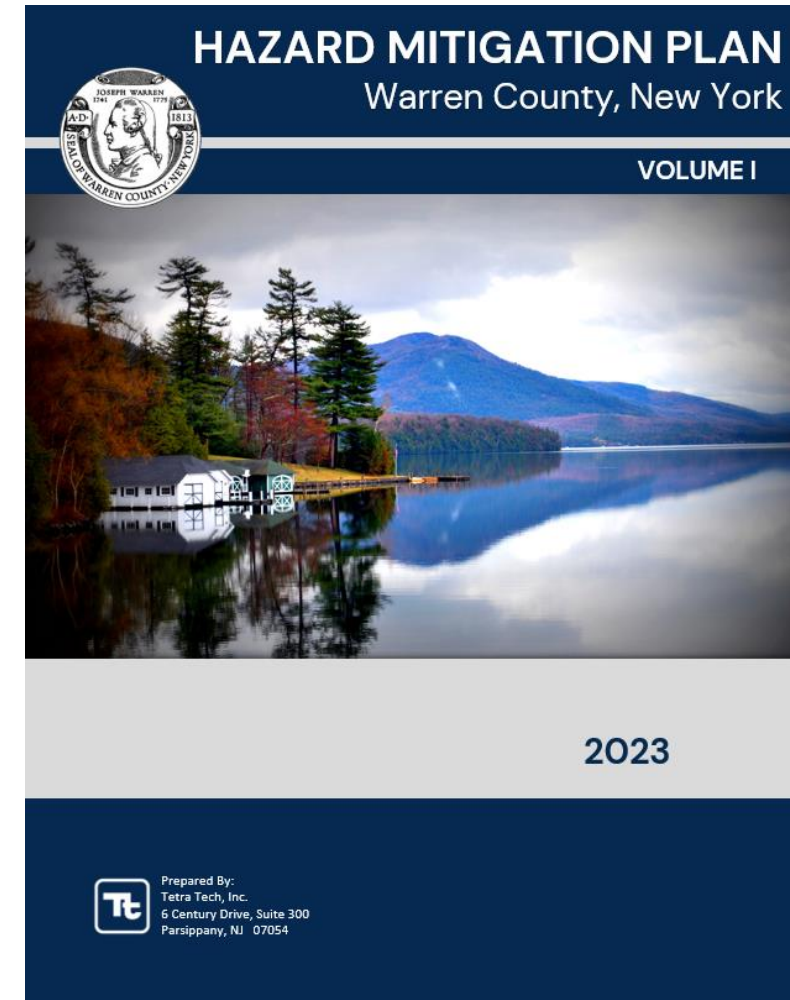
*This will assist in our attendance documentation.*





# Agenda

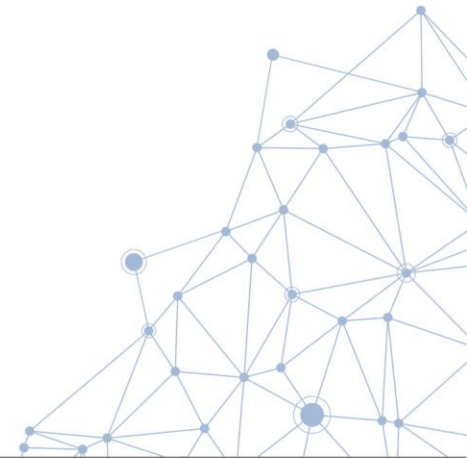
1. Introductions
2. Project Schedule
3. Draft Plan Review
  - What is New?
  - Survey Results
  - Section-by-Section Content Overview
  - Review Guidelines
  - Finalizing the Plan
  - County Mitigation Actions Discussion
4. Next Steps
5. Q&A

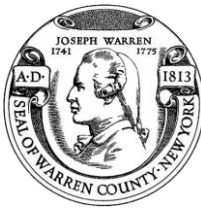




# Project Schedule Review

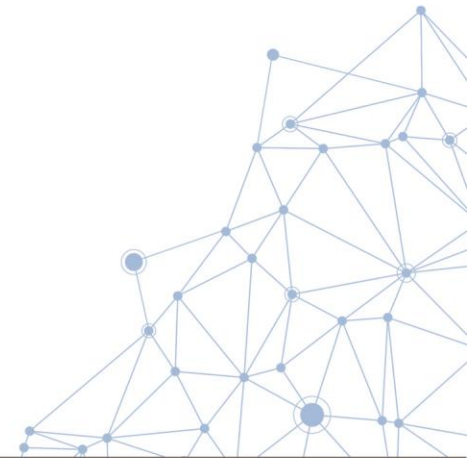
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ✓ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ✓ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ☐ | June/July 2023          | Review draft plan                                    |
| ☐ | September 2023          | Submit plan to NYSDHSES and FEMA                     |

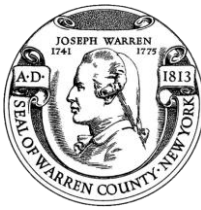




# What is new in the 2023 Update?

- Review of hazard impacts since last plan.
- Updated critical facility inventory, including Community Lifelines
- Updated annexes to align with new FEMA and NYSDHSES Guidance
- Supplementary information appendix to support policy and planning
- Climate Change impacts and Adaptive Capacity to reduce vulnerability used in hazard ranking





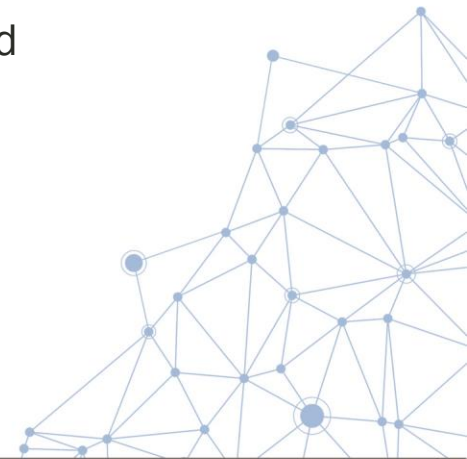
# Neighboring County Survey Results

- **Saratoga (2 responses)**

- Indicated mutual agreements to deploy staff for emergency evacuations/disaster response
- Warren County was instrumental in helping us to develop many of our plans. They are a partner that could be asked for assistance in a variety of disasters.
- Emergency Managers work together to respond to incidents and may work together to mitigate against incidents along shared vulnerabilities.
- Shared hazards of concern: Flooding along the Hudson - which serves as the boundary between a good portion our counties. Additionally, various incidents along the Northway. Also, large scale incidents (e.g .brush fire) along our rural border; All dams/flooding along common county borders.
- Information shared with Saratoga communities by the hazard mitigation plan, intercommunity communication often by the highway department leadership.
- Multi-county evacuations would require collaboration. Historically we have collaborated on shared hazards/events

- **No response**

- Essex accessed survey (No data-will contact to discuss)
- Hamilton County
- Washington County

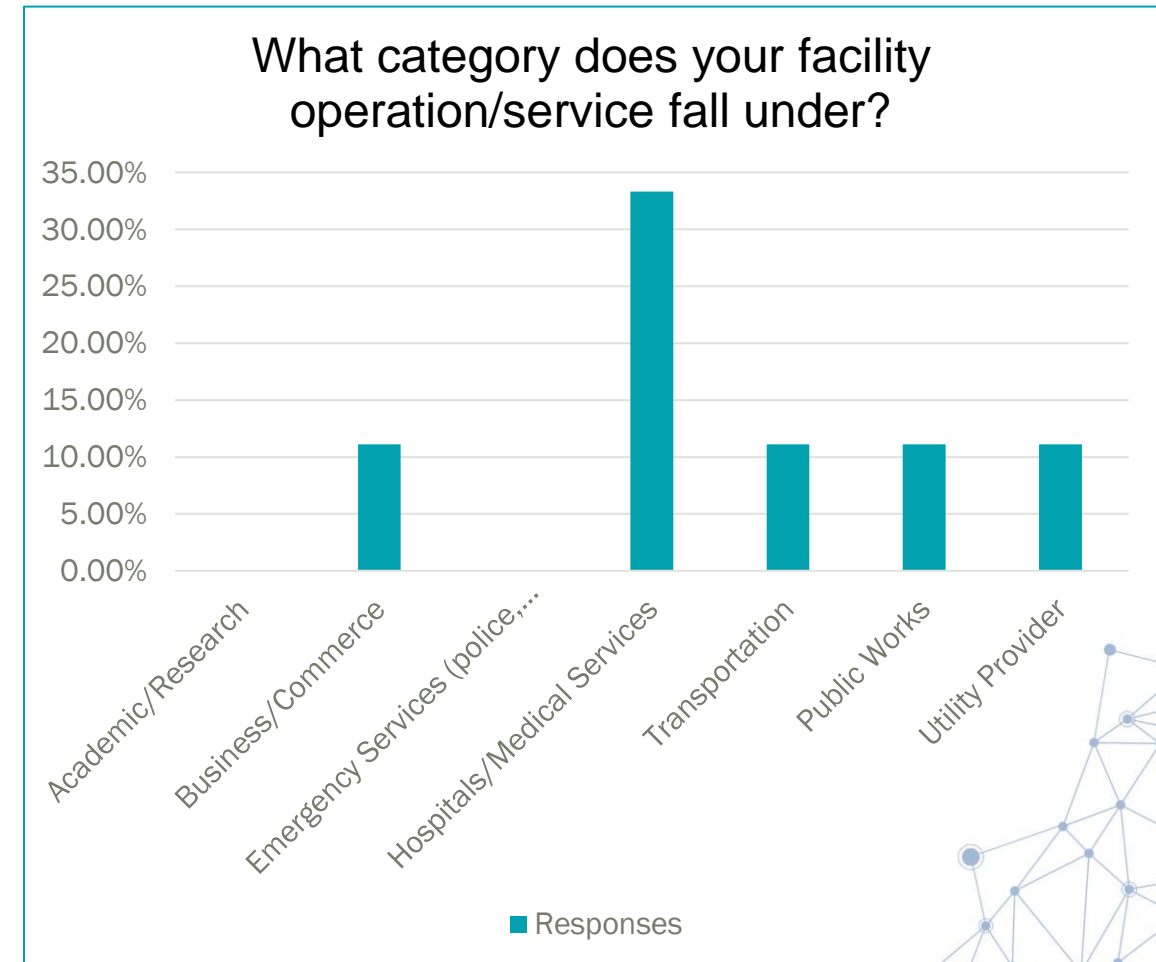






# Agency Survey Results

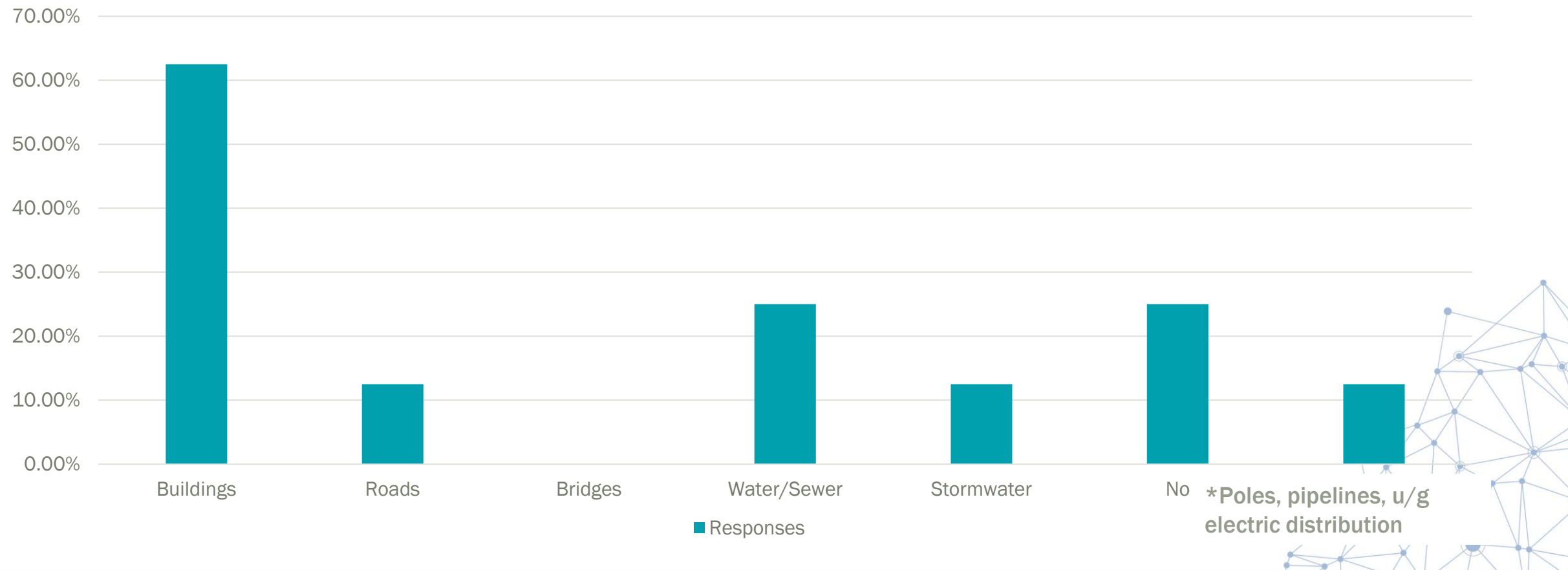
- 9 Respondents
  - National Grid
  - Warren County Health Services
  - SAIL
  - NYS Department of Health Glens Falls District Office
  - Lake George Regional Chamber of Commerce & CVB
  - Southern Adirondack Independent Living
  - Glens Falls Hospital
  - Greater Glens Falls Transit
  - Glens Falls Common Council





# Agency Survey Results

Does your organization maintain or manage any of the following within your designated service area?

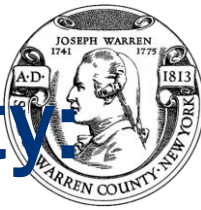


# Agency Survey - Hazard Vulnerability:



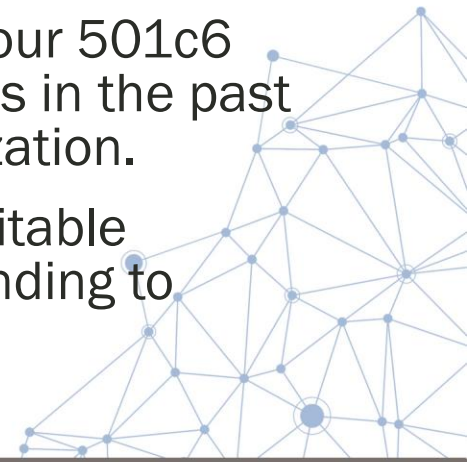
- Electric Substations and gas regulating stations. As we've all seen in the news with the recent vandalism with electric utility equipment, it is high on the priority list for our security teams.
- Salt mitigation to protect the lake. We currently use sand on the backside of our building/parking area and salt/sand mixture on the front. No other hazards as of this writing.
- Reliance on pre-identified municipal buildings and locations that are owned and maintained by City/Town municipalities for many of our activities.
- Our hub is the County Municipal Center. Vulnerabilities include fire, severe weather impacting the facility, loss of internet and utilities caused by weather or man-made factors"
- Road hazards - downed trees, winter driving conditions
- Industry along the river and watershed

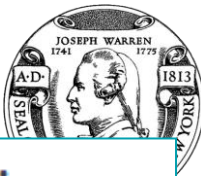




# Agency Survey - Programs to Reduce Vulnerability

- Tree Trimming program - each of our circuits are trimmed on 5-year cycles, that means every 5 years ""Main St in Queensbury"" will be inspected for danger trees and trimmed by one of our tree contractors.
- **"Computapole"** program. This is a program that has us inspect and get eyes on every piece of National Grid electric infrastructure throughout our territory. We identify potential hazards like rotting poles, broken or unbonded guy wires, blown lightening arrestors, or broken cross arms. Once they are reported, the issues are then sent to the field workers for repairs. This is also done in 5-year cycles for each of our circuits.
- We have a similar program for our gas distribution system regarding our Leak Prone Pipe program where we are replacing old cast iron mains and services with plastic. We have a gas corrosion team that inspects our pipelines to make sure they are still in spec.
- We were able to take advantage of the second round of PPP funding because of our 501c6 corporate status that helped us through the pandemic financially. Other strategies in the past have been to cut programs and not people to stay financially stable as an organization.
- Upgrading work from home opportunities if the facility is unusable, ensuring a suitable secondary location is available for staff that have to be in the office, providing funding to ensure IT and other equipment necessary to maintain operations is provided
- Sewage treatment plant power project





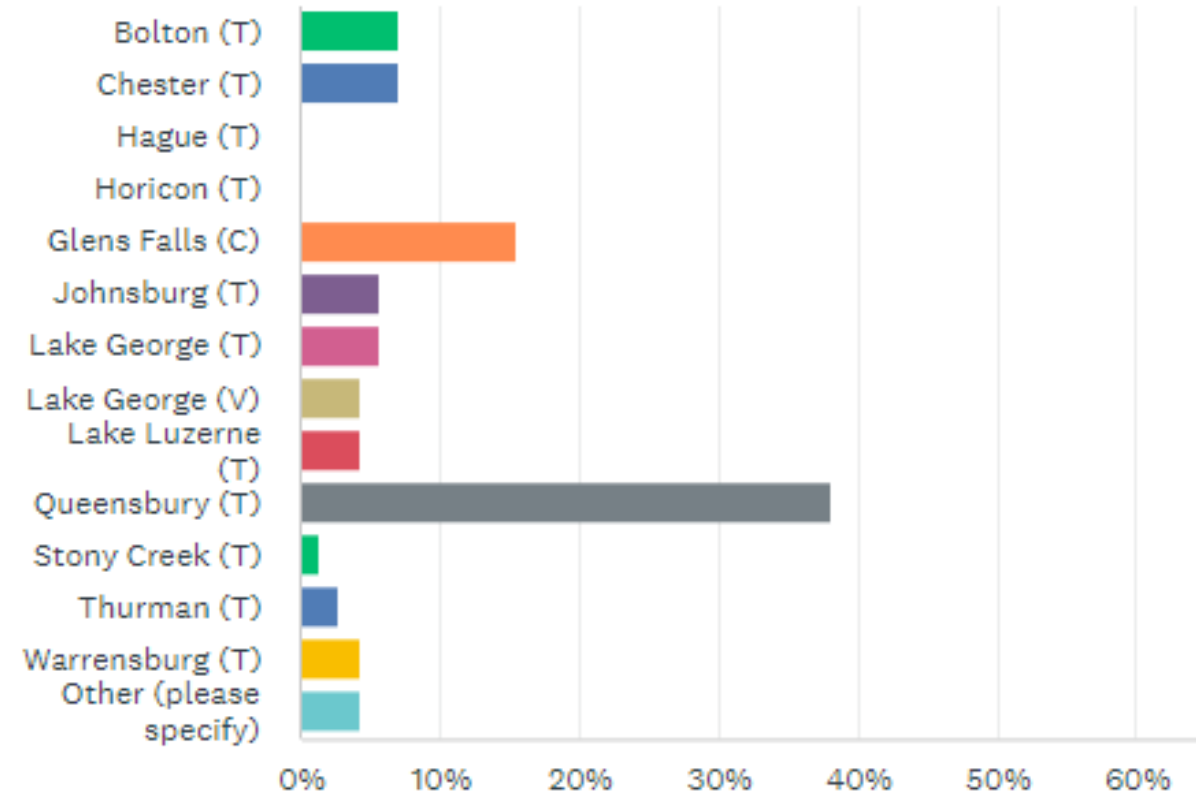
# Public Survey Results

- 81 Responses
- 64% Completion Rate
- 8 Minutes to Complete (Avg)
- ~39 identified vulnerable areas/items

County streets Lake property Glens Falls Rd water due Road River  
flood drainage trees Hudson River None ice

Please indicate the municipality in which you live:

Answered: 71 Skipped: 10

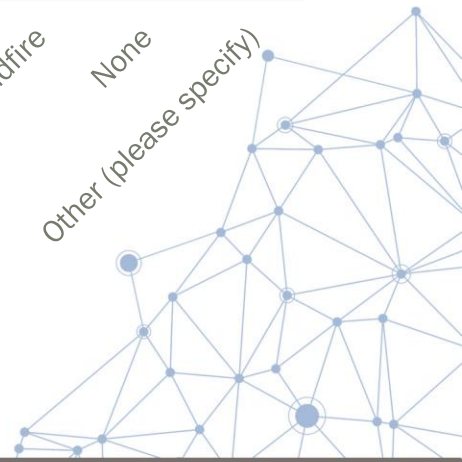
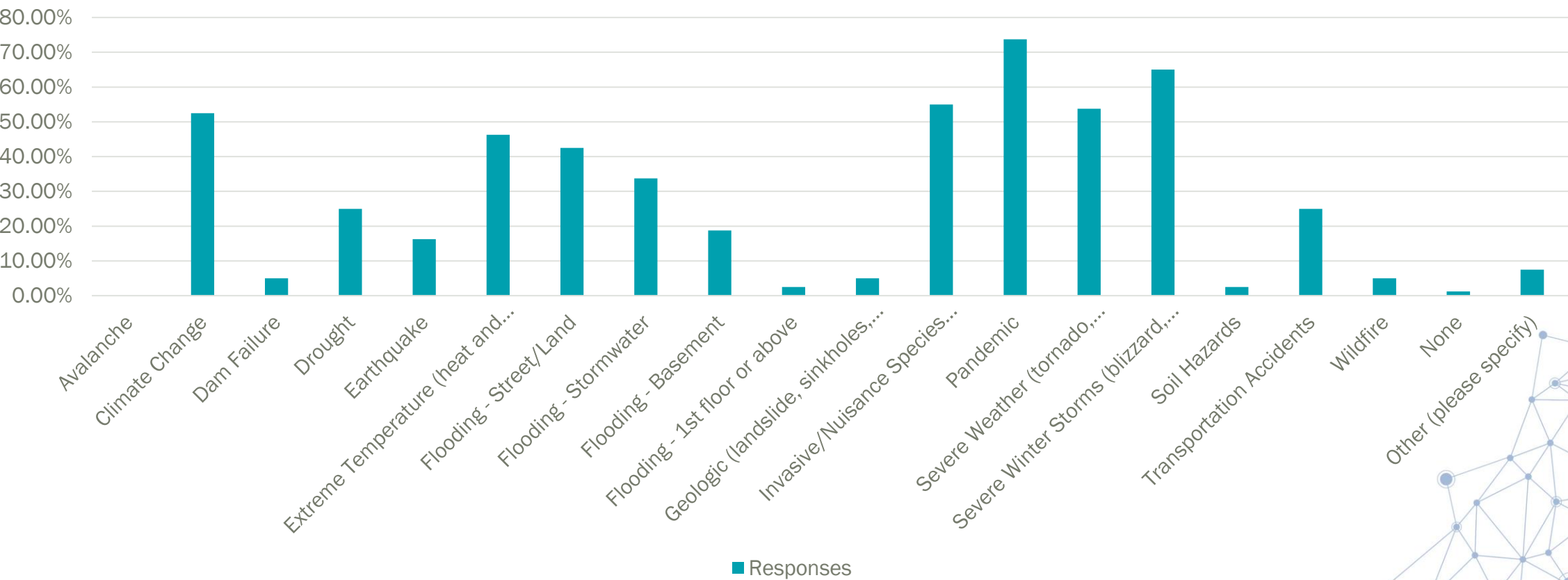






# Public Survey Results: Hazards Experienced

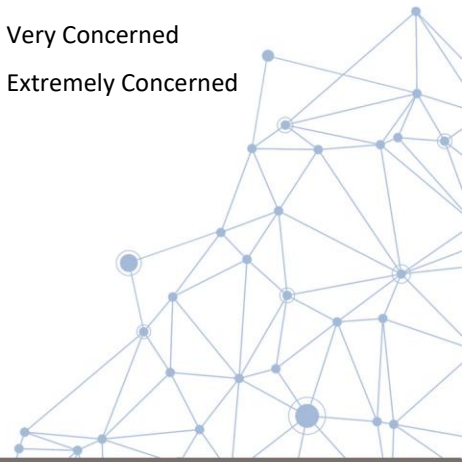
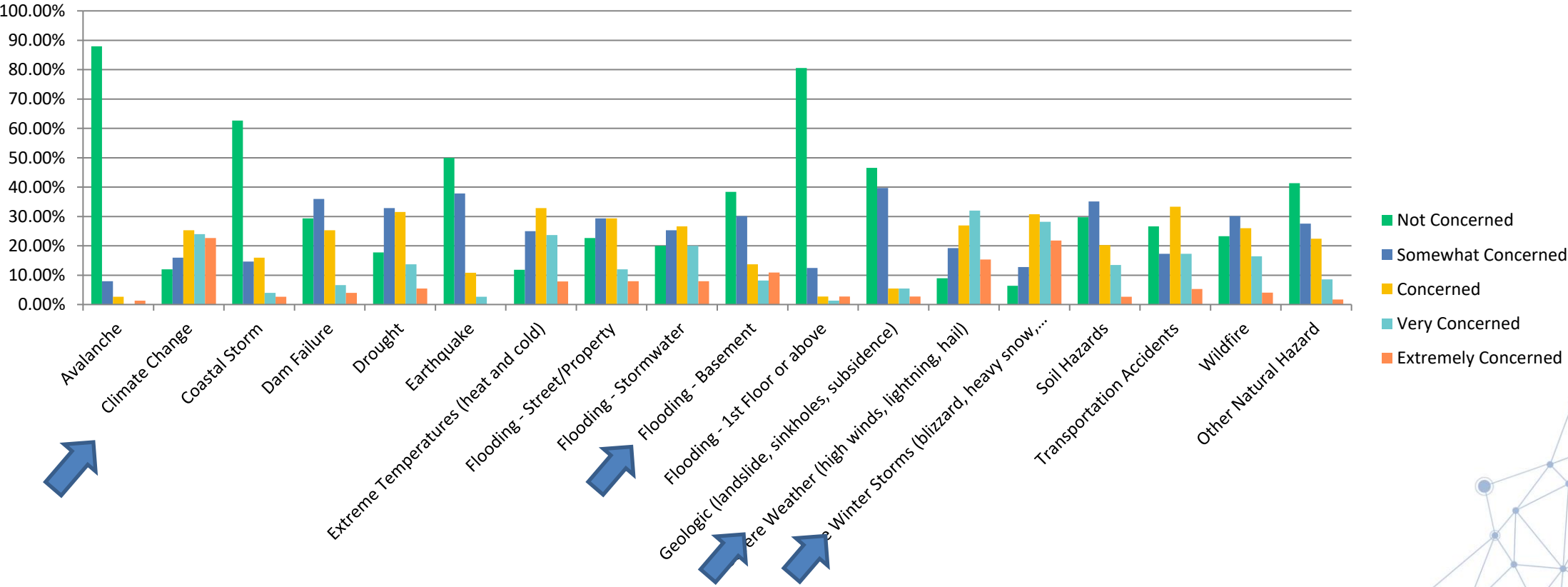
In the past 10 years, which of the following hazard events have you experienced in Warren County?





# Public Survey Results - Hazard Concerns

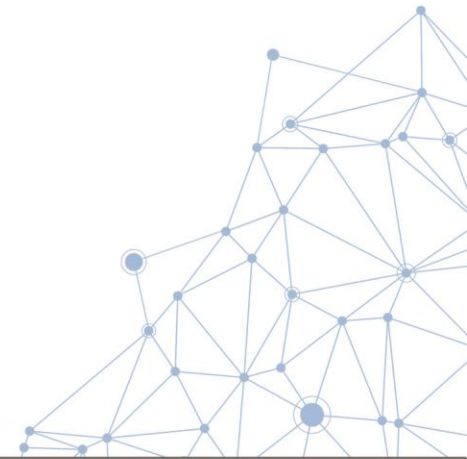
How concerned are you about the following hazards in Warren County? Please check one for each hazard.

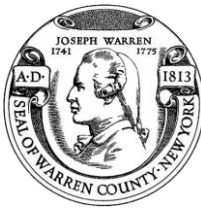




# Problem Areas

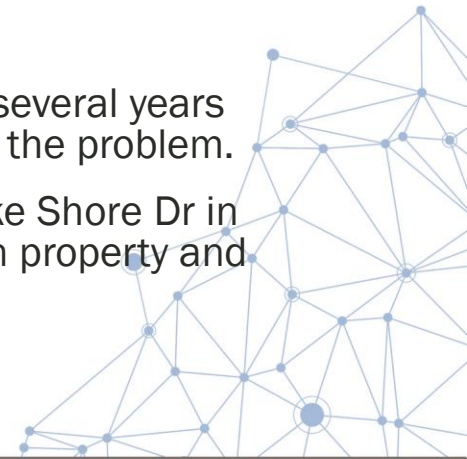
- Pine Tree Lane Diamond Point
- Always having power outages when others don't. They can last up to four days.
- Lack of back up power
- Loon Lake Dam Failure.
- Power outages due to lack of appropriate tree removal along power lines.
- Poor cell service. Lake Luzerne
- Queensbury boat launch, Glen Lake, Lake George, Hudson
- Susceptibility to flooding, poorly maintained dams owned by city of Glens Falls.
- Schools lack of back up power in the event power goes out and lack heating elements. Trees along residential roads that aren't cut back. Power drainage on roadways.
- Prone to power outages from trees on lines
- General back-up power, snow/ice blockage on highways
- Floodprone area on Meadowbrook Road @ Halfway Brook
- Low water levels in Kattskill by Lake George due to water management practices
- Apartment building for disabled and retired with all electric heat. No on demand generator.
- Located at 10 Manor Rd.

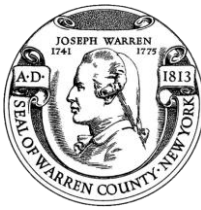




# Problem Areas, continued

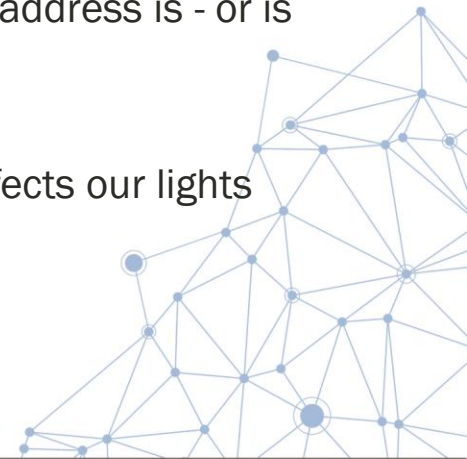
- 13th Lake Road, North River. The gabion walls are pushed out and look like they will give at any time. Also rocks fall in the middle of the road all the time.
- Flooding - 9N S/Hidden Valley Drive (Tubby Tubes-Lake Luzerne, NY 12846), due to a sewer drain that doesn't handle all the water, causing back up and ice/danger in winter. Trees down in my property from recent high winds (1275 Lake Avenue, Lake Luzerne, 12846)
- Water Tank control panel without power backup
- Ice jamming on Hudson River at 418 Bridge.
- Flooding on River Road
- Lake George sewage treatment plant has minimal security and is vulnerable to walk up attacks on infrastructure.
- Numerous roads and stream crossings could be subject to flood/storm damage.
- East End in Glens Falls is known for being a high water table area
- North Bolton Road at the foot of Church Hill Road is continually flooded due to the road having been raised several years ago. Raising the road removed all drainage possibilities and County officials refuse to do anything to correct the problem.
- Storm Drainage system that runs down the Lakeview Circle drive in the town of lake George and crosses Lake Shore Dr in the town of lake George and continues down to the lakefront between the Fairview Improvement association property and the lake view terrace property.





# Problem Areas, continued

- Lack of municipal sewer and water
- Poor drainage for city streets (most streets in Glens Falls); raw sewage releases into the Hudson River (sometimes even if it only rains briefly); Poor tree maintenance causes downed branches in the high winds we now get for many months of the year.
- My road is collapsing into a stream. Many dead trees along the road. So called protected land around the watershed is not protected or monitored
- C/Glens Falls flood prone streets. Warren St, Mohican St, CR 19 T/Chester. SR 418 bridge & River Rd, Barton Mines RD  
Johnsburg
- Loon Lake Dam, Rt 8/9, Chestertown
- ZERO fragrance-free emergency shelters! Acute respiratory response / reactive airways when exposed for perfumes, scented products (ubiquitous), etc. ALSO: FEMA Flood Map makes ZERO sense! Unable to determine if my address is - or is not - in a flood plain: Fredella Avenue, Glens Falls, NY.
- Hudson River Basin Lake Luzerne to Corinth
- We have experienced power outages for as lengthy as 5 days. being on a deep well, the outage not only effects our lights and heat, but water as well.
- Electric
- Glens Falls dams on West Mountain

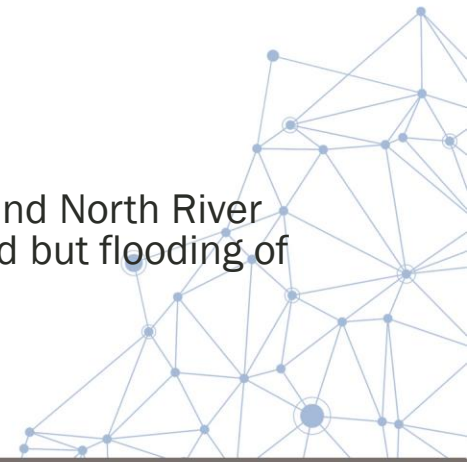


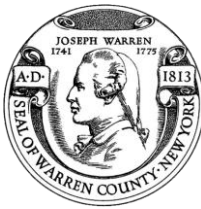




# Problem Areas, continued

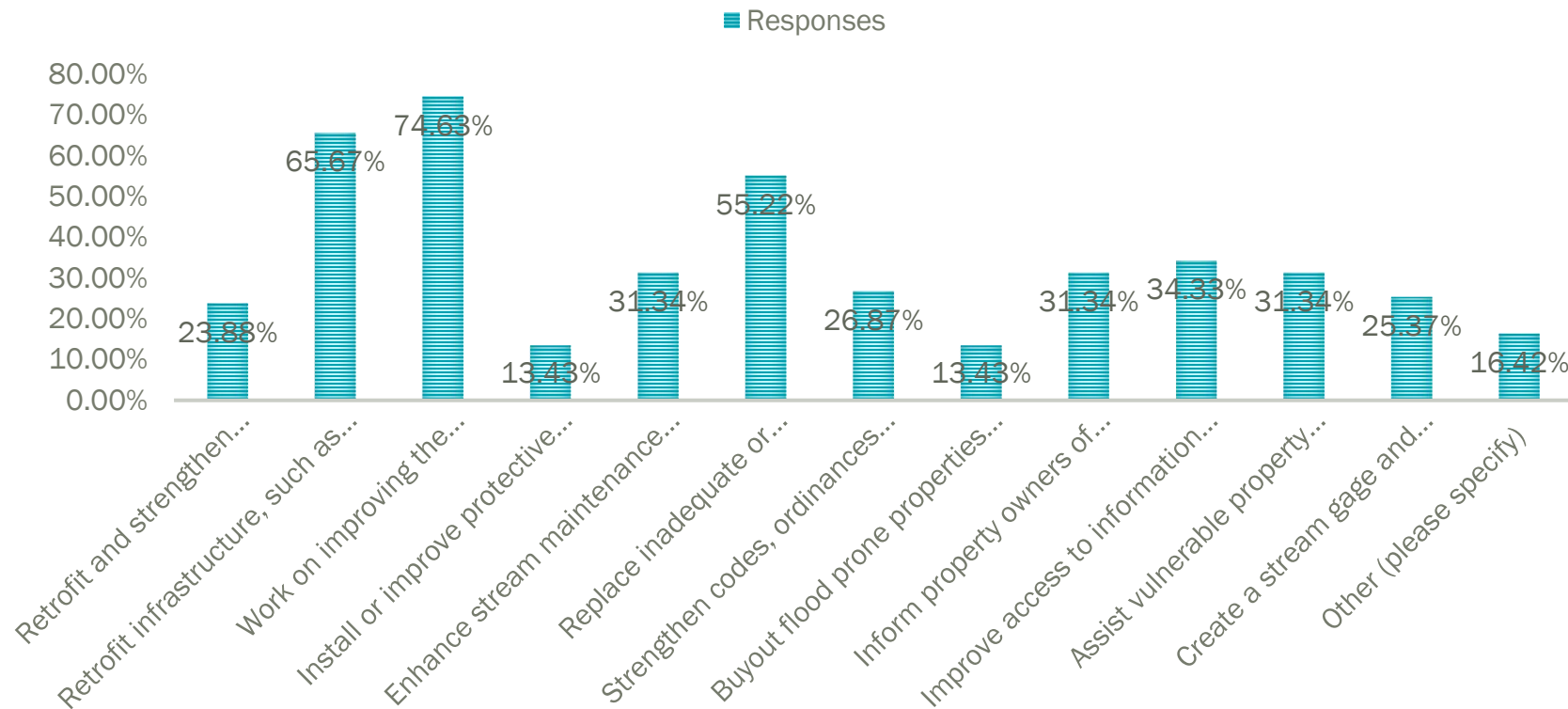
- Federal Hill Rd
- Areas along Hudson River and Schroon River are flooded frequently
- Lack of internet service in rural areas.
- Queensbury - Halfway Brook Area/flooding
- Warrensburg - Schroon River Area/flooding
- Chester & Horicon - Schroon River Area/flooding
- Meadowbrook Road, Queensbury - Flooding
- Lakeview Circle Drive Town of Lake George
- GFWWTP releasing sewage into Hudson after every heavy rainstorm.
- Inadequate storm drainage on streets
- Power cybersecurity concerns
- Flooding of the Hudson River in the spring occasionally that affects the State rt. 28 between North Creek and North River and includes part of the town North Creek at the train station. The historic Train station has been preserved but flooding of the Hudson in the spring has caused concern a number of years in the past ten.
- Thurman bridge
- Downtown Warrensburg from Schroon River flooding





# Priority Projects

What types of projects do you believe local, county, state, or federal government agencies could be doing to reduce the damage and disruption of disasters in Warren County?



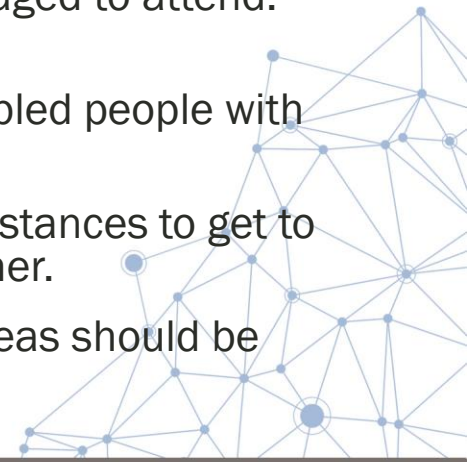
## Top 3 project types to fund:

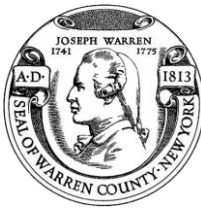
- 74.8% - Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities etc.)
- 65.6% - Retrofit infrastructure, such as elevating roadways and improving drainage systems
- 55.2% - Replace inadequate or vulnerable bridges and causeways



# Concerns

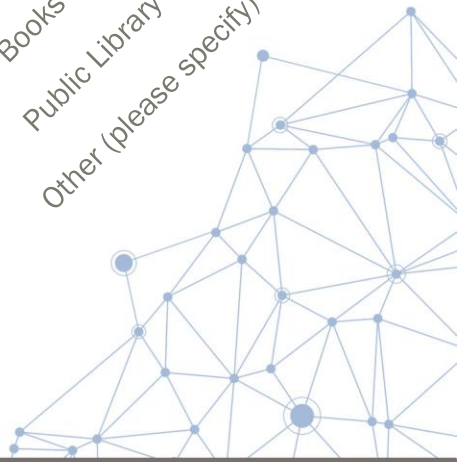
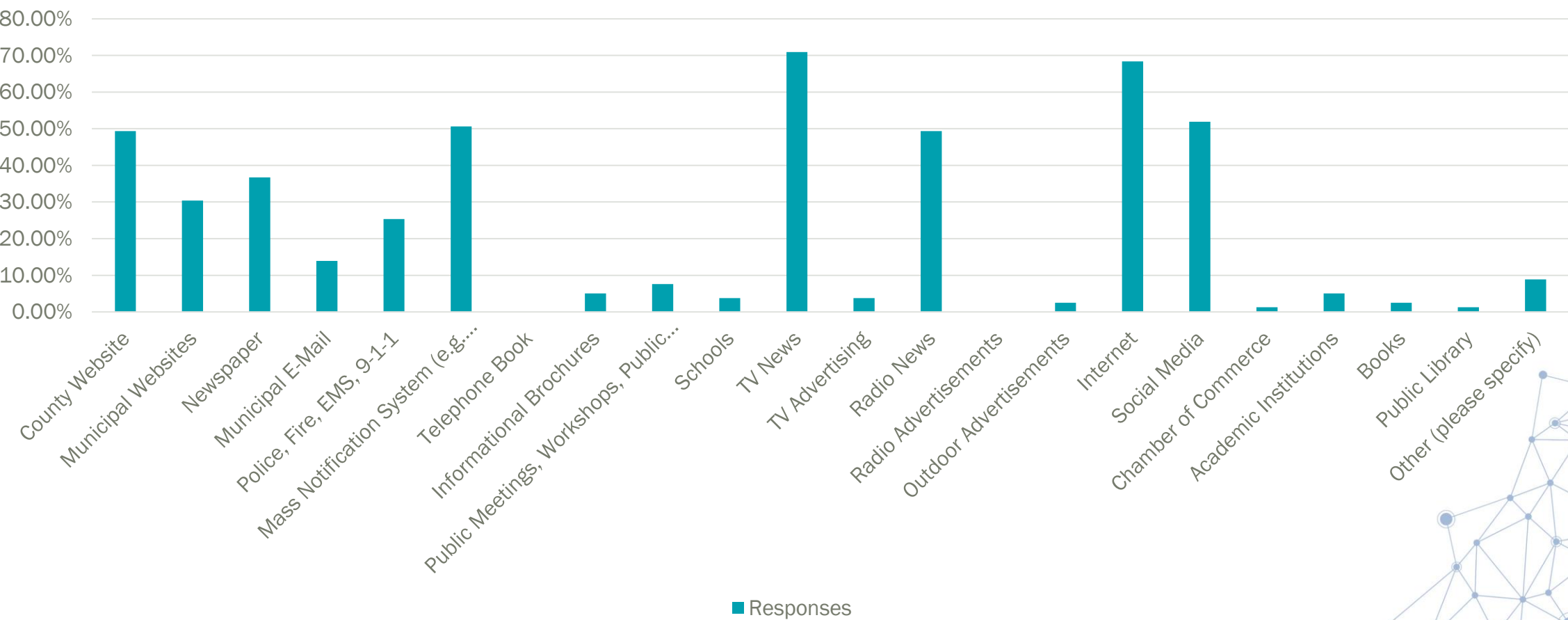
- Inadequate shelters in case of emergencies
- Remove tree limbs that hang over the 9L road before someone gets seriously injured
- I would appreciate receiving real time alerts from Warren County similarly to FEMA
- Each municipal government should be required to participate in this process. They should assess their community for potential hazards and develop a mitigation plan.
- Warren County needs to fix the drainage issue it CAUSED.
- I see that climate change is affecting us. One problem that we never experienced until recent years is algae blooms.
- I see climate change as one of the biggest concerns now and in the future that could and would impact a lot of weather -related hazard events. I think more projects that focus on taking care of our environment, like adopt a highway and stream clean up days, as a good thing to consider.
- Annual preparedness training at senior centers, at schools and in locations that citizens are encouraged to attend. create a citizen team to work with Emergency Management for Warren County
- Vastly improve ACCESSIBILITY for disabled people and Disaster Planning to include INPUT from disabled people with various disabilities; including respiratory
- During severe winter storms, county buildings need to close or open late as employees travel long distances to get to Warren County Municipal Center and should not have to use personal time in case of extreme weather.
- Extreme weather (heavy downpours and sudden storms) have increased greatly. Review of runoff areas should be reviewed.

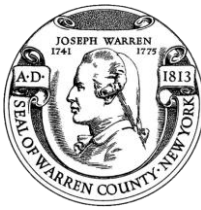




# Effective Messaging Resources

How do you receive your information concerning a disaster? Check all that apply.





# Document Review on Sharepoint

- Access for document review
- Review in “desktop app” in track changes

OneDrive interface showing the 'Warren County (NY) HMP' folder. The 'Steering Committee' folder is circled in green, with a blue arrow pointing to it.

Name	Modified	Modified By	File size	Sharing
GIS	November 14, 2022	frankenfelds@warrencoun	4 items	Shared
Letters of Intent to Participate	September 16, 2022	Bianco, Cynthia	14 items	Shared
Outreach Materials	November 30, 2022	Bianco, Cynthia	10 items	Shared
<b>Steering Committee</b>	January 24	Bianco, Cynthia	1 item	Shared
Survey				
SWCD				

OneDrive interface showing the 'Documents for Review' folder. The '5.2 - HOC ID\_Warren\_rev.docx' file is circled in green, with a blue arrow pointing to it.

Name	Modified	Modified By	File size
Old	January 31	Bianco, Cynthia	6 items
Warren_TOC.docx	January 25	Bianco, Cynthia	205 KB
<b>5.2 - HOC ID_Warren_rev.docx</b>	6 days ago	Bianco, Cynthia	422 KB
Section 1-Introduction_rev.docx	6 days ago	Bianco, Cynthia	1.05 MB
Section 2-Plan Adoption.docx	January 25	masona@warrencountyny	360 KB
Section 5.1_Methodology_rev.docx	6 days ago	Bianco, Cynthia	517 KB

OneDrive interface showing the 'Documents for Review' folder. The 'Documents for Review' folder is circled in green, with a blue arrow pointing to it.

Name	Modified	Modified By	File size	Sharing
<b>Documents for Review</b>	January 24	Bianco, Cynthia	6 items	Shared





# Draft Plan Review – Section Contents

## Volume I

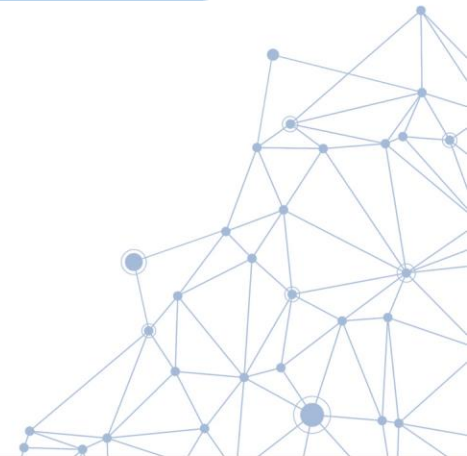
- **Section 1 – Introduction**
  - Mitigation Planning Overview
  - Participating Jurisdictions
  - 2023 Updates
- **Section 2 – Plan Adoption**
  - Adoption Process
- **Section 3 – Planning Process**
  - Participants
  - Activities
  - Ongoing Process



HAZUS-MH was applied to

- Identify Hazards (Phase 2)
- Profile Hazards (Phase 2)
- Perform a Vulnerability Assessment (Phase 2) including:
  - Inventory Assets
  - Estimate Losses
  - Evaluate Development Trends
  - Present Results of Risk Assessment

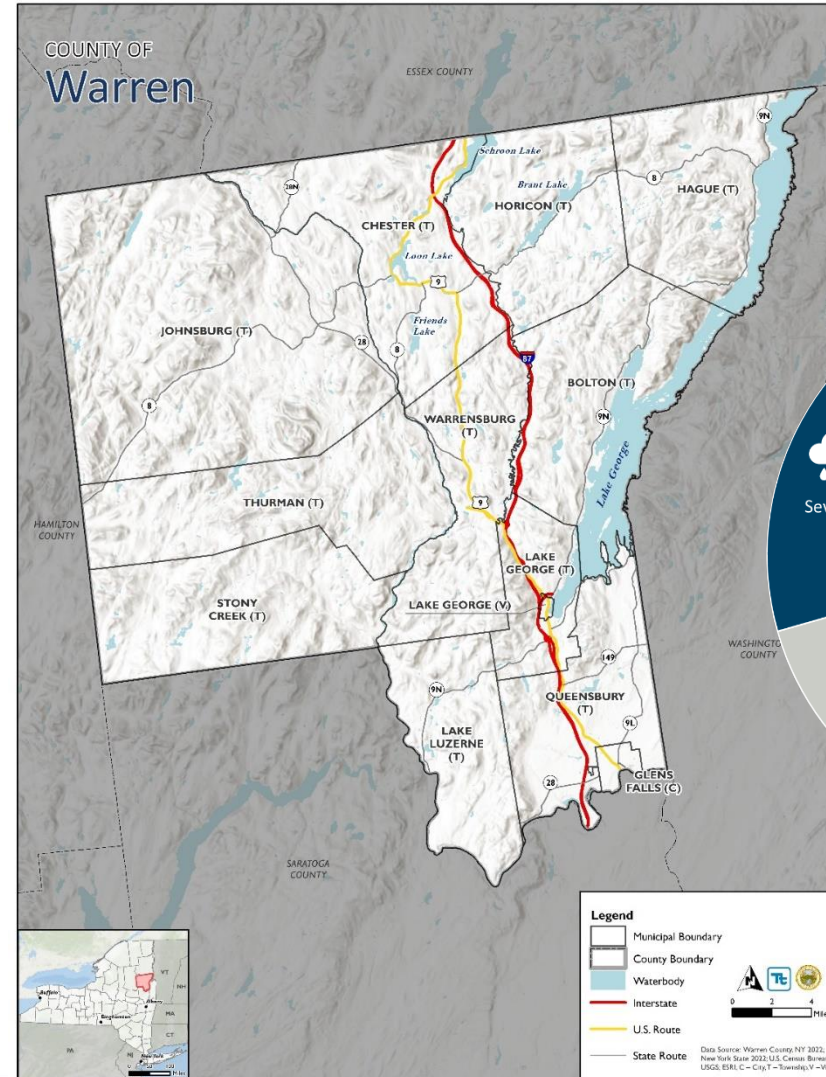
These results provide an input to Phase 3.



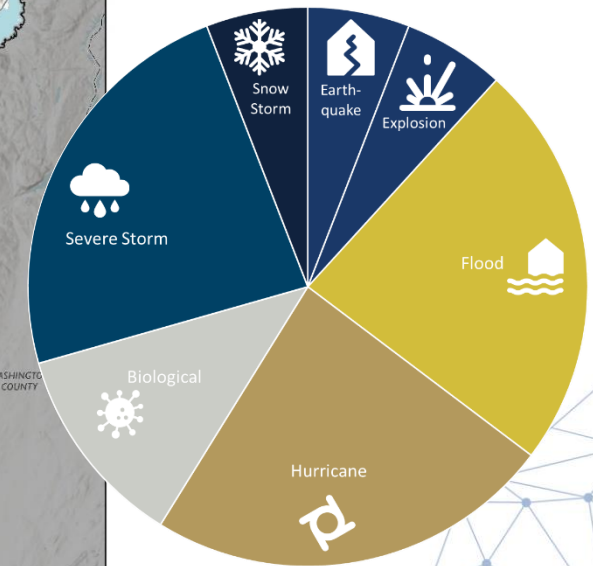


# Draft Plan Review – Section Contents

- **Section 4 – County Profile**
  - History & Physical Setting
  - Population and Demographics
  - Major Hazard Event History
  - General Building Stock
  - Land Use and Population Trends
  - Critical Facilities & Lifelines
- **Section 5 – Risk Assessment**
  - Hazards of Concern
  - Hazard Ranking
  - Hazard Profiles

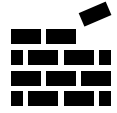


Warren County Hazard Events





# Hazards Profiles – Section 5.4



- Dam Failure



- Disease Outbreak



- Earthquake



- Extreme Temperature



- Flood



- Infestation and Invasive Species



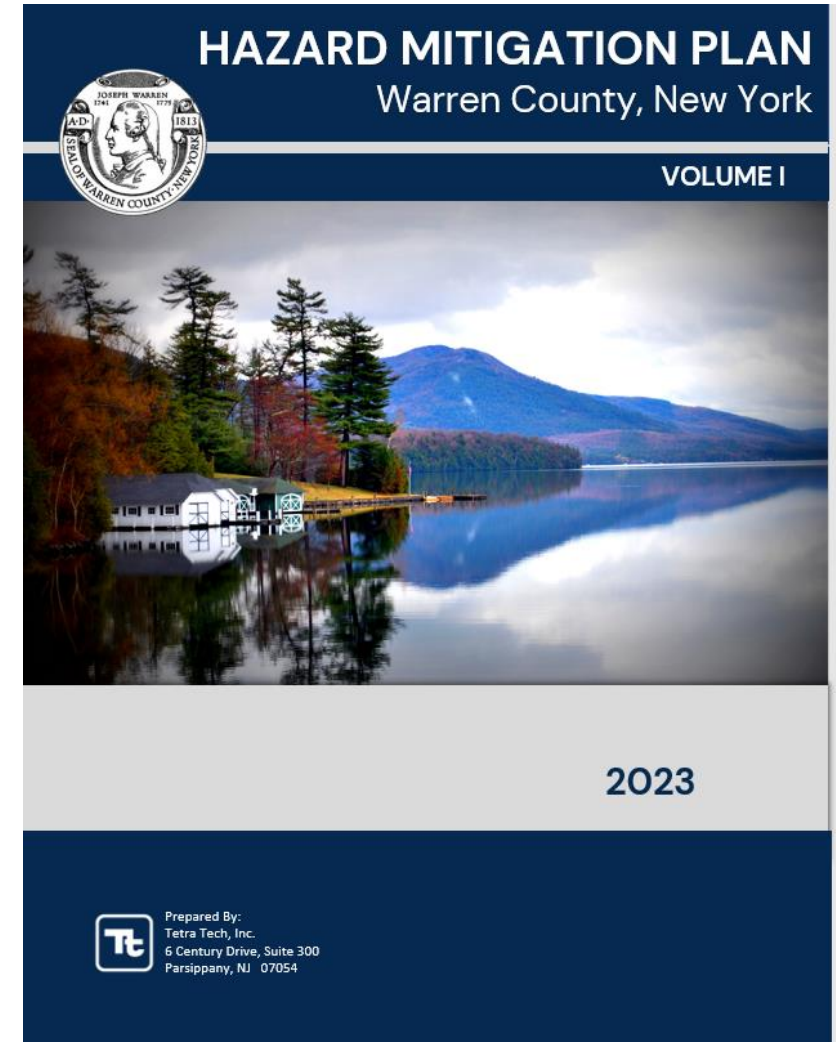
- Severe Storm

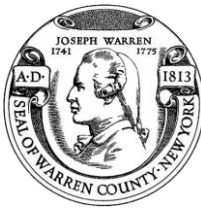


- Severe Winter Storm



- Wildfire





# Draft Plan Review – Section Contents

- Section 6 – Mitigation Strategies
  - Past accomplishments
  - Goals and Objectives
  - Capability Assessment
    - Available plans, programs, & resources
    - Administrative and technical capabilities
    - Fiscal capabilities
  - Mitigation strategy development and update
    - Action identification
    - Evaluation and prioritization
    - Benefit/cost review

*To create communities whose daily activities reflect a comprehensive commitment by government, business, non-profit organizations, socially vulnerable populations, and the public to eliminate or reduce risks and adverse impacts from natural, **and human-caused** hazards.*

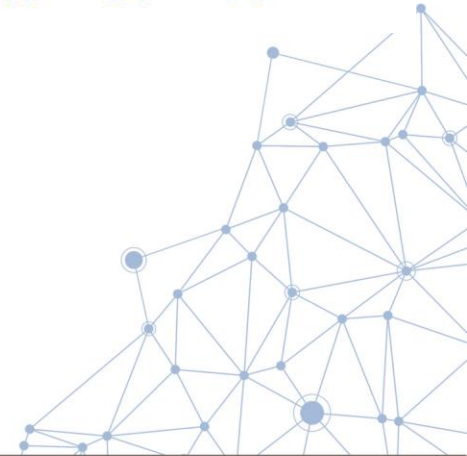
Discussion item: Omit human-caused hazards to align with FEMA HMP focus.





# Draft Plan Review – Section Contents

- Section 7 – Plan Maintenance
  - HMP Coordinator
  - Ongoing Planning Committee
  - Monitoring
  - Continuous evaluation and progress reports
    - FEMA Worksheets and BATool<sup>SM</sup>
  - Updating
  - Integration of hazard mitigation with existing and future programs
  - Continued public involvement







# BATool<sup>SM</sup>

- Online progress reporting for individual mitigation actions – pre-populated by Tetra Tech

[Prev Action](#) \* Action ID: TPQ - 1 [Next Action](#)

*Review of this Action has not started* [Add New Action](#)

> [View Update History](#)

Please review and update this action by following the steps below and updating any/all fields (as needed).

*Step 1: Enter your name as the 'Reviewer' (then step 2 will be enabled for selection).*

\* Reviewer:

*Step 2: Update the 'Action Status' field. Please continue to review and update all other fields, as needed.*

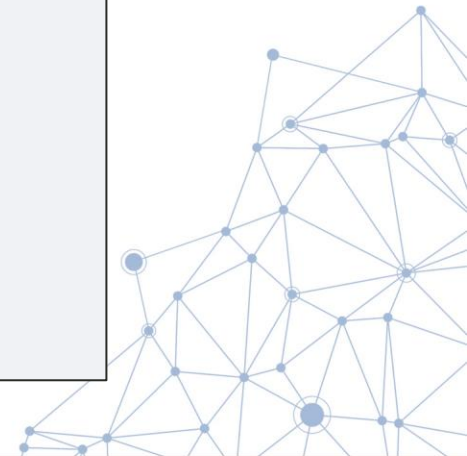
\* Action Status:

Previous Action Status:

Project/Action Status Comments:

\* Description of the Action:

Specific Problem Mitigated:





# Plan Maintenance Matrix

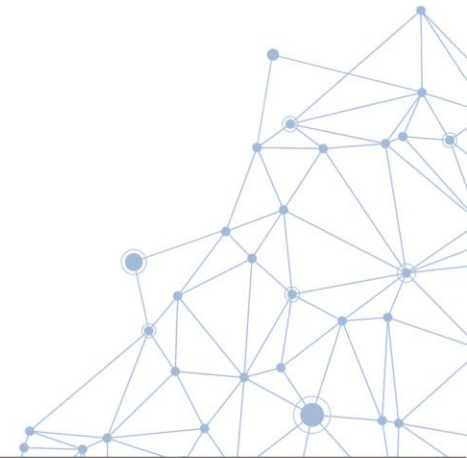
Task	Approach	Timeline	Lead Responsibility	Support Responsibility
Monitoring	Preparation of status updates and action implementation tracking as part of submission <b>for Annual Progress Report.</b>	January or upon major update to Comprehensive Plan or major disaster	Jurisdictional points of contact identified in Section 8 (Planning Partnership) and Section 9 (Jurisdictional Annexes)	Jurisdictional implementation lead identified in Section 8 (Planning Partnership) and Section 9 (Jurisdictional Annexes)
Integration	In order for integration of mitigation principles action to become an organic part of the ongoing county and municipal activities, <b>the county will incorporate the distribution of the safe growth worksheet (see 7.1.2 below) for annual review</b> and update by all participating jurisdictions.	January each year with interim email reminders to address integration in county and municipal activities.	HMP Coordinator and jurisdictional points of contact identified in Section 8 (Planning Partnership) and Section 9 (Jurisdictional Annexes)	HMP Coordinator
Evaluation	Review the status of previous actions as submitted by the monitoring task lead and support to assess the effectiveness of the plan; compile and finalize the Annual Progress Report	Finalized progress report completed by January 15 of each year	Steering Committee; Plan Maintenance element	Jurisdictional points of contacts identified in Section 9 (Jurisdictional Annexes)
Update	<b>Reconvene the planning partners</b> , at a minimum, every 5 years to guide a comprehensive update to review and revise the plan.	Every 5 years or upon major update to Comprehensive Plan or major disaster	Warren County HMP Coordinator	Jurisdictional points of contacts identified in Section 9 (Jurisdictional Annexes)



# Draft Plan Review – Section Contents

## Volume II

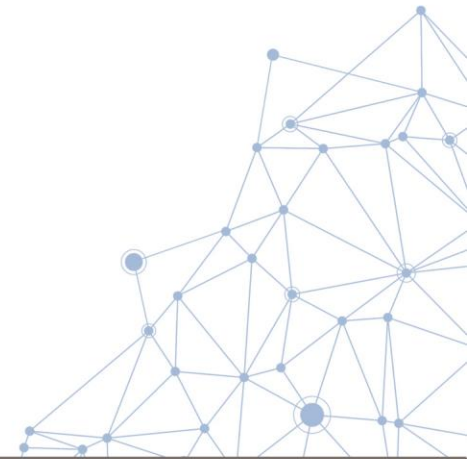
- **Section 8 – Planning Partnership**
  - Participating jurisdictions
  - Introduce jurisdictional annexes
- **Section 9 – Municipal Annexes**
  - Point of Contact
  - Municipal Profile
  - Capabilities
  - NFIP Participation
  - Risk Assessment
  - Critical Facilities
  - Status of Past Mitigation Actions
  - Current Mitigation Actions
  - Future Needs





# Draft Plan Review – Section Contents

- Appendices
  - Appendix A – Plan Adoption
  - Appendix B – Participation Matrix
  - Appendix C – Meeting Documentation
  - Appendix D – Public and Stakeholder Outreach Documentation
  - Appendix E – County Profile and Risk Assessment Supplementary Data
  - Appendix F – Critical Facilities
  - Appendix G – FEMA Plan Review Tools
  - Appendix H – NYS DHSES 2017 Mitigation Planning Standards





# Steering Committee Review Guidance

- Documents posted on OneDrive for collaborative review
  - OneDrive guidance will provide direction on how to edit/comment
- Input requested
  - Provide additional or specific information
  - Correct errors or omissions
- All feedback requested on or before July 12<sup>th</sup>
  - Feedback will be incorporated as appropriate before Public Review
- Plan sections to be posted on the Warren HMP website for a 30-day review period
- Public feedback to be incorporated as appropriate prior to submittal to NYSDHSES/FEMA for agency review







# Plan Adoption and Timeline

- Information on the planning process is available here: (<https://www.warrencountynyorkhmp.com>)
- Draft plan sections will be posted for public review and comment beginning August 1st for 30 days
- The plan will be submitted for review and approval by NYSDHSES and FEMA in November
- Adoption of the plan by the community is required to be deemed APPROVED by FEMA.

The screenshot shows the website for the Warren County Hazard Mitigation Plan 2023 Update. The header is dark blue with the Warren County seal and the title 'WARREN COUNTY HAZARD MITIGATION PLAN 2023 UPDATE'. Below the header is a navigation bar with links: Home, About, What Is Mitigation, Meetings, Calendar, Explore the Plan, and Additional Information. The main content area is white and features the heading 'Explore the Plan'. Below this, it says '2023 Warren County Hazard Mitigation Plan Update' and 'Sections of the 2023 Warren County HMP update will be posted as available.' There is a section titled 'Municipal Annexes' with a list of annexes and a 'Download' link for each:


Municipal Annexes	Download
• 9.02_Town of Bolton	Download
• 9.03_Town of Chester	Download
• 9.04_City of Glens Falls	Download
• 9.05_Town of Hague	Download
• 9.06_Town of Horicon	Download
• 9.07_Town of Johnsbury	Download
• 9.08_Town of Lake George	Download
• 9.09_Village of Lake George	Download
• 9.10_Town of Lake Luzerne	Download



# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	

**Warren County HMP - In-Kind Tracker**

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

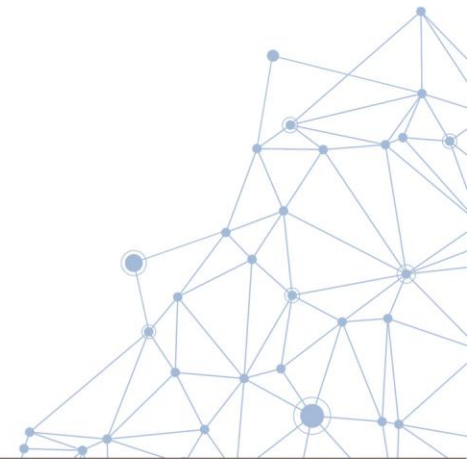
# Hours





# Next Steps

- Finalize Jurisdictional Annexes – in progress, drafts posted on OneDrive and [www.warren](http://www.warren)
- Steering Committee Plan Review – Now through July 12th
- Update Plan Based on Steering Committee Feedback
- Draft Posted for Public Review and Comment – August 1<sup>st</sup> – 30 Days
- Submit to NYS DHSES and FEMA – September 2023
  - Estimated 45-day review period
- BATool<sup>SM</sup> Webinar to Review Plan Maintenance
- Plan Adoption by County and Participating Municipalities



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





## APPENDIX D. PUBLIC AND STAKEHOLDER OUTREACH

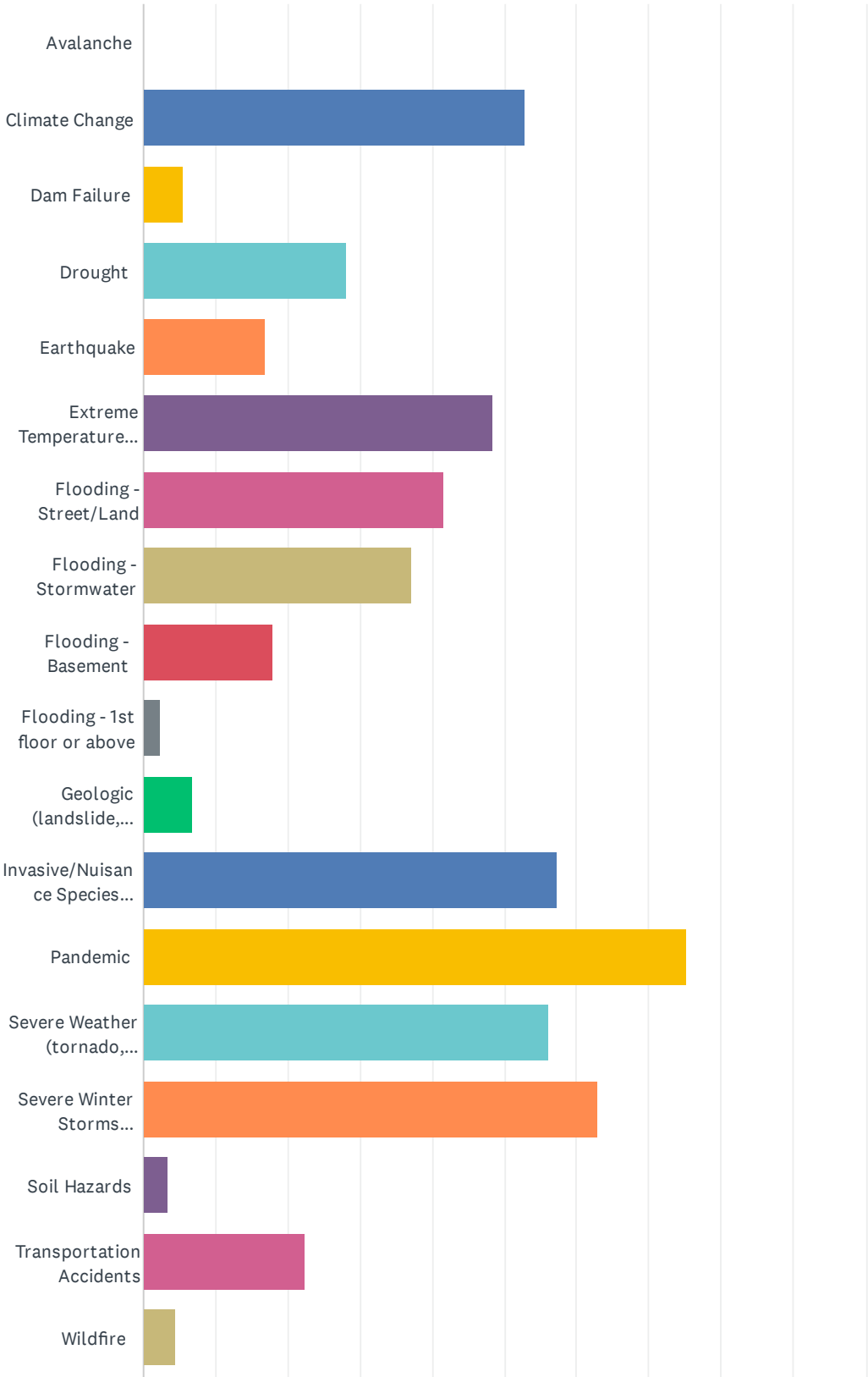
This appendix provides documentation of public and stakeholder outreach. Stakeholder involvement in this planning process was broad and productive as discussed and further documented in Section 3 (Planning Process). Public and stakeholder input has been incorporated throughout this HMP as appropriate, as identified in Section 3 and the References section, as well as within specific mitigation initiatives identified within the jurisdictional annexes (Section 9). Respondent feedback filtered by jurisdiction is included in each jurisdictional annex as available to provide an indication of community resident concerns related to natural hazards.

### D.1 WARREN COUNTY CITIZEN SURVEY RESULTS

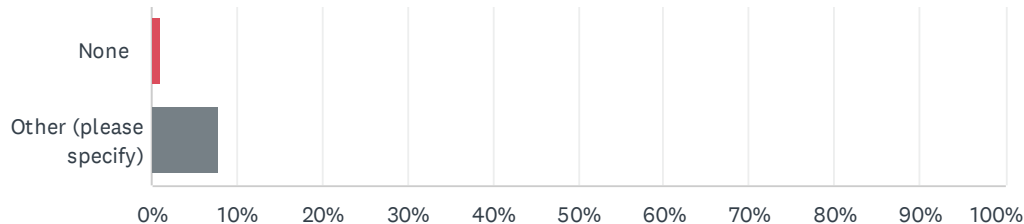
This section contains information and results gathered from the Warren County Citizen Survey. The main objective of this survey was to gather information from citizens regarding their level of knowledge regarding hazard vulnerability and knowledge of hazard mitigation information for their local communities. Over 90 respondents completed this survey over a period of 12 months during the planning process. The survey was available on Warren County website and the HMP website at: <https://www.warrencountynewyorkhmp.com>. The survey results are provided in the following pages, with personal information redacted.

Q1 In the past 10 years, which of the following hazard events have you experienced in Warren County? Check all that apply.

Answered: 89    Skipped: 1



# Warren County Hazard Mitigation Plan Update - Public Survey



ANSWER CHOICES	RESPONSES	
Avalanche	0.00%	0
Climate Change	52.81%	47
Dam Failure	5.62%	5
Drought	28.09%	25
Earthquake	16.85%	15
Extreme Temperature (heat and cold)	48.31%	43
Flooding - Street/Land	41.57%	37
Flooding - Stormwater	37.08%	33
Flooding - Basement	17.98%	16
Flooding - 1st floor or above	2.25%	2
Geologic (landslide, sinkholes, subsidence)	6.74%	6
Invasive/Nuisance Species (harmful algal bloom, spotted lanternfly, etc.)	57.30%	51
Pandemic	75.28%	67
Severe Weather (tornado, thunderstorm, hail)	56.18%	50
Severe Winter Storms (blizzard, heavy snow, ice)	62.92%	56
Soil Hazards	3.37%	3
Transportation Accidents	22.47%	20
Wildfire	4.49%	4
None	1.12%	1
Other (please specify)	7.87%	7
Total Respondents: 89		

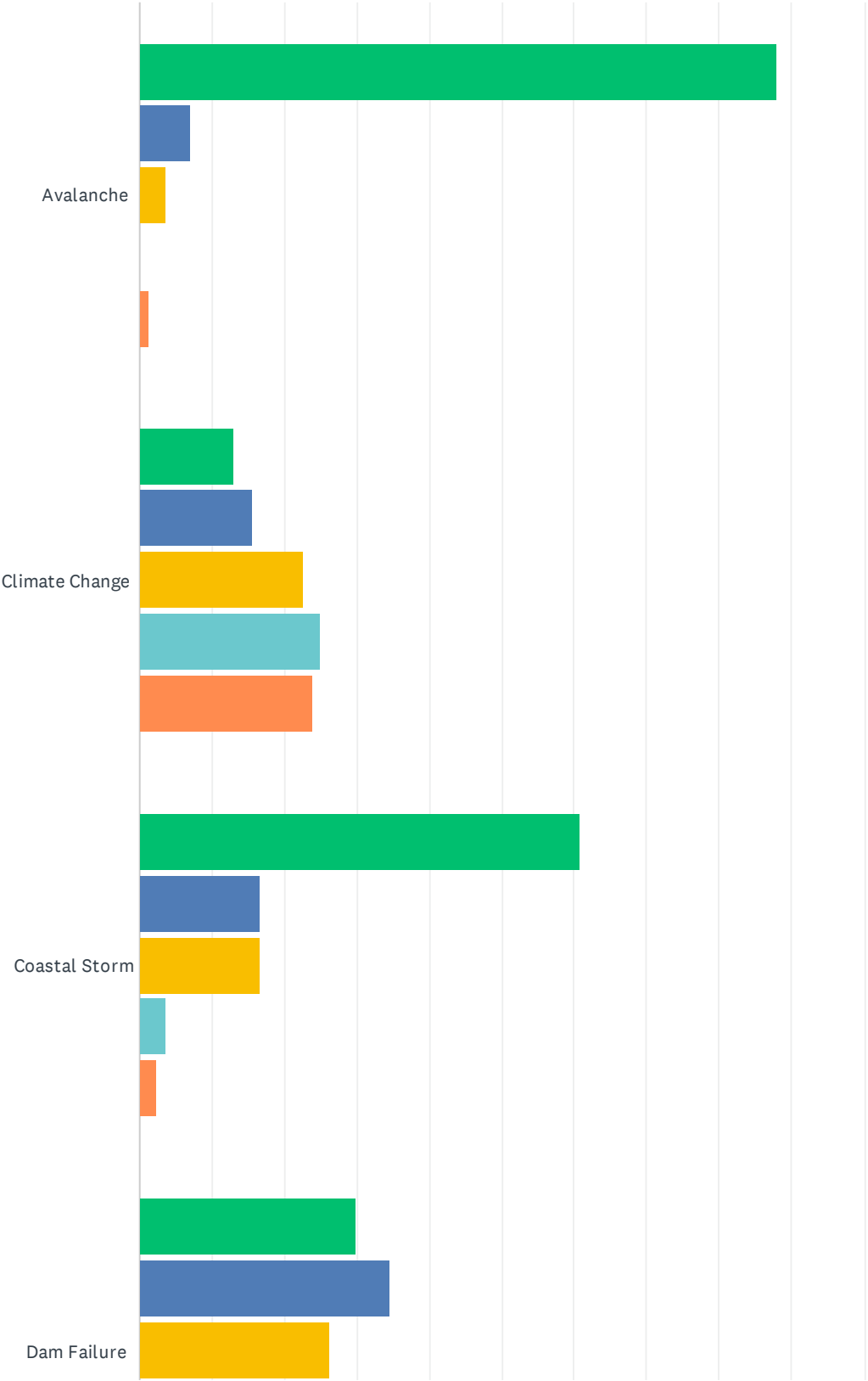
#	OTHER (PLEASE SPECIFY)	DATE
1	Air Quality Danger from Canadian Wildfires	8/2/2023 8:24 AM
2	Spongy Moths	12/21/2022 10:17 AM
3	salt runoff into my private well near Church Hill Road in Bolton Landing	12/11/2022 10:06 AM
4	high winds; raw sewage releases into the Hudson River	12/10/2022 11:36 AM
5	Tree failures. Blocking the road	12/10/2022 8:19 AM

## Warren County Hazard Mitigation Plan Update - Public Survey

6	Sewage backup from street to basement, sewage gas fumes in HVAC floor vents	12/9/2022 9:35 PM
7	tree fell on house	12/9/2022 8:50 PM

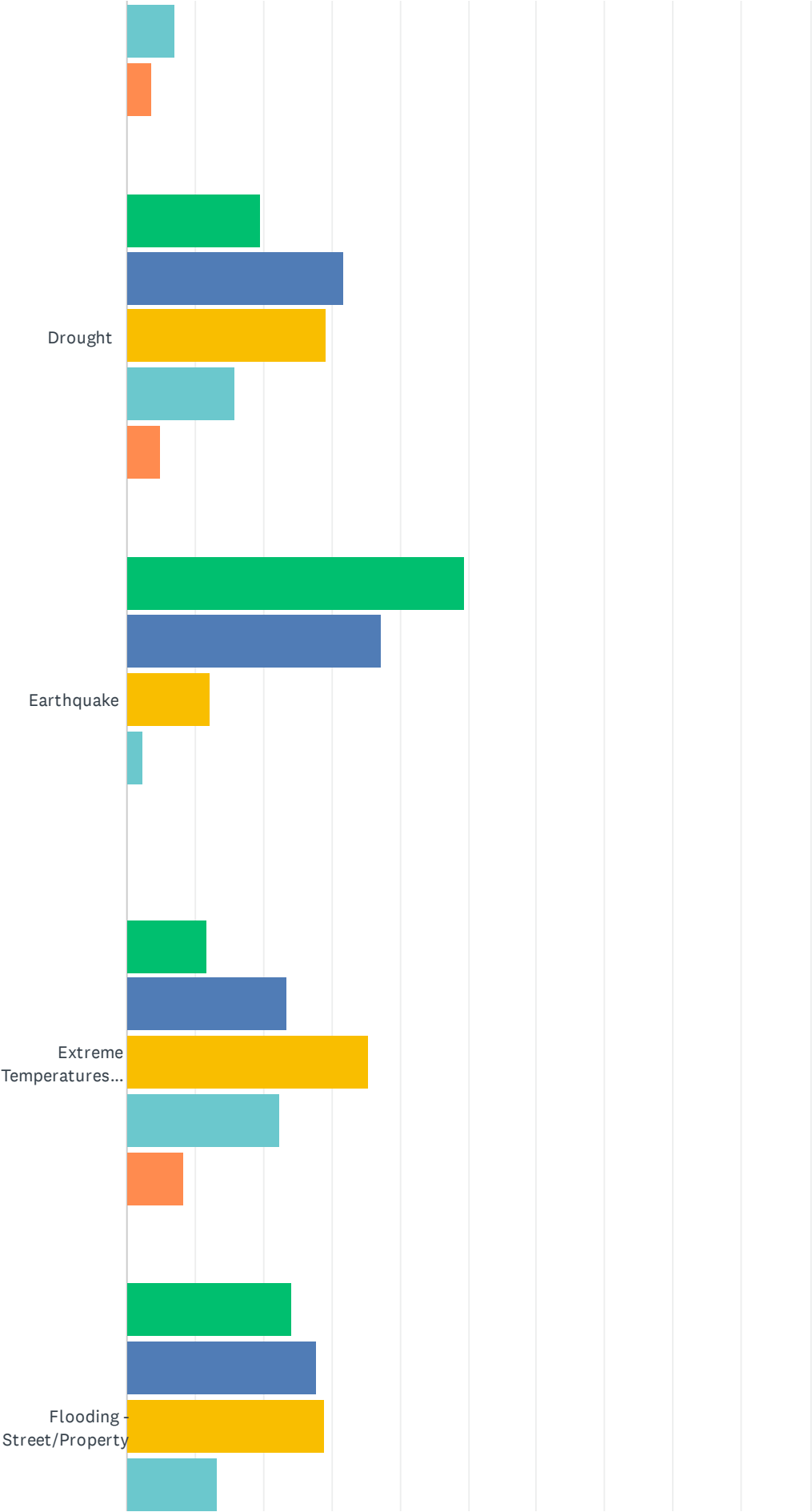
Q2 How concerned are you about the following hazards in Warren County?  
Please check one for each hazard.

Answered: 89    Skipped: 1

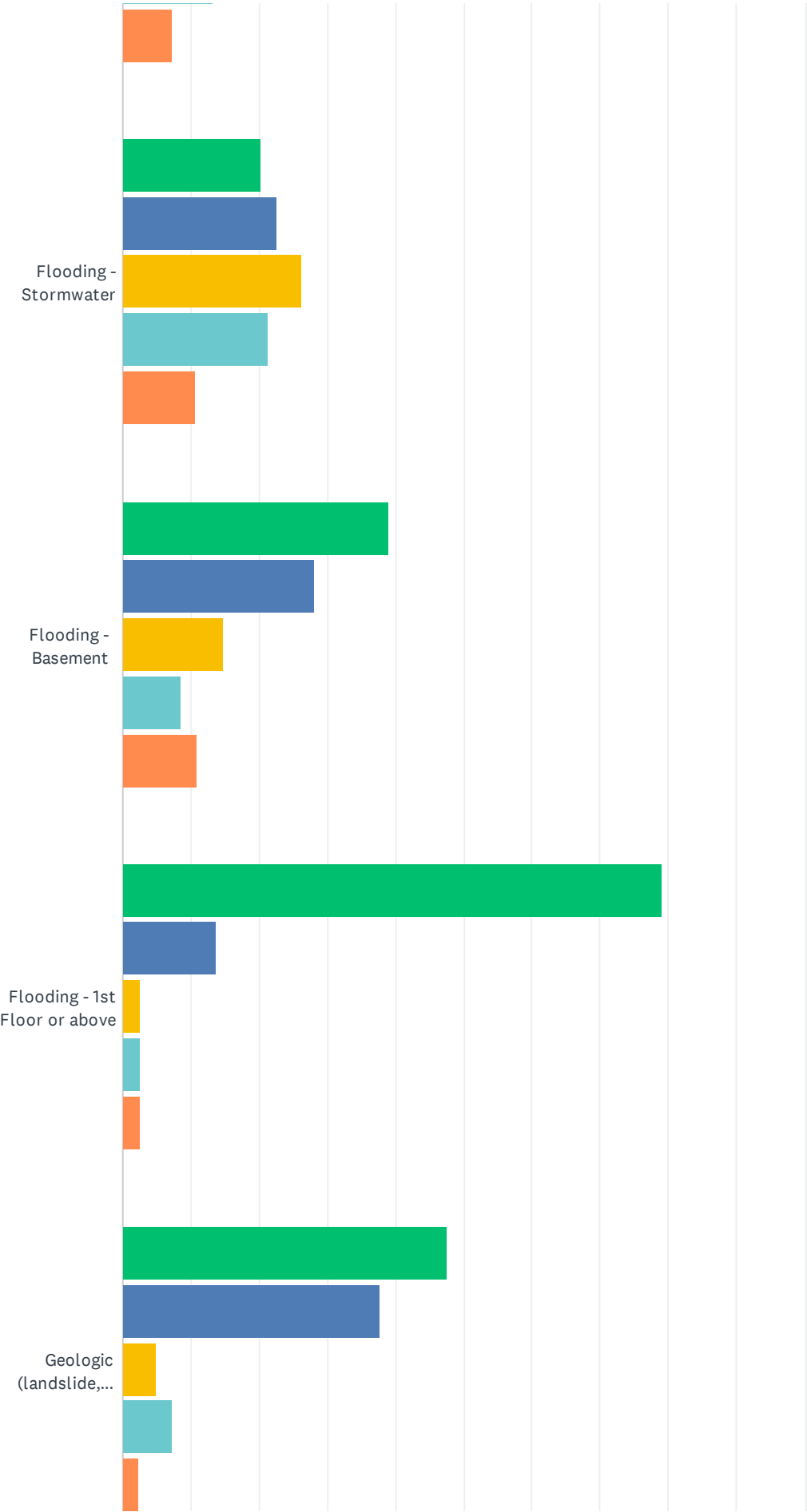




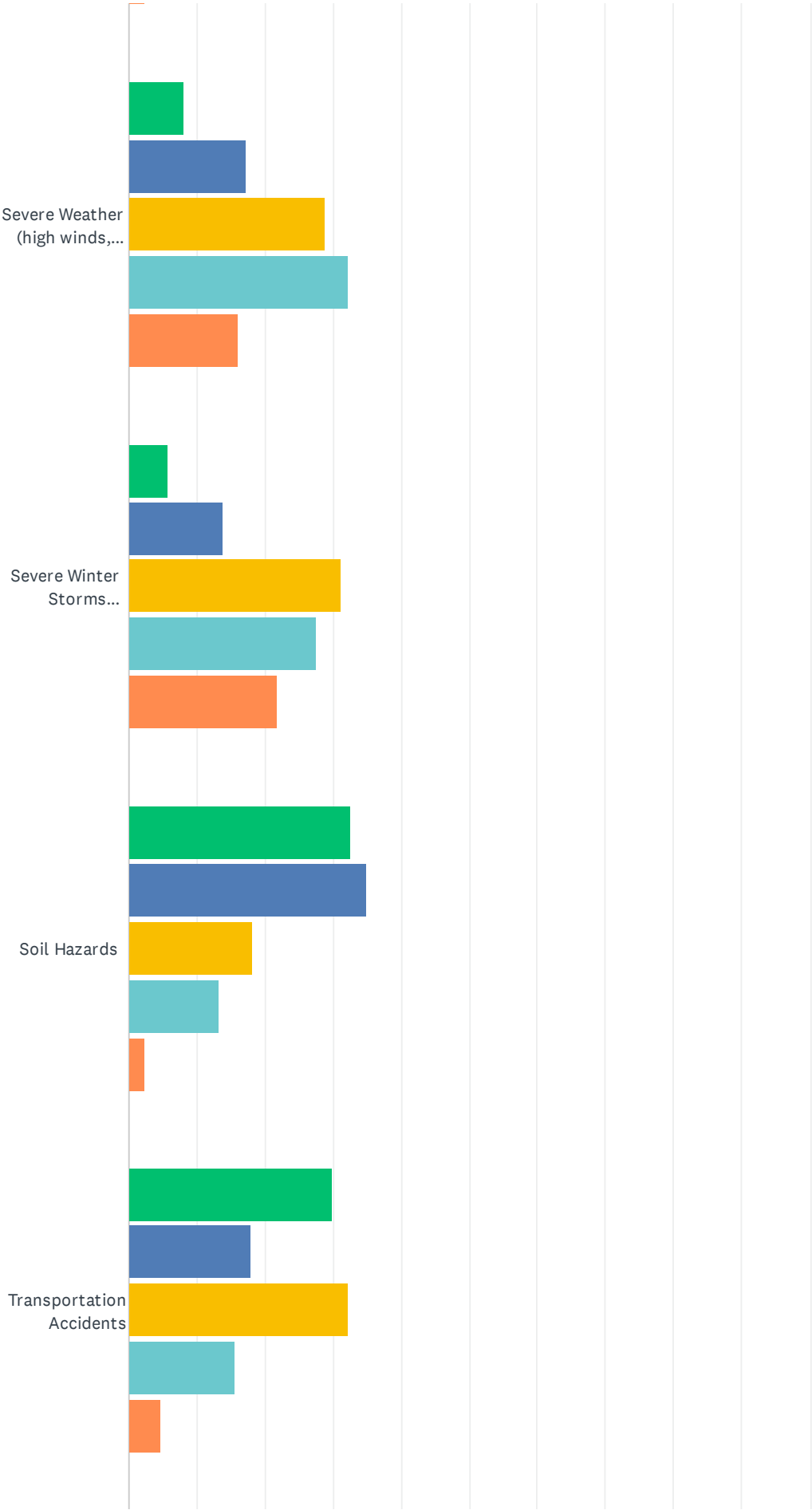
Warren County Hazard Mitigation Plan Update - Public Survey



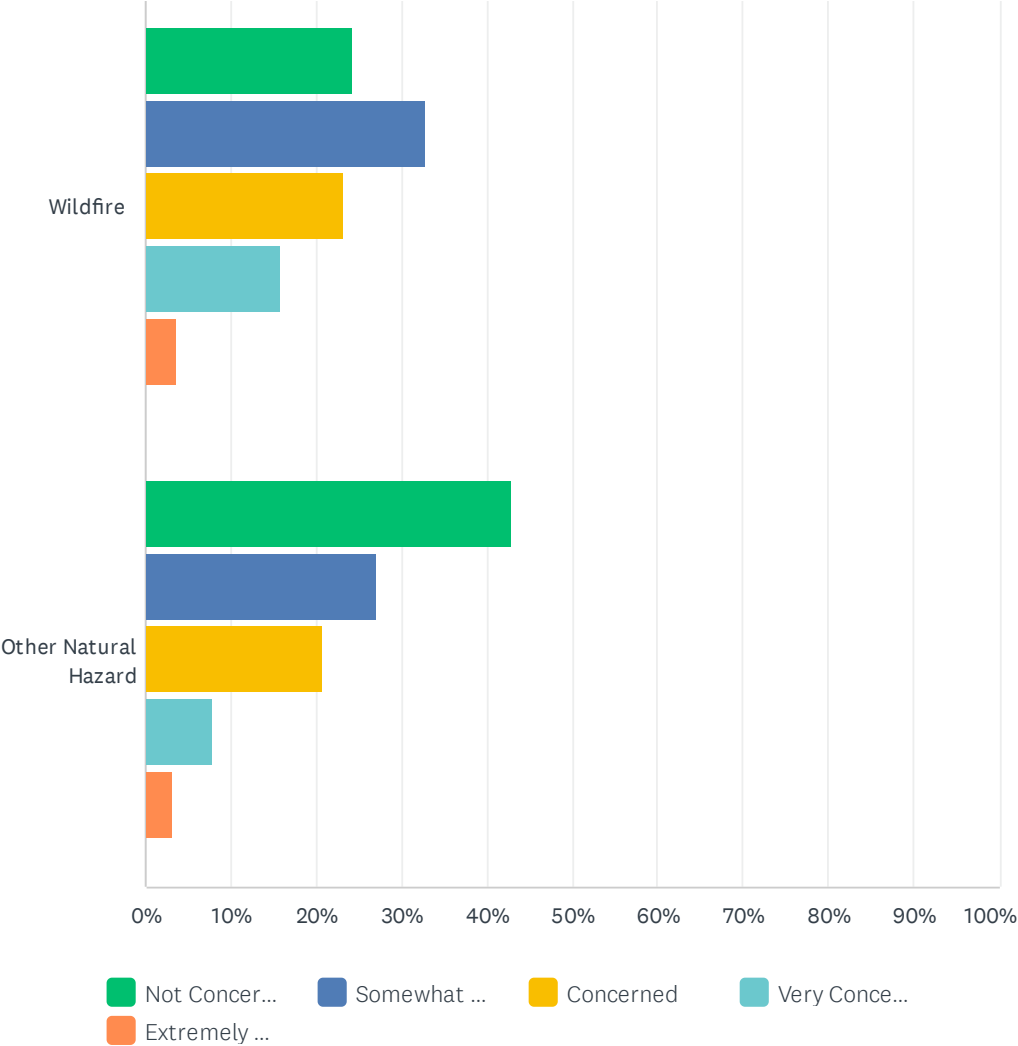
Warren County Hazard Mitigation Plan Update - Public Survey



Warren County Hazard Mitigation Plan Update - Public Survey



Warren County Hazard Mitigation Plan Update - Public Survey



# Warren County Hazard Mitigation Plan Update - Public Survey

	NOT CONCERNED	SOMEWHAT CONCERNED	CONCERNED	VERY CONCERNED	EXTREMELY CONCERNED	TOTAL RESPONDENTS
Avalanche	88.10% 74	7.14% 6	3.57% 3	0.00% 0	1.19% 1	84
Climate Change	13.10% 11	15.48% 13	22.62% 19	25.00% 21	23.81% 20	84
Coastal Storm	60.71% 51	16.67% 14	16.67% 14	3.57% 3	2.38% 2	84
Dam Failure	29.76% 25	34.52% 29	26.19% 22	7.14% 6	3.57% 3	84
Drought	19.51% 16	31.71% 26	29.27% 24	15.85% 13	4.88% 4	82
Earthquake	49.40% 41	37.35% 31	12.05% 10	2.41% 2	0.00% 0	83
Extreme Temperatures (heat and cold)	11.76% 10	23.53% 20	35.29% 30	22.35% 19	8.24% 7	85
Flooding - Street/Property	24.10% 20	27.71% 23	28.92% 24	13.25% 11	7.23% 6	83
Flooding - Stormwater	20.24% 17	22.62% 19	26.19% 22	21.43% 18	10.71% 9	84
Flooding - Basement	39.02% 32	28.05% 23	14.63% 12	8.54% 7	10.98% 9	82
Flooding - 1st Floor or above	79.01% 64	13.58% 11	2.47% 2	2.47% 2	2.47% 2	81
Geologic (landslide, sinkholes, subsidence)	47.56% 39	37.80% 31	4.88% 4	7.32% 6	2.44% 2	82
Severe Weather (high winds, lightning, hail)	8.05% 7	17.24% 15	28.74% 25	32.18% 28	16.09% 14	87
Severe Winter Storms (blizzard, heavy snow, ice)	5.75% 5	13.79% 12	31.03% 27	27.59% 24	21.84% 19	87
Soil Hazards	32.53% 27	34.94% 29	18.07% 15	13.25% 11	2.41% 2	83
Transportation Accidents	29.76% 25	17.86% 15	32.14% 27	15.48% 13	4.76% 4	84
Wildfire	24.39% 20	32.93% 27	23.17% 19	15.85% 13	3.66% 3	82
Other Natural Hazard	42.86% 27	26.98% 17	20.63% 13	7.94% 5	3.17% 2	63

#	OTHER (PLEASE SPECIFY)	DATE
1	Air Quality Dangers	8/2/2023 8:24 AM
2	invasive species ie ash borers	3/15/2023 8:40 AM
3	mass shootings	3/11/2023 6:56 AM
4	Invasive species	3/10/2023 9:13 PM
5	G E and Finch landfills, Hudson River	3/10/2023 7:41 PM
6	Invasive insect forest destruction, power grid failure	1/12/2023 1:43 PM

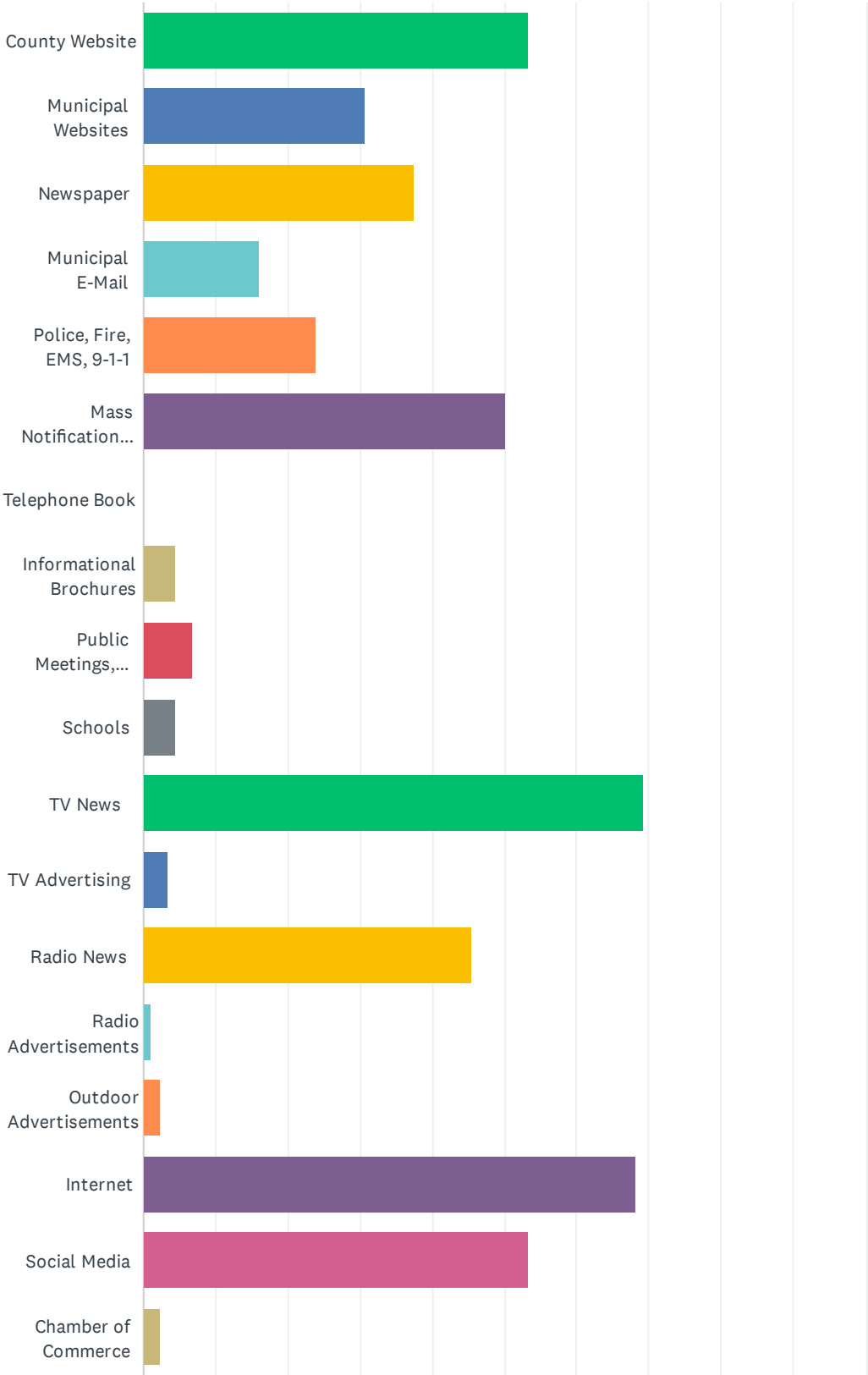


# Warren County Hazard Mitigation Plan Update - Public Survey

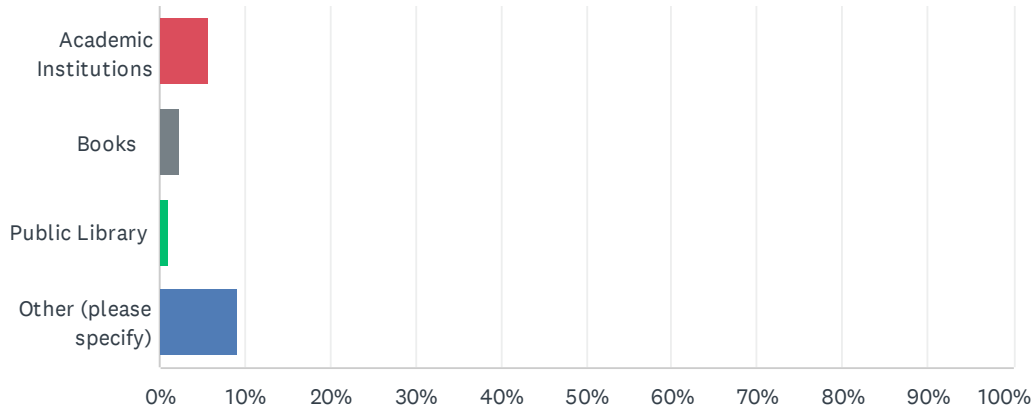
7	Aging Infrastructure	12/27/2022 7:03 AM
8	Invasive species impacts	12/21/2022 10:17 AM
9	Invasive insects	12/20/2022 1:35 PM
10	oil/gas/antifreeze seepage from dock storage at North Bolton Road/Church Hill Road into my pond/catch-basin	12/11/2022 10:06 AM
11	algae blooms	12/10/2022 11:45 AM
12	Power service interruptions should be on your list as they are a very big concern.	12/10/2022 6:52 AM
13	aquifer drainage by Just Water. Toxic air pollution by Finch Pruyn etc	12/9/2022 10:21 PM
14	Tornado	12/9/2022 9:35 PM
15	Invasive species	12/6/2022 10:16 AM

Q3 How do you receive your information concerning a disaster? Check all that apply.

Answered: 88 Skipped: 2



## Warren County Hazard Mitigation Plan Update - Public Survey



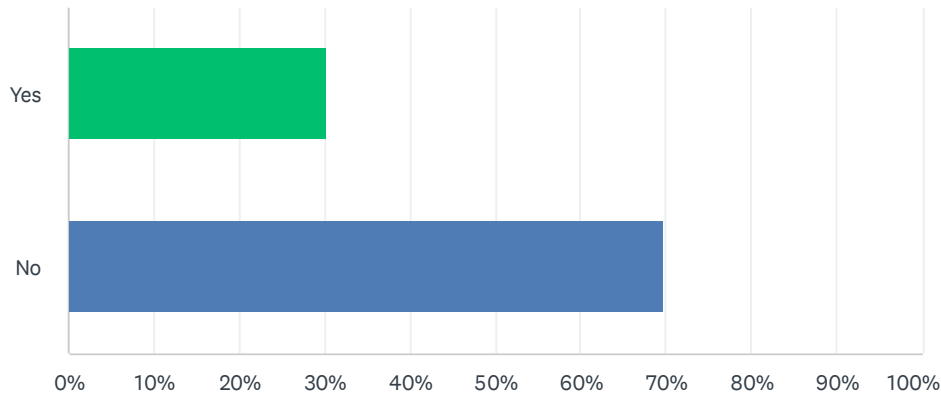
ANSWER CHOICES	RESPONSES	
County Website	53.41%	47
Municipal Websites	30.68%	27
Newspaper	37.50%	33
Municipal E-Mail	15.91%	14
Police, Fire, EMS, 9-1-1	23.86%	21
Mass Notification System (e.g. NYAlert)	50.00%	44
Telephone Book	0.00%	0
Informational Brochures	4.55%	4
Public Meetings, Workshops, Public Awareness Events	6.82%	6
Schools	4.55%	4
TV News	69.32%	61
TV Advertising	3.41%	3
Radio News	45.45%	40
Radio Advertisements	1.14%	1
Outdoor Advertisements	2.27%	2
Internet	68.18%	60
Social Media	53.41%	47
Chamber of Commerce	2.27%	2
Academic Institutions	5.68%	5
Books	2.27%	2
Public Library	1.14%	1
Other (please specify)	9.09%	8
Total Respondents: 88		

# Warren County Hazard Mitigation Plan Update - Public Survey

#	OTHER (PLEASE SPECIFY)	DATE
1	Google phone alerts	7/13/2023 9:20 AM
2	Word of mouth	3/9/2023 6:24 AM
3	Phone/text communication w/ colleagues, friends, family	1/12/2023 1:05 PM
4	Utility Company Alerts (National Grid/Spectrum)	1/8/2023 4:40 PM
5	I am responding	12/14/2022 8:12 AM
6	NY.gov text alerts	12/12/2022 12:02 PM
7	National Grid notifications (Town of Bolton & Warren County do not send emails)	12/11/2022 10:06 AM
8	Friends who work in the fields	12/9/2022 9:35 PM

## Q4 In the past, has your home been damaged by a hazard event? For example, the basement of your home flooded and damaged the hot water heater.

Answered: 86 Skipped: 4



ANSWER CHOICES	RESPONSES	
Yes	30.23%	26
No	69.77%	60
TOTAL		86

#	PLEASE EXPLAIN THE TYPE OF DAMAGE SUSTAINED AND WHEN IT OCCURRED.	DATE
1	Severe storm with lightening damage. Furnace, Door Opener, Elec Damage.	7/24/2023 9:37 AM
2	Extreme cold, frozen water pipes	7/13/2023 7:58 AM
3	roof shingles torn off in wind event in summer 2022	7/12/2023 4:26 PM
4	Wind damage to roof, water damage to ceilings, ice damage, electric system damage from lightning strike	7/11/2023 2:16 PM
5	Tree fell on house	3/11/2023 3:55 AM
6	Wind damage to roof and eaves	3/10/2023 9:13 PM
7	Wind damaged roof, lightning hit tree and traveled into house, damaging electrical system	3/9/2023 1:37 PM
8	Trees falling, high winds	3/9/2023 6:24 AM
9	We had severe rain and driving winds and our basement floor had water soaked through the concrete foundation; this was in the past year. About 3-4 years ago, we had an earthquake which caused some cracking in our house walls and shifting so the interior doors didn't close correctly anymore.	2/15/2023 1:01 PM
10	Sewer backup flooded into basement after a storm event.	1/12/2023 1:05 PM
11	I did have some flooding from a recent severe rain storm and my contractor was able to fix the roof issue that happened due to severe rain and then immediate 40 mph winds.	1/8/2023 4:40 PM
12	Basement flooded	12/20/2022 1:35 PM
13	Basement flood caused furnace outage and resulted in frozen pipes	12/14/2022 7:24 AM

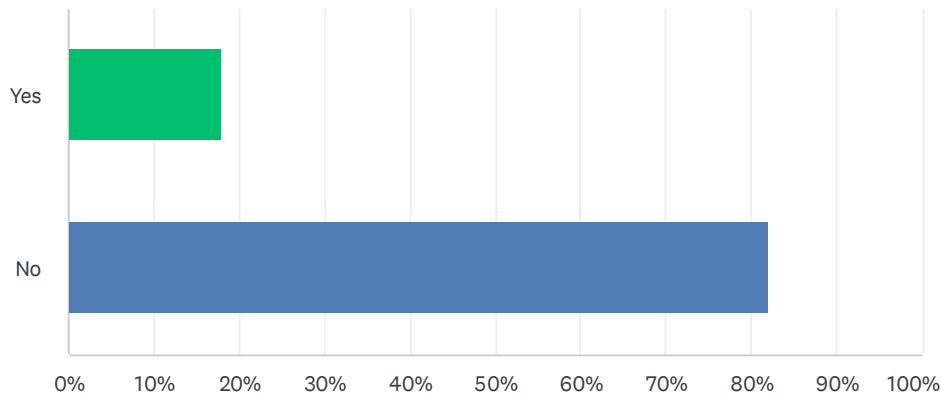


# Warren County Hazard Mitigation Plan Update - Public Survey

14	Basement in home flooded from ice storm causing flooring and walls needing to be replaced.	12/12/2022 12:02 PM
15	Due to the constant flooding from climate change and no longer just the spring thaw my basement floors have cracked and pieces of the concrete flooring are eroding/chipping and white mold has appeared	12/12/2022 9:31 AM
16	There's a county storm drain underneath Brook St, in the town of Bolton, that shoots huge volumes of water onto three other properties including mine, with it, we receive rocks, raw sewage, sand, glass, soil from upstream tributaries, and road debris. This is in addition to the widened culvert drain pipe running under Brook and Stewart Ave.	12/11/2022 5:05 PM
17	My garage is sinking because Warren County raised the road ~5 feet at the brook so my garage is now the lowest point on North Bolton Road at the foot of Church Hill Road. This resulted in NO drainage from the west side to east side of the road, almost no drainage north-to-south from garage to brook. This causes flooding in the road (as well as my former garden area and my garage foundation) all spring and summer AND ice all winter across North Bolton Road. Repeated requests for drainage solutions have been repulsed.	12/11/2022 10:06 AM
18	Storm drainage system failure in 30" CMP, caused wash out and beach failure. From the washout silts and stones washed into lake George causing a delta of sand and stone and asphalt	12/11/2022 7:50 AM
19	Basement flood	12/10/2022 2:31 PM
20	high winds have caused tree branches to come down and hit the house; roof shingle damage	12/10/2022 11:36 AM
21	Roof damage and leak from strong wind thunderstorm resulted in interior damage	12/10/2022 7:27 AM
22	Broken sewer line backed up into the basement with sewer gas fumes into my HVAC floor vents a few months ago. I developed both polycythemia and obstructive sleep apnea that may be related to previously diagnosed rare autoimmune neuromuscular disease OR the sewer line may have contributed	12/9/2022 9:35 PM
23	Tree fell on house in high wind - 2016 & 2022 Crawl space flooded - 2011	12/9/2022 8:50 PM
24	hot water heater	12/9/2022 4:50 PM
25	Hail storm. House roof had to be replaced. Additionally, car needed major (auto body) repair.	12/9/2022 2:14 PM
26	Severe thunderstorms, roof damage.	12/6/2022 10:16 AM

Q5 If you answered 'yes' above, did you report the damages to your local police or fire departments or to an emergency management agency?

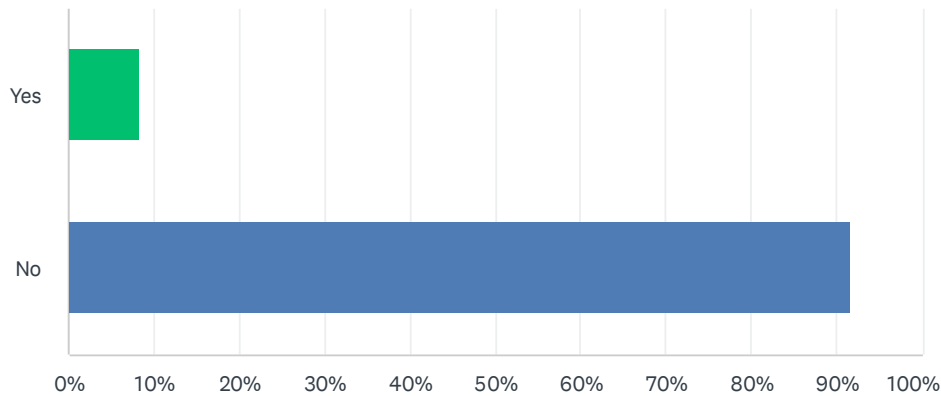
Answered: 56 Skipped: 34



ANSWER CHOICES	RESPONSES	
Yes	17.86%	10
No	82.14%	46
TOTAL		56

Q6 To the best of your knowledge, is your property located in a designated floodplain? If you do not know, click here to find out.

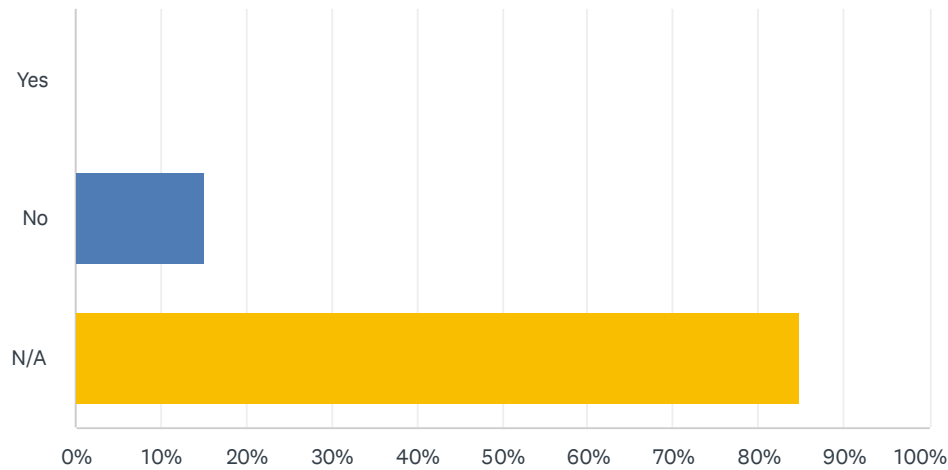
Answered: 85    Skipped: 5



ANSWER CHOICES	RESPONSES	
Yes	8.24%	7
No	91.76%	78
TOTAL		85

Q7 If your property is in the floodplain, do you have flood insurance?

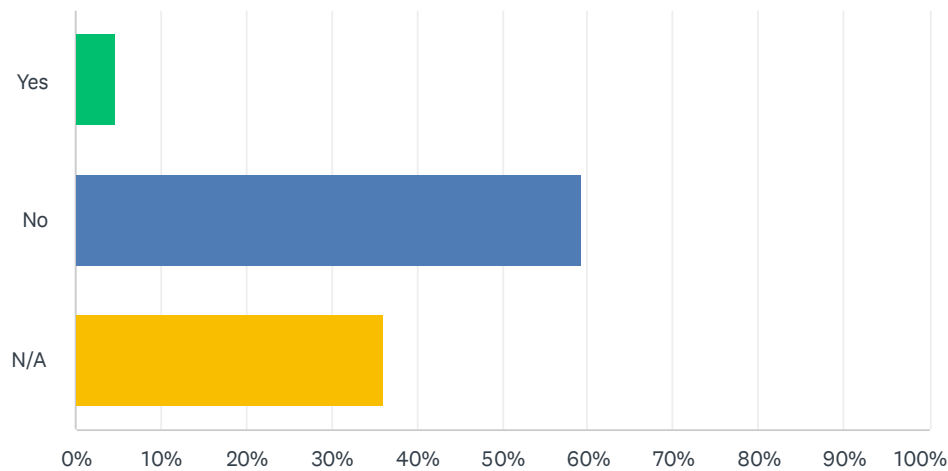
Answered: 79    Skipped: 11



ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		15.19%	12
N/A		84.81%	67
TOTAL			79

Q8 If your property is located outside of the floodplain, do you have flood insurance?

Answered: 86    Skipped: 4



ANSWER CHOICES	RESPONSES	
Yes	4.65%	4
No	59.30%	51
N/A	36.05%	31
TOTAL		86



**Q9 Please identify any specific vulnerabilities that you are aware of in your city/town/village (e.g. floodprone areas or specific properties, critical facilities that lack backup power, etc.). Please list street names and other specific identifiers if possible.**

Answered: 45 Skipped: 45

#	RESPONSES	DATE
1	All of Warren County is susceptible to air quality dangers, as recently experienced from the Canadian Wildfires. The Hazard Mitigation plan is critically deficient regarding this danger.	8/2/2023 8:29 AM
2	13th Lake Road, North River, NY - 1st mile gabion wall.	7/14/2023 12:32 PM
3	The above-ground electric poles along Bloody Pond Road (and elsewhere in LG) are prone to outages due to wind and snow. Buried lines would be safer.	7/13/2023 9:23 AM
4	Thurman Bridge Spring Ice Jam 418	7/13/2023 8:02 AM
5	Stormwater washing out roads	7/12/2023 4:33 PM
6	Glens Falls watershed dams had concerns. Stormwater basins frequently overflow in Queensbury	7/11/2023 2:18 PM
7	Pine Tree Lane Diamond Point Always having power outages when others don't. They can last up to four days.	3/11/2023 10:56 AM
8	lack of back up power	3/11/2023 8:36 AM
9	Loon Lake Dam Failure. Power outages due to lack of appropriate tree removal along power lines.	3/11/2023 7:01 AM
10	Poor cell service. Lake Luzerne	3/10/2023 8:44 PM
11	Queensbury boat launch, Glen Lake, Lake George, Hudson	3/10/2023 7:45 PM
12	Susceptibility to flooding, poorly maintained dams owned by city of Glens Falls.	3/9/2023 1:38 PM
13	Schools lack of back up power in the event power goes out and lack heating elements. Trees along residential roads that aren't cut back. Power drainage on road ways.	3/9/2023 6:32 AM
14	I only work in Warren County; I live in Saratoga County. I don't believe this question is applicable to me.	2/24/2023 8:55 AM
15	prone to power outages from trees on lines	2/16/2023 2:05 PM
16	general back-up power, snow/ice blockage on highways	2/15/2023 1:58 PM
17	Floodprone area on Meadowbrook Road @ Halfway Brook	2/15/2023 1:34 PM
18	low water levels in kattskill bay lake george due to water management practices	2/15/2023 1:33 PM
19	None that I'm	2/15/2023 12:41 PM
20	n/a	2/15/2023 12:40 PM
21	None known	1/15/2023 10:53 PM
22	Apartment building for disabled and retired with all electric heat. No on demand generator. Located at 10 Manor Rd.	1/13/2023 2:03 PM
23	13th Lake Road, North River. The gabion walls are pushed out and look like they will give at any time. Also rocks fall in the middle of the road all the time.	1/12/2023 3:57 PM
24	Flooding - 9N S/Hidden Valley Drive (Tubby Tubes-Lake Luzerne, NY 12846), due to a sewer	1/8/2023 4:44 PM

## Warren County Hazard Mitigation Plan Update - Public Survey

drain that doesn't handle all the water, causing back up and ice/danger in winter. Trees down in my property from recent high winds (1275 Lake Avenue, Lake Luzerne, 12846)

25	Water Tank control panel without power backup	12/27/2022 7:07 AM
26	None	12/23/2022 3:24 PM
27	Ice jamming on Hudson River at 418 Bridge. Flooding on River Road	12/21/2022 10:22 AM
28	See initial list of environmental threats experienced in this region	12/14/2022 3:47 PM
29	Lake George sewage treatment plant has minimal security and is vulnerable to walk up attacks on infrastructure.	12/14/2022 7:27 AM
30	None	12/14/2022 6:49 AM
31	Numerous roads and stream crossings could be subject to flood/storm damage.	12/14/2022 6:03 AM
32	East End in Glens Falls is known for being a high water table area	12/12/2022 9:33 AM
33	North Bolton Road at the foot of Church Hill Road is continually flooded due to the road having been raised several years ago. Raising the road removed all drainage possibilities and County officials refuse to do anything to correct the problem.	12/11/2022 10:09 AM
34	Storm Drainage system that runs down the Lakeview Circle drive in the town of lake George and crosses Lake Shore Dr in the town of lake George and continues down to the lakefront between the Fairview Improvement association property and the lake view terrace property.	12/11/2022 8:00 AM
35	Lack of municipal sewer and water	12/10/2022 2:32 PM
36	na	12/10/2022 11:49 AM
37	poor drainage for city streets (most streets in Glens Falls); raw sewage releases into the Hudson River (sometimes even if it only rains briefly); Poor tree maintenance causes downed branches in the high winds we now get for many months of the year.	12/10/2022 11:44 AM
38	My road is collapsing into a stream. Many dead trees along the road. So called protected land around the watershed is not protected or monitored	12/10/2022 8:22 AM
39	C/Glens Falls flood prone streets. Warren St, Mohican St, CR 19 T/Chester. SR 418 bridge & River Rd, Barton Mines RD Johnsburg	12/10/2022 7:39 AM
40	Loon Lake Dam, Rt 8/9, Chestertown	12/10/2022 6:57 AM
41	ZERO fragrance-free emergency shelters! Acute respiratory response / reactive airways when exposed for perfumes, scented products (ubiquitous), etc. ALSO: FEMA Flood Map makes ZERO sense! Unable to determine if my address is - or is not - in a flood plain: Fredella Avenue, Glens Falls, NY.	12/9/2022 9:47 PM
42	Hudson River Basin Lake Luzerne to Corinth	12/9/2022 8:54 PM
43	We have experienced power outages for as lengthy as 5 days. being on a deep well, the outage not only effects our lights and heat, but water as well.	12/9/2022 7:25 PM
44	Electric	12/9/2022 12:13 PM
45	Glens Falls dams on West Mountain	12/9/2022 9:03 AM

**Q10 Please identify any specific vulnerable areas outside of your city/town/village (e.g. flood-prone areas or specific properties, critical facilities that lack backup power, etc.). Please list the city/town/village, street names, and other specific identifiers if possible.**

Answered: 33 Skipped: 57

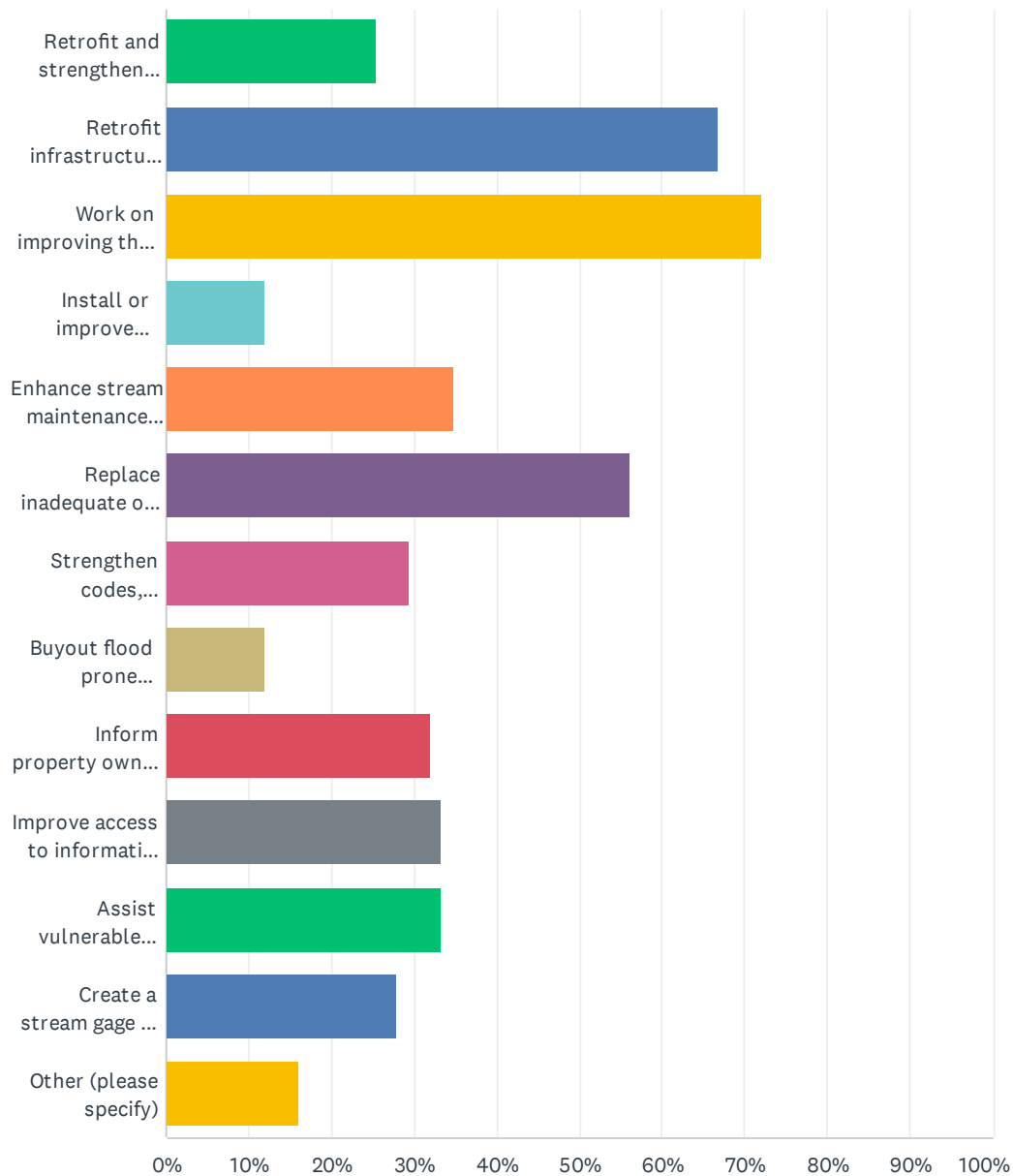
#	RESPONSES	DATE
1	n/a	8/2/2023 8:29 AM
2	n/a	7/13/2023 9:23 AM
3	Post office is located on Number 9 Brook.	7/13/2023 8:14 AM
4	Hague Brook flooding	7/12/2023 4:33 PM
5	Schroon and Hudson Rivers flooding	7/11/2023 2:18 PM
6	Federal Hill Rd	3/11/2023 8:36 AM
7	See above	3/10/2023 7:45 PM
8	Areas along Hudson River and Schroon River are flooded frequently	3/9/2023 1:38 PM
9	Lack of internet service in rural areas.	3/9/2023 6:32 AM
10	I only work in Warren County. I live in Saratoga County.	2/24/2023 8:55 AM
11	Queensbury - Halfway Brook Area/flooding Warrensburg - Schroon River Area/flooding Chester&Horicon - Schroon River Area/flooding	2/16/2023 2:05 PM
12	same	2/15/2023 1:58 PM
13	na	2/15/2023 1:33 PM
14	None that I'm aware of	2/15/2023 12:41 PM
15	n/a	2/15/2023 12:40 PM
16	Unknown	1/15/2023 10:53 PM
17	None I can think of	1/13/2023 2:03 PM
18	Meadowbrook rd, Qby - Flooding	1/12/2023 1:24 PM
19	Unsure.	1/8/2023 4:44 PM
20	None	12/23/2022 3:24 PM
21	Unaware	12/14/2022 3:47 PM
22	None.	12/14/2022 7:27 AM
23	None	12/14/2022 6:49 AM
24	None known of	12/11/2022 10:09 AM
25	Lakeview Circle Drive Town of Lake George	12/11/2022 8:00 AM
26	na	12/10/2022 11:49 AM
27	don't know.	12/10/2022 11:44 AM
28	GFWWTP releasing sewage into Hudson after every heavy rainstorm. Inadequate storm drainage on streets	12/9/2022 10:31 PM

## Warren County Hazard Mitigation Plan Update - Public Survey

29	Still ZERO fragrance-free emergency shelters - I would not be able to survive in an emergency shelter due to respiratory distress when exposed to fragranced / scented products (body, laundry, cleaning, etc.)	12/9/2022 9:47 PM
30	Power cybersecurity concern	12/9/2022 8:10 PM
31	Flooding of the Hudson River in the spring occasionally that affects the State rt. 28 between North Creek and North River, and includes part of the town North Creek at the train station where Teddy Roosevelt learned McKinley had died from his wound, and he was now President. The historic Train station has been preserved, but flooding of the Hudson in the spring has caused concern a number of years in the past ten.	12/9/2022 7:25 PM
32	Thurman bridge	12/9/2022 12:13 PM
33	Downtown Warrensburg from Schroon River flooding	12/9/2022 9:03 AM

# Q11 What types of projects do you believe local, county, state, or federal government agencies could be doing to reduce the damage and disruption of disasters in Warren County? Select your top three choices.

Answered: 75 Skipped: 15



# Warren County Hazard Mitigation Plan Update - Public Survey

ANSWER CHOICES	RESPONSES	
Retrofit and strengthen essential facilities such as police, schools, and hospitals	25.33%	19
Retrofit infrastructure, such as elevating roadways and improving drainage systems	66.67%	50
Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities etc.)	72.00%	54
Install or improve protective structures, such as floodwalls, levees, bulkheads, and firebreaks	12.00%	9
Enhance stream maintenance programs/projects	34.67%	26
Replace inadequate or vulnerable bridges and causeways	56.00%	42
Strengthen codes, ordinances and plans to require higher hazard risk management standards and/or provide greater control over development in high hazard areas	29.33%	22
Buyout flood prone properties and maintain as open space	12.00%	9
Inform property owners of ways they can mitigate damage to their properties	32.00%	24
Improve access to information about hazard risks and high-hazard areas	33.33%	25
Assist vulnerable property owners with securing funding to mitigate their properties	33.33%	25
Create a stream gage and weather monitoring program to provide more accurate data and warnings	28.00%	21
Other (please specify)	16.00%	12
Total Respondents: 75		

#	OTHER (PLEASE SPECIFY)	DATE
1	Install PurpleAir air monitoring sensors in the Northern & Western areas of Warren County to improve the Air Quality Forecasts provided by the EPA and NYS DEC.	8/2/2023 8:29 AM
2	Require power companies to be more proactive in maintain power lines from tree damage, put power source lines underground	3/11/2023 8:36 AM
3	Underground utilities!	3/10/2023 7:45 PM
4	Burying utilities and power lines to prevent damage from storms, and accidents	3/9/2023 6:32 AM
5	Encourage all property owners to assist with capturing & infiltrating stormwater.	1/12/2023 1:24 PM
6	I think some of the projects listed here are already being mitigated/worked on.	1/8/2023 4:44 PM
7	None	12/14/2022 6:49 AM
8	Retrofit infrastructure by LOWERING North Bolton Road at the foot of Church Hill Road to where it was years ago when drainage was NEVER A PROBLEM.	12/11/2022 10:09 AM
9	Infrastructure improvements drainage	12/11/2022 8:00 AM
10	Assist utilities in ROW acquisition on bridge projects and to support new critical ethic redundancy projects	12/10/2022 7:39 AM
11	emergency preparedness training for natural disasters for citizens, and in schools	12/9/2022 10:31 PM
12	Ensure town's have emergency plans and backup or mobile power	12/9/2022 2:25 PM



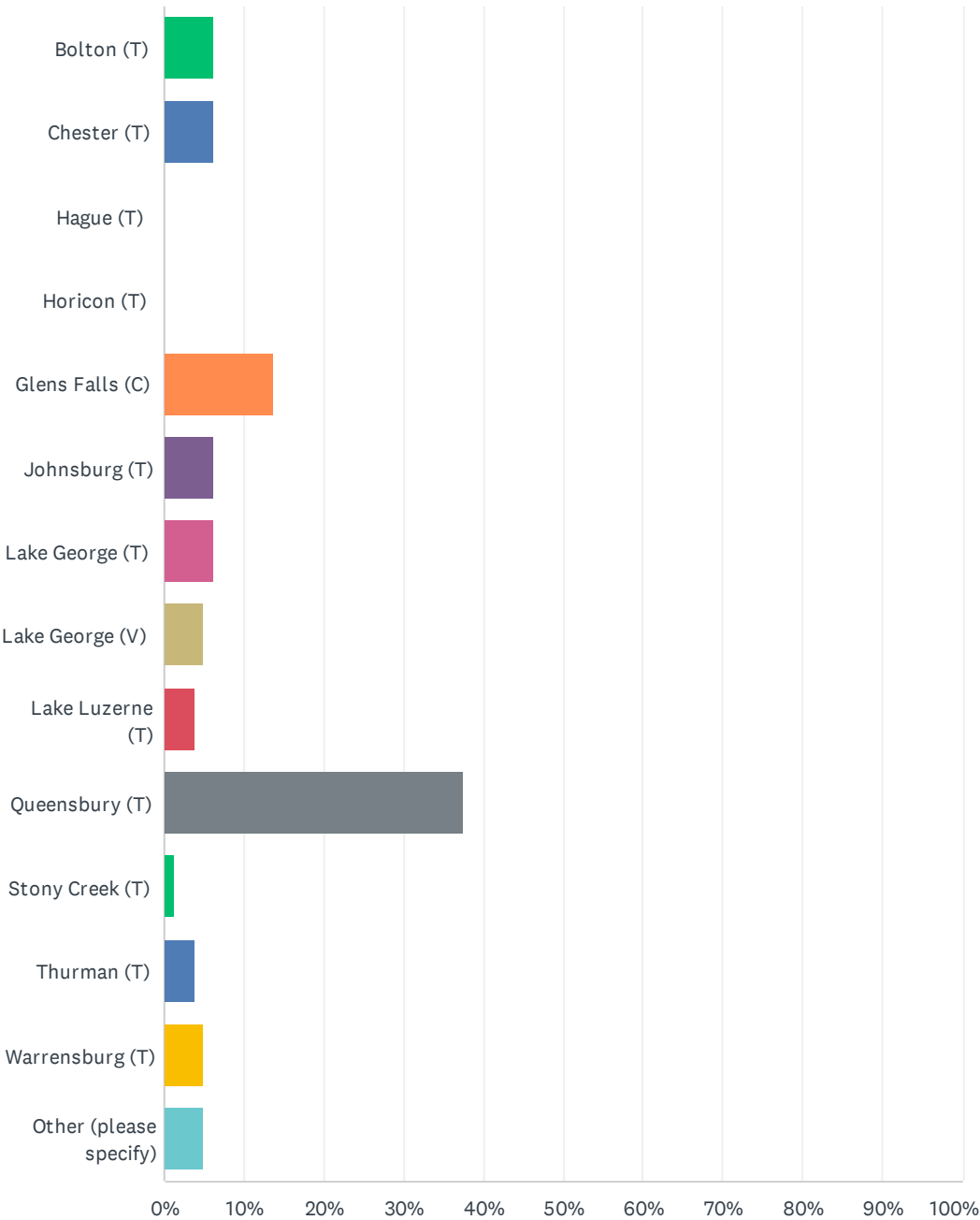
## Q12 Do you have any other comments, questions, or concerns regarding hazard mitigation in Warren County?

Answered: 23    Skipped: 67

#	RESPONSES	DATE
1	Air Quality emergencies must be incorporated into this hazard mitigation plan. This plan is critically deficient without this obvious hazard.	8/2/2023 8:29 AM
2	Inadequate shelters in case of emergencies	3/11/2023 7:01 AM
3	Use the health Dept	3/10/2023 7:45 PM
4	no	3/9/2023 1:38 PM
5	no	2/24/2023 8:55 AM
6	no, thanks	2/15/2023 1:58 PM
7	remove tree limbs that hang over the 9L road before someone gets seriously injured	2/15/2023 1:33 PM
8	I see climate change as one of the biggest concerns now and in the future that could and would impact a lot of weather related hazard events. I think more projects that focus on taking care of our environment, like adopt a highway and stream clean up days, as a good thing to consider.	2/15/2023 12:41 PM
9	No	1/13/2023 2:03 PM
10	Looking forward to the outcomes of these surveys.	1/8/2023 4:44 PM
11	Nope	12/23/2022 3:24 PM
12	I would appreciate receiving real time alerts from Warren County similarly to FEMA	12/14/2022 3:47 PM
13	The area looks pretty safe to me!!!....JMO	12/14/2022 6:49 AM
14	Each municipal government should be required to participate in this process. They should assess their community for potential hazards and develop a mitigation plan.	12/14/2022 6:03 AM
15	Warren County needs to fix the drainage issue it CAUSED.	12/11/2022 10:09 AM
16	Funding	12/11/2022 8:00 AM
17	I see that climate change is affecting us. One problem that we never experienced until recent years is algae blooms.	12/10/2022 11:49 AM
18	Until now, I've never heard of it.	12/10/2022 8:22 AM
19	No	12/10/2022 6:57 AM
20	Annual preparedness training at senior centers, at schools and in locations that citizens are encouraged to attend. create a citizen team to work with Emergency Management for Warren County	12/9/2022 10:31 PM
21	Vastly improve ACCESSIBILITY for disabled people and Disaster Planning to include INPUT from disabled people with various disabilities; including respiratory	12/9/2022 9:47 PM
22	during severe winter storms, county buildings need to close or open late as employees travel long distances to get to Warren County Municipal Center and should not have to use personal time in case of extreme weather.	12/9/2022 4:54 PM
23	Extreme weather (heavy downpours and sudden storms) have increased greatly. Review of runoff areas should be reviewed.	12/9/2022 2:25 PM

Q13 Please indicate the municipality in which you live:

Answered: 80    Skipped: 10



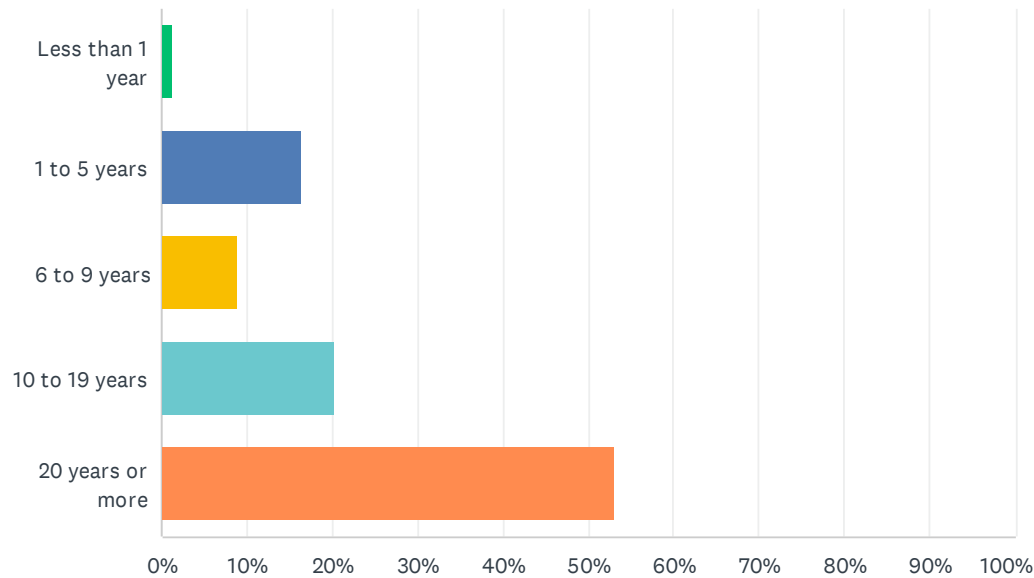
# Warren County Hazard Mitigation Plan Update - Public Survey

ANSWER CHOICES	RESPONSES	
Bolton (T)	6.25%	5
Chester (T)	6.25%	5
Hague (T)	0.00%	0
Horicon (T)	0.00%	0
Glens Falls (C)	13.75%	11
Johnsburg (T)	6.25%	5
Lake George (T)	6.25%	5
Lake George (V)	5.00%	4
Lake Luzerne (T)	3.75%	3
Queensbury (T)	37.50%	30
Stony Creek (T)	1.25%	1
Thurman (T)	3.75%	3
Warrensburg (T)	5.00%	4
Other (please specify)	5.00%	4
Total Respondents: 80		

#	OTHER (PLEASE SPECIFY)	DATE
1	live outside Warren County in Ticonderoga but work in Hague	7/12/2023 4:35 PM
2	Hadley	3/15/2023 8:42 AM
3	Corinth	2/24/2023 8:56 AM
4	Ticonderoga, but work in Queensbury	2/15/2023 1:34 PM

Q14 How long have you lived here?

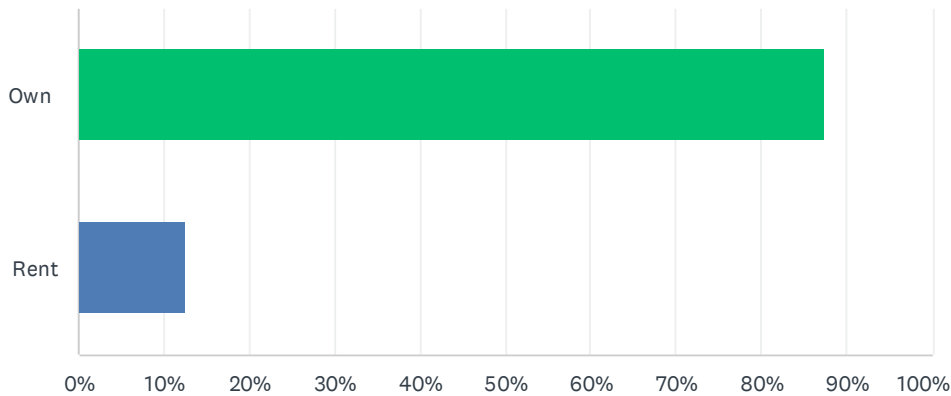
Answered: 79    Skipped: 11



ANSWER CHOICES		RESPONSES	
Less than 1 year		1.27%	1
1 to 5 years		16.46%	13
6 to 9 years		8.86%	7
10 to 19 years		20.25%	16
20 years or more		53.16%	42
TOTAL			79

Q15 Do you own or rent your place of residence?

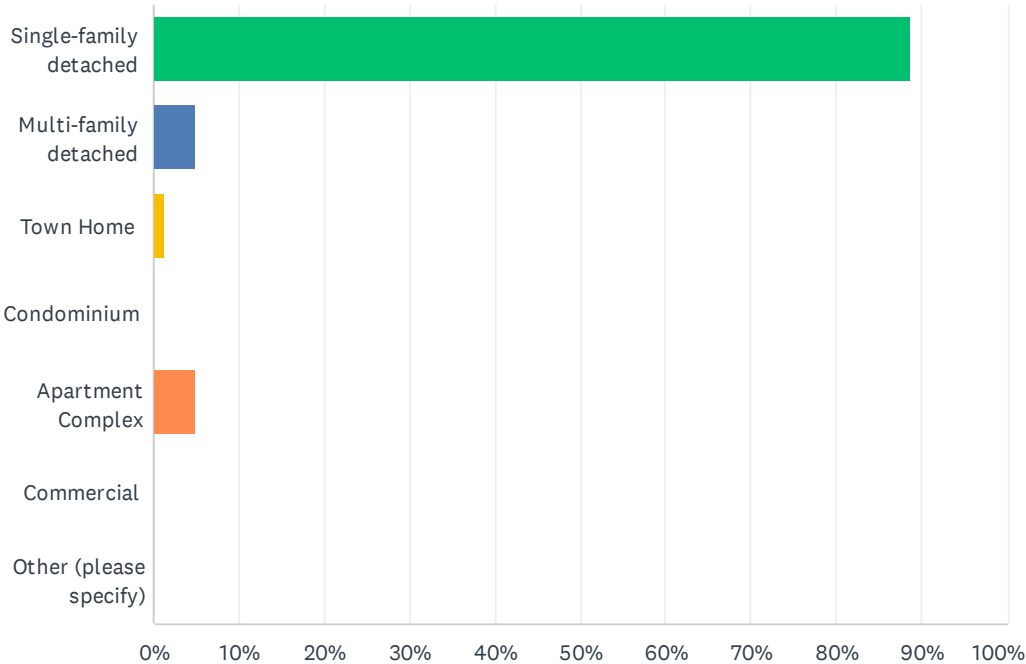
Answered: 80    Skipped: 10



ANSWER CHOICES	RESPONSES	
Own	87.50%	70
Rent	12.50%	10
TOTAL		80

Q16 What type of residence do you live in?

Answered: 80    Skipped: 10



ANSWER CHOICES		RESPONSES	
Single-family detached		88.75%	71
Multi-family detached		5.00%	4
Town Home		1.25%	1
Condominium		0.00%	0
Apartment Complex		5.00%	4
Commercial		0.00%	0
Other (please specify)		0.00%	0
TOTAL			80

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	



Q17 What is the address of your property? (optional, will be kept confidential - only used to identify hazard areas such as flooding)

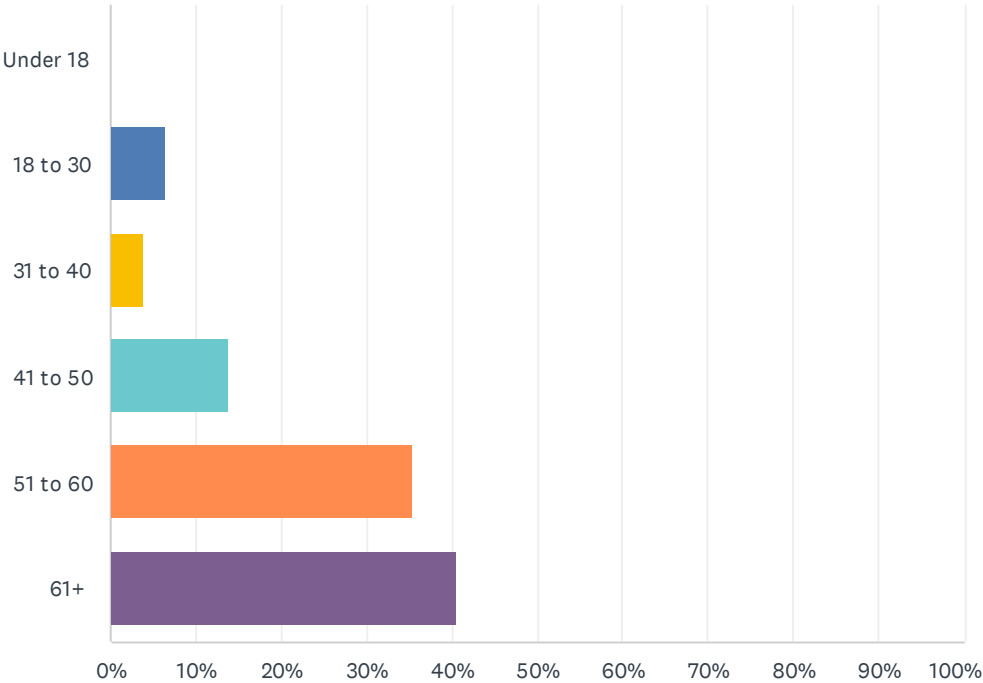
Answered: 40    Skipped: 50

#	RESPONSES	
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Q18 Please indicate your age range:

Answered: 79    Skipped: 11



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18 to 30	6.33%	5
31 to 40	3.80%	3
41 to 50	13.92%	11
51 to 60	35.44%	28
61+	40.51%	32
TOTAL		79



## D.2 STAKEHOLDER SURVEYS

In addition to collecting information from residents of Warren County, surveys were developed for the agencies and stakeholders in the county. Unlike steering committee or planning partnership members, stakeholders may not be involved in all stages of the planning process, but they may have information or input to provide. In order to gather that information, the surveys were sent to the following stakeholders: law enforcement, firefighters, emergency medical services, highway and public works, business and commerce, hospitals and health care providers, and utilities. Results of the surveys are provided in the following pages, with personal information redacted.

## Q1 Name of your department/office/institution

Answered: 15 Skipped: 0

#	RESPONSES	DATE
1	Glens Falls City School District	7/24/2023 2:55 PM
2	Warren/Hamilton Counties OFA	7/13/2023 3:09 PM
3	Silver Bay YMCA	7/13/2023 1:18 PM
4	Glens Falls Police Department	7/13/2023 11:05 AM
5	Center for Disability Services , Prospect School	7/13/2023 7:36 AM
6	Warren County Parks Recreation & Railroad	7/13/2023 7:22 AM
7	National Grid	1/18/2023 8:39 AM
8	WARREN COUNTY HEALTH SERVICES	1/9/2023 10:39 AM
9	NYS Department of Health Glens Falls District Office	1/9/2023 9:28 AM
10	Lake George Regional Chamber of Commerce & CVB	1/8/2023 4:26 PM
11	Southern Adirondack Independent Living	1/6/2023 8:13 AM
12	Health Services	1/6/2023 8:08 AM
13	Glens Falls Hospital	1/5/2023 4:55 PM
14	Greater Glens Falls Transit	1/5/2023 4:26 PM
15	Glens Falls common council	12/14/2022 7:26 PM

## Q2 Name of Respondent

Answered: 15   Skipped: 0

#	RESPONSES	DATE
1		
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### Q3 What is your position/title/role with your department/office/institution?

Answered: 15 Skipped: 0

#	RESPONSES	DATE
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## Q4 Please provide your contact information.

Answered: 15 Skipped: 0

ANSWER CHOICES	RESPONSES	
Name	0.00%	0
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	15
Phone Number	93.33%	14

#	NAME	DATE
---	------	------

There are no responses.

#	COMPANY	DATE
---	---------	------

There are no responses.

#	ADDRESS	DATE
---	---------	------

There are no responses.

#	ADDRESS 2	DATE
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There are no responses.

#	CITY/TOWN	DATE
---	-----------	------

There are no responses.

#	STATE/PROVINCE	DATE
---	----------------	------

There are no responses.

#	ZIP/POSTAL CODE	DATE
---	-----------------	------

There are no responses.

#	COUNTRY	DATE
---	---------	------

There are no responses.

#	EMAIL ADDRESS	DATE
---	---------------	------

1

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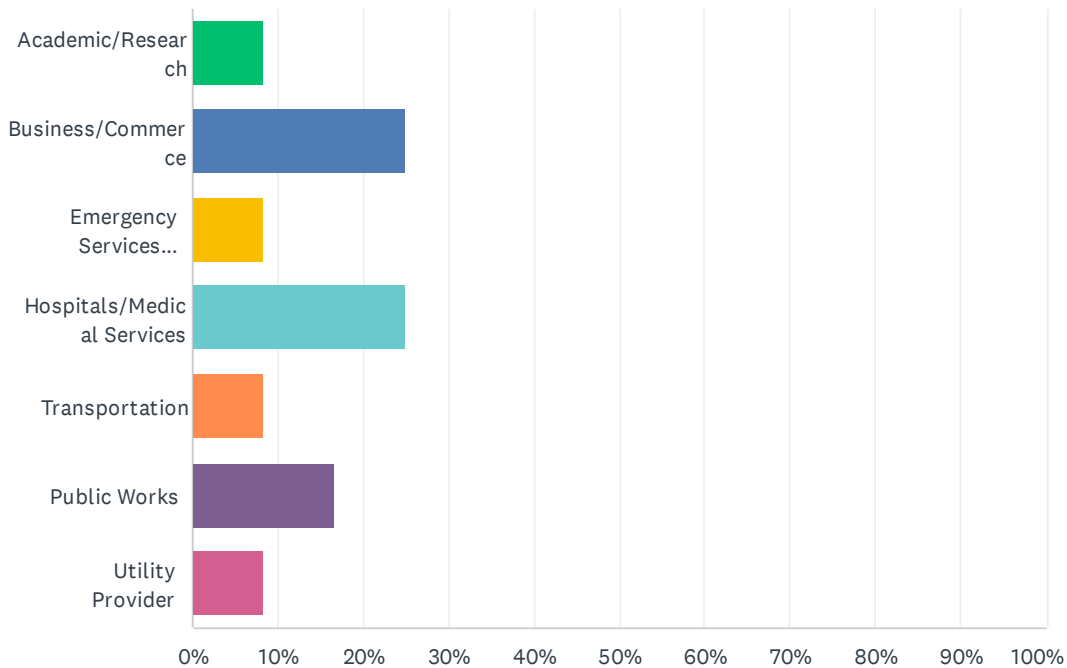
5

## Warren County Hazard Mitigation Plan - Stakeholder Survey

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## Q5 What category does your facility operation/service fall under?

Answered: 12 Skipped: 3



ANSWER CHOICES	RESPONSES	
Academic/Research	8.33%	1
Business/Commerce	25.00%	3
Emergency Services (police, fire, EMS)	8.33%	1
Hospitals/Medical Services	25.00%	3
Transportation	8.33%	1
Public Works	16.67%	2
Utility Provider	8.33%	1
<b>TOTAL</b>		<b>12</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	School	7/13/2023 7:38 AM
2	Environmental Health	1/9/2023 9:32 AM
3	We work with more than 460 hospitality focused businesses to ensure our economic vitality throughout Warren County and beyond. We also promote Warren County as the destination of choice for group (business/association/bus tours/reunions/weddings) business. Lastly, we operate the Adirondacks Welcome Center TasteNY / Tourism programs.	1/8/2023 4:30 PM
4	Local Health Department	1/6/2023 8:18 AM

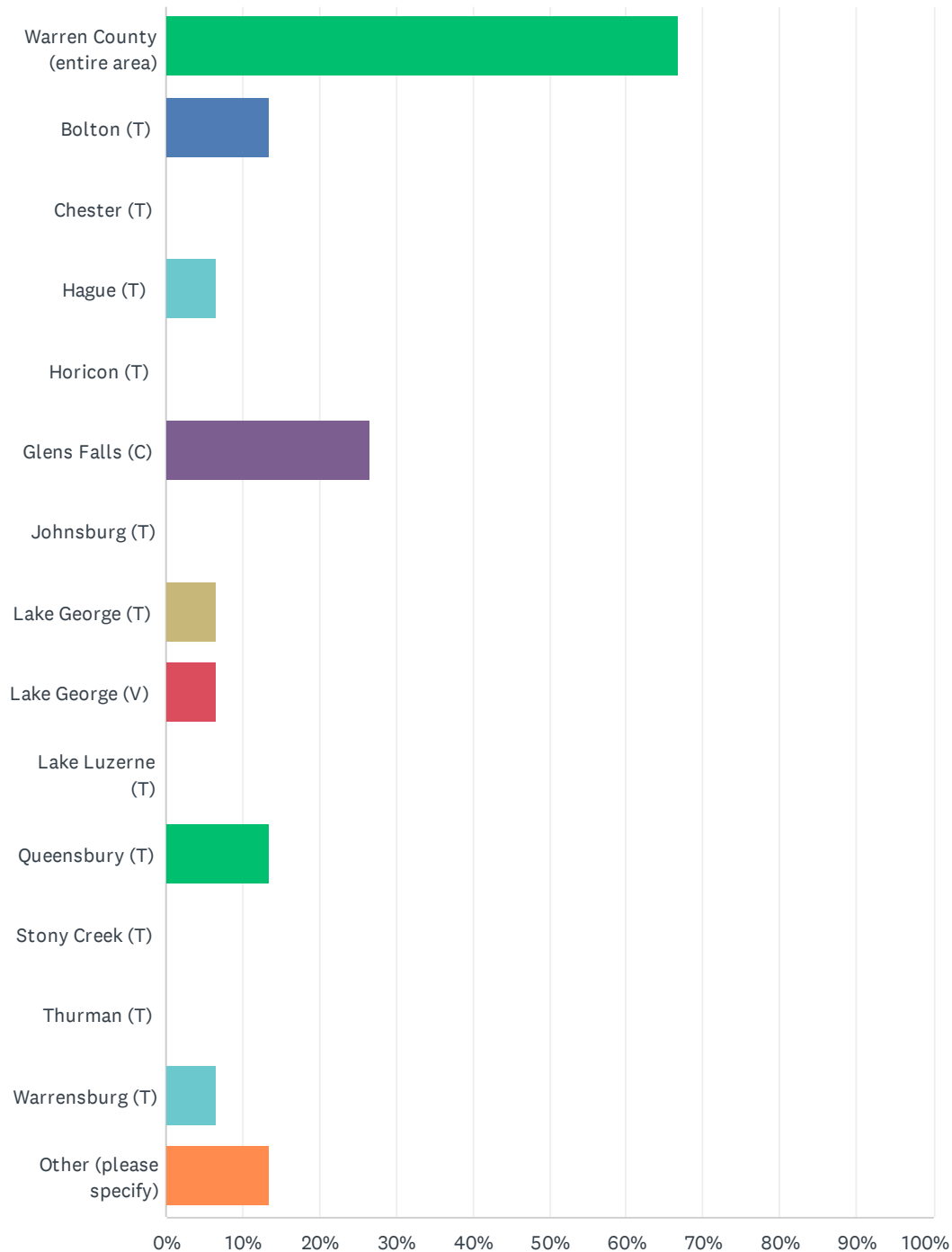
## Q6 Based on the above category, please provide additional description and information as to what your organization does or offers (please explain)

Answered: 14 Skipped: 1

#	RESPONSES	DATE
1	Public School	7/24/2023 2:58 PM
2	Office for the Aging - provide assistance to seniors	7/13/2023 3:11 PM
3	YMCA Family Retreat and Conference Center offers lodging, hospitality services, meals, programs and indoor and outdoor recreation to visitors and community members.	7/13/2023 1:21 PM
4	Police	7/13/2023 11:06 AM
5	We provide educational services for school age children	7/13/2023 7:38 AM
6	We manage and maintain the Warren County Fish Hatchery, Bikeway, Fairgrounds, Canoe access sites and Up Yonda Farm Environmental Education Center	7/13/2023 7:27 AM
7	Electricity and Natural Gas Utility.	1/18/2023 8:41 AM
8	MEDICAL ASSITANCE TO THE ILL AND ELDERLY, VACCINATIONS, RABIES CLINICS	1/9/2023 10:40 AM
9	Provide environmental health oversight of facilities permitted and regulated by our office.	1/9/2023 9:32 AM
10	We offer information outreach, tourism marketing/promotional activities, direct contact with visitors and community partners.	1/8/2023 4:30 PM
11	we are responsible for completing the requirements of NYSDOH Article 6 General Public Health Work Program which includes completing a Community Health Assessment & Improvement Plann every 3 years, chronic disease prevention (CVD, cancer, diabetes, obesity, tobacco prevention), communicable disease surveillance and control, vector borne disease monitoring and control, rabies control, lead poisoning prevention, and family health. In addition to the Article 6 programs we are also responsible for public health emergency preparedness planning which includes pandemic planning and response, isolation and quarantine protocols, medical countermeasures distribution and dispensing, participation in mass shelter/casualty/fatality planning and more.	1/6/2023 8:18 AM
12	SAIL is a non-profit organization that helps people live more independently through an array of programs and services.	1/6/2023 8:14 AM
13	Operates public transportation services in Glens Falls, Queensbury, Lake George (T & V), Bolton	1/5/2023 4:28 PM
14	Legislative	12/14/2022 7:27 PM

**Q7 Please identify the location of your facility(ies) and/ or primary service area. You may choose more than one if your service area covers multiple communities, or “Warren County (entire area) ” if your service area is county-wide:**

Answered: 15 Skipped: 0





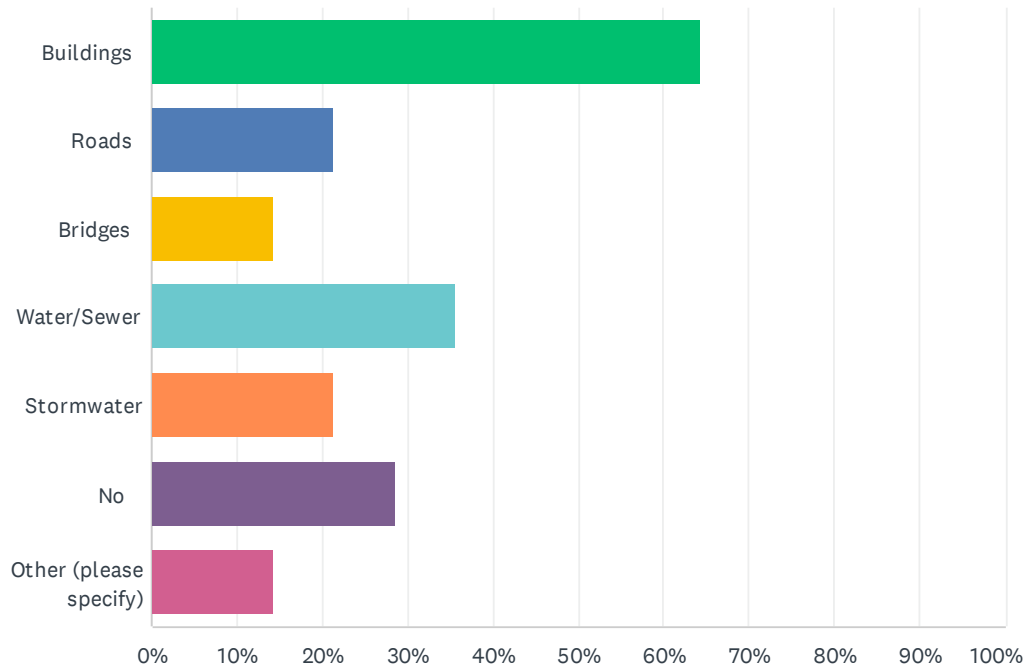
# Warren County Hazard Mitigation Plan - Stakeholder Survey

ANSWER CHOICES	RESPONSES	
Warren County (entire area)	66.67%	10
Bolton (T)	13.33%	2
Chester (T)	0.00%	0
Hague (T)	6.67%	1
Horicon (T)	0.00%	0
Glens Falls (C)	26.67%	4
Johnsburg (T)	0.00%	0
Lake George (T)	6.67%	1
Lake George (V)	6.67%	1
Lake Luzerne (T)	0.00%	0
Queensbury (T)	13.33%	2
Stony Creek (T)	0.00%	0
Thurman (T)	0.00%	0
Warrensburg (T)	6.67%	1
Other (please specify)	13.33%	2
Total Respondents: 15		

#	OTHER (PLEASE SPECIFY)	DATE
1	Hamilton County	7/13/2023 3:11 PM
2	Other partners throughout the Adirondacks as well as statewide.	1/8/2023 4:30 PM

**Q8 Does your organization maintain or manage any of the following within your designated service area? If not, answer “No” at the bottom, otherwise check all that apply.**

Answered: 14 Skipped: 1

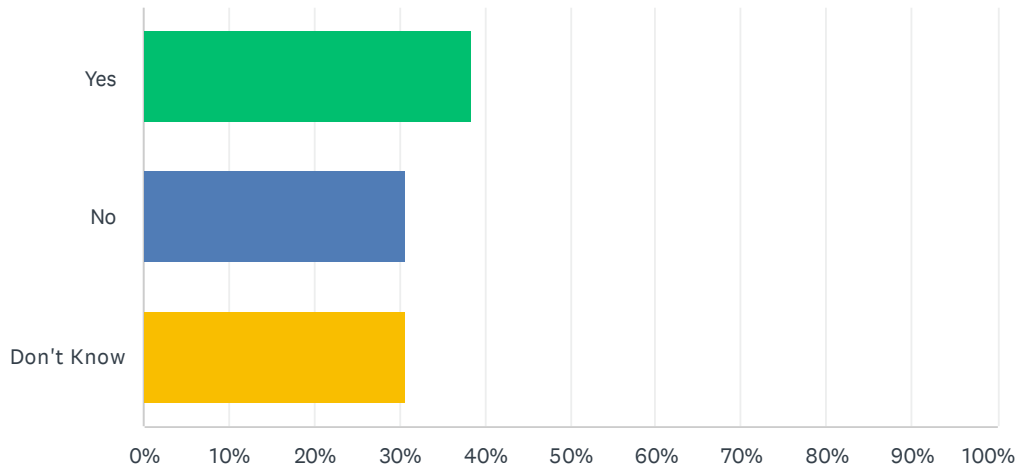


ANSWER CHOICES	RESPONSES
Buildings	64.29% 9
Roads	21.43% 3
Bridges	14.29% 2
Water/Sewer	35.71% 5
Stormwater	21.43% 3
No	28.57% 4
Other (please specify)	14.29% 2
Total Respondents: 14	

#	OTHER (PLEASE SPECIFY)	DATE
1	Bikeway path	7/13/2023 7:27 AM
2	Utility Poles, pipelines, underground electric distribution facilities.	1/18/2023 8:41 AM

**Q9 Looking back at previous hazard events, have buildings/facilities/structures you have worked in and/ or are responsible for been impacted by a hazard (ex. damage/closures/etc.)?**

Answered: 13 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	38.46%	5
No	30.77%	4
Don't Know	30.77%	4
TOTAL		13

Q10 If you answered “Yes” to the above question, please describe the event that caused or is causing (if recurring) damage and loss of service/ property. If quantifiable data is available, please provide that as well (number of damaged structures, monetary loss, etc.) (please explain)

Answered: 7   Skipped: 8

#	RESPONSES	DATE
1	Sewage back up in Middle School when storm water was visible in the streets (not draining).	7/24/2023 3:08 PM
2	Road Closure; Power Outages; Telephone Outages	7/13/2023 3:13 PM
3	Significant rain event washed out road	7/13/2023 1:25 PM
4	Flooding and tree hazards along bikeway. Power outages at Up Yonda Farm, flooding at the Fish Hatchery. Blocked culverts on railroad, due to beaver activity.	7/13/2023 7:35 AM
5	N/A	1/9/2023 9:32 AM
6	Fire in the municipal center	1/6/2023 8:22 AM
7	NA	1/5/2023 4:30 PM

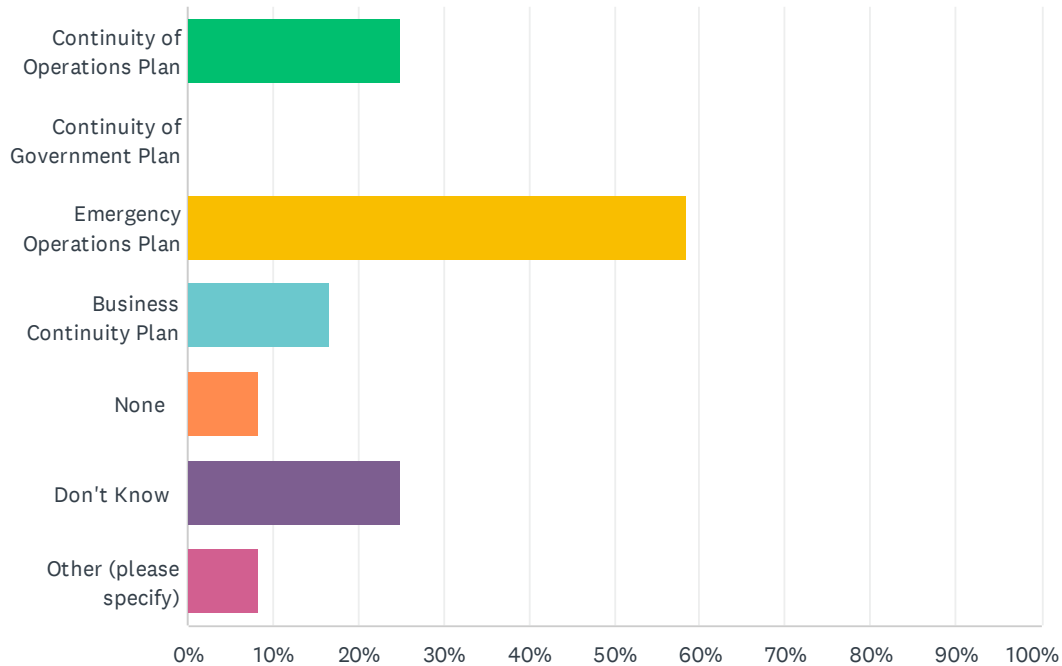
**Q11 Looking at where your facilities or services are located in Warren County, what areas do you believe to be the most vulnerable to hazards? What are these hazards? (please explain).**

Answered: 12 Skipped: 3

#	RESPONSES	DATE
1	The streets around the Middle and High Schools, Administrative Offices on Quade St, West Notre Dame, and Shippey Ave regularly have standing storm water.	7/24/2023 3:08 PM
2	North Country near bodies of water; Areas with significant snow storms, wind storms; Rainfall	7/13/2023 3:13 PM
3	Power outages, fallen trees, stormwater washing out roads, water supply (Lake George)	7/13/2023 1:25 PM
4	City Hall/Police Station Possible Fire	7/13/2023 11:07 AM
5	severe storms	7/13/2023 7:39 AM
6	The bikeway constantly has issues with trees down or blocking the bikeway. At the Fish Hatchery, every spring we need to be prepared for ice jams and flooding.	7/13/2023 7:35 AM
7	Electric Substations and gas regulating stations. As we've all seen in the news with the recent vandalism with electric utility equipment, it is high on the priority list for our security teams.	1/18/2023 9:13 AM
8	N/A	1/9/2023 9:32 AM
9	Salt mitigation to protect the lake. We currently use sand on the backside of our building/parking area and salt/sand mixture on the front. No other hazards as of this writing.	1/8/2023 4:31 PM
10	We rely on pre-identified municipal buildings and locations that are owned and maintained by City/Town municipalities for many of our activities. Our hub is the County Municipal Center. Vulnerabilities include fire, severe weather impacting the facility, loss of internet and utilities caused by weather or man made factors	1/6/2023 8:22 AM
11	Road hazards - downed trees, winter driving conditions	1/5/2023 4:30 PM
12	Industry along the river and watershed	12/14/2022 7:28 PM

## Q12 Is your organization covered by any of the following plans? Check all that apply

Answered: 12 Skipped: 3



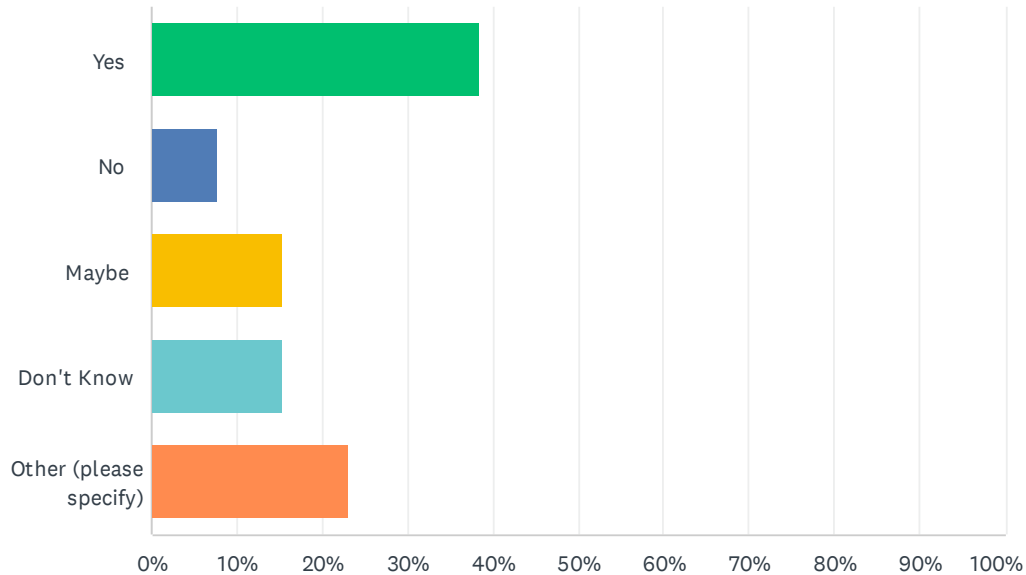
ANSWER CHOICES	RESPONSES
Continuity of Operations Plan	25.00% 3
Continuity of Government Plan	0.00% 0
Emergency Operations Plan	58.33% 7
Business Continuity Plan	16.67% 2
None	8.33% 1
Don't Know	25.00% 3
Other (please specify)	8.33% 1
Total Respondents: 12	

#	OTHER (PLEASE SPECIFY)	DATE
1	GFSD Safety Plan	7/24/2023 3:08 PM



### Q13 Do you believe the facilities and infrastructure for your organization are equipped to handle a disaster and/or resilient to damages?

Answered: 13 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	38.46%	5
No	7.69%	1
Maybe	15.38%	2
Don't Know	15.38%	2
Other (please specify)	23.08%	3
TOTAL		13

#	OTHER (PLEASE SPECIFY)	DATE
1	Some are and some not as well	7/13/2023 7:39 AM
2	We have systems in place to maintain our infrastructure while also performing continuous improvement projects for storm hardening/reliability on our networks.	1/18/2023 9:13 AM
3	We were able to operate successfully throughout the pandemic shutdown and help our community overcome the challenges for economic success. Unsure about other potential disasters as we haven't had them other than economic downturns (2008-2010, 1990's).	1/8/2023 4:33 PM

## Q14 Can you identify projects or programs that will reduce your facility/organization's vulnerability to damages and losses, including loss of operation/service, to hazard events? (Please explain)

Answered: 9    Skipped: 6

#	RESPONSES	DATE
1	No	7/24/2023 3:11 PM
2	Improved stormwater management, additional power generators,	7/13/2023 1:33 PM
3	Frequent inspections of facilities and regular maintenance	7/13/2023 7:52 AM
4	We have an emergency plan in place for fire, natural disasters and man made disasters and we conduct drills	7/13/2023 7:41 AM
5	Tree Trimming program - each of our circuits are trimmed on 5 year cycles, that means every 5 years "Main St in Queensbury" will be inspected for danger trees and trimmed by one of our tree contractors. "Computapole" program. This is a program that has us inspect and get eyes on every piece of National Grid electric infrastructure throughout our territory. We identify potential hazards like rotting poles, broken or unbonded guy wires, blown lightening arrestors, or broken cross arms. Once they are reported, the issues are then sent to the field workers for repairs. This is also done in 5 year cycles for each of our circuits. We have a similar program for our gas distribution system in regards to our Leak Prone Pipe program where we are replacing old cast iron mains and services with plastic. We have a gas corrosion team that inspects our pipe lines to make sure they are still in spec.	1/18/2023 9:13 AM
6	N/A	1/9/2023 9:33 AM
7	We were able to take advantage of the second round of PPP funding because of our 501c6 corporate status that helped us through the pandemic financially. Other strategies in the past have been to cut programs and not people to stay financially stable as an organization.	1/8/2023 4:36 PM
8	Upgrading work from home opportunities if the facility is unusable, ensuring a suitable secondary location is available for staff that have to be in the office, providing funding to ensure IT and other equipment necessary to maintain operations is provided	1/6/2023 8:32 AM
9	Sewage treatment plant power project	12/14/2022 7:29 PM

**Q15 Can you identify projects or programs that have been recently been implemented to reduce your facility's/organization's vulnerability, damage and losses, including loss of operation/service, to hazard events? (please explain)**

Answered: 12   Skipped: 3

#	RESPONSES	DATE
1	No	7/24/2023 3:11 PM
2	Warren County Continuity of Operations Plan implemented by Amy Hirsch; Response to COVID	7/13/2023 3:14 PM
3	Installed manmade wetland to help manage stormwater, installed limited number of generators to offset power losses	7/13/2023 1:33 PM
4	Frequent inspections of facilities and regular maintenance	7/13/2023 7:52 AM
5	Drilling our disaster plan	7/13/2023 7:41 AM
6	See Above.	1/18/2023 9:13 AM
7	N/A	1/9/2023 9:33 AM
8	We are reworking our strategic plan and have begun a five year financial look-back and a five year forecast CAGR - (compound annual growth rate).	1/8/2023 4:36 PM
9	none at a County level. Public Health initiatives to mitigate the impacts of a disaster have been undertaken as a requirement of the NYSDOH Office of Health Emergency Preparedness annual core deliverables which must be completed to receive funding from NYSDOH for the Warren County Public Health Emergency Preparedness program	1/6/2023 8:32 AM
10	SAIL has an internal emergency preparedness plan that we will exercise in the event of an emergency.	1/6/2023 8:16 AM
11	Installation of an emergency back-up generator	1/5/2023 4:31 PM
12	Storm water and sewage decoupling projects	12/14/2022 7:29 PM

## Q16 Do you have any questions or comments for Warren County?

Answered: 8 Skipped: 7

#	RESPONSES	DATE
1	No	7/24/2023 3:12 PM
2	NO	7/13/2023 7:52 AM
3	no	7/13/2023 7:41 AM
4	Warren County has been a great partner in National Grid's restoration and community efforts. I look forward to working with you for years to come.	1/18/2023 9:13 AM
5	No	1/9/2023 9:33 AM
6	None as of this writing.	1/8/2023 4:36 PM
7	What steps are being taken to prepare for the impacts of climate change? NYSDOH is making that a priority in Public Health Emergency Preparedness Planning? Also what steps are being taken to identify populations within Warren County with access and functional needs so planning considerations can be made and gaps can be filled as funding becomes available. Is there a plan to create or does one exist for a work pool for County workers if a department temporarily needs extra help to respond to and recovery from a disaster? Are the elected leaders in Warren County required to attend emergency preparedness trainings and participate in the hazard mitigation planning process?	1/6/2023 8:38 AM
8	None	1/6/2023 8:16 AM

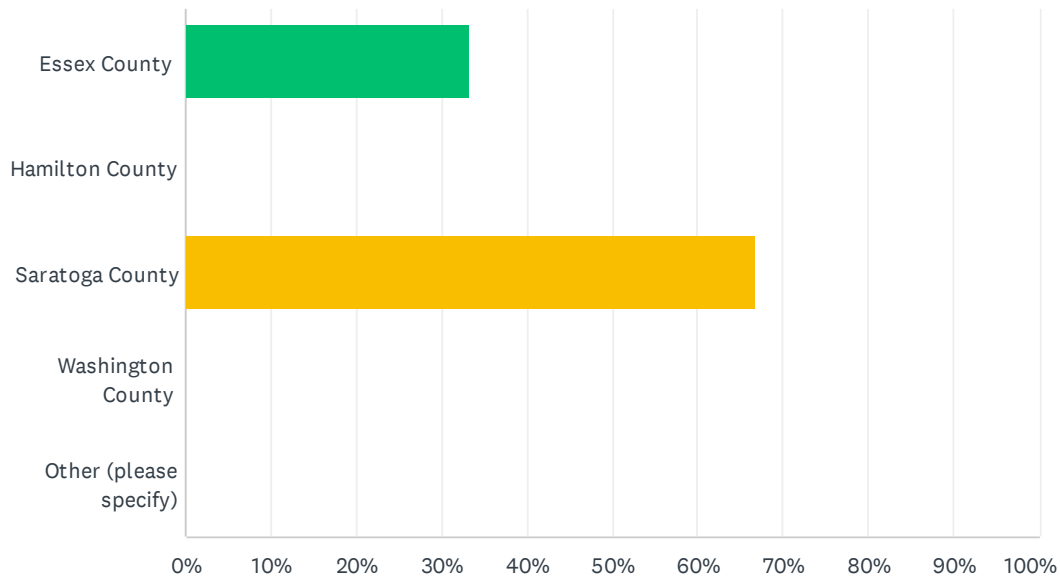


## D.3 NEIGHBORING COUNTY SURVEY

A neighboring county survey was sent to the surrounding counties of Warren due to their proximity to the County and because the effects of hazard events that impact Warren County would be similar to that of their neighbors. A summary of the results are included on the following pages.

## Q1 Please indicate the community in which you represent

Answered: 3   Skipped: 0



ANSWER CHOICES		RESPONSES	
Essex County		33.33%	1
Hamilton County		0.00%	0
Saratoga County		66.67%	2
Washington County		0.00%	0
Other (please specify)		0.00%	0
TOTAL			3

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	



## Q2 Name and Title of Respondent

Answered: 3    Skipped: 0

#	RESPONSES	DATE
1		
2		
3		

### Q3 What department do you represent?

Answered: 3   Skipped: 0

#	RESPONSES	DATE
1	Saratoga County Emergency Management	5/1/2023 10:28 AM
2	Essex County Emergency Services	5/1/2023 8:14 AM
3	OEM	1/9/2023 2:35 PM

Q4 Please provide your contact information.

Answered: 3    Skipped: 0

ANSWER CHOICES	RESPONSES	
Name	0.00%	0
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	3
Phone Number	100.00%	3

#	NAME	DATE
	There are no responses.	
#	COMPANY	DATE
	There are no responses.	
#	ADDRESS	DATE
	There are no responses.	
#	ADDRESS 2	DATE
	There are no responses.	
#	CITY/TOWN	DATE
	There are no responses.	
#	STATE/PROVINCE	DATE
	There are no responses.	
#	ZIP/POSTAL CODE	DATE
	There are no responses.	
#	COUNTRY	DATE
	There are no responses.	
#	EMAIL ADDRESS	DATE
1		
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3		
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1		

## Warren County Hazard Mitigation Plan - Neighboring Community Survey

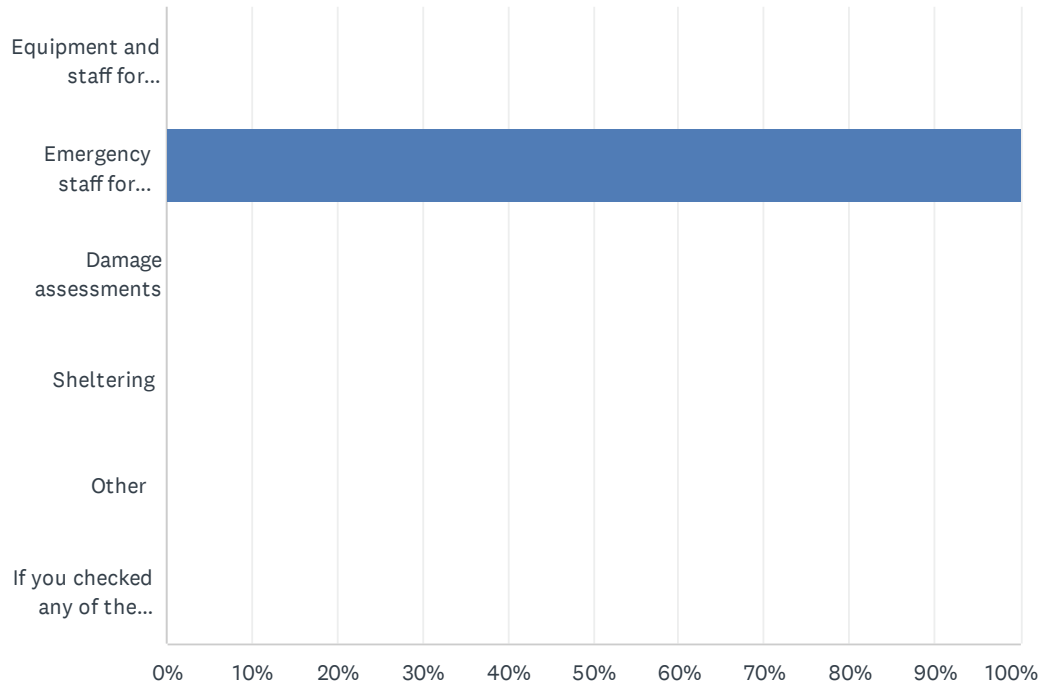
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## Q5 Do you have any shared service agreements or mutual aid agreements in place with Warren County for the following?

Answered: 1 Skipped: 2

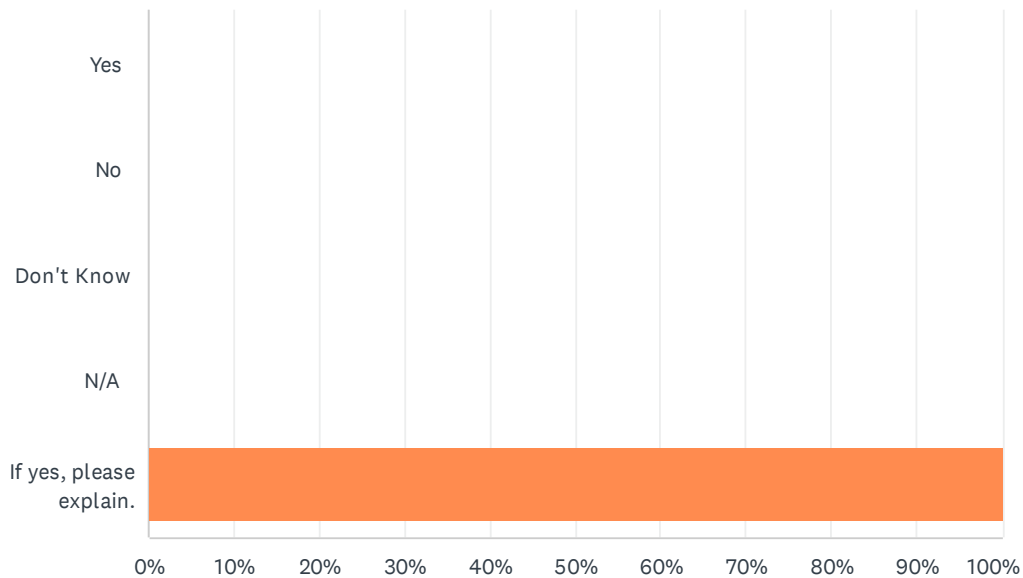


ANSWER CHOICES	RESPONSES	
Equipment and staff for debris cleanup and removal	0.00%	0
Emergency staff for evacuations/disaster response	100.00%	1
Damage assessments	0.00%	0
Sheltering	0.00%	0
Other	0.00%	0
If you checked any of the above, please explain.	0.00%	0
Total Respondents: 1		

#	IF YOU CHECKED ANY OF THE ABOVE, PLEASE EXPLAIN.	DATE
	There are no responses.	

## Q6 Is Warren County involved in your community's comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

Answered: 2   Skipped: 1



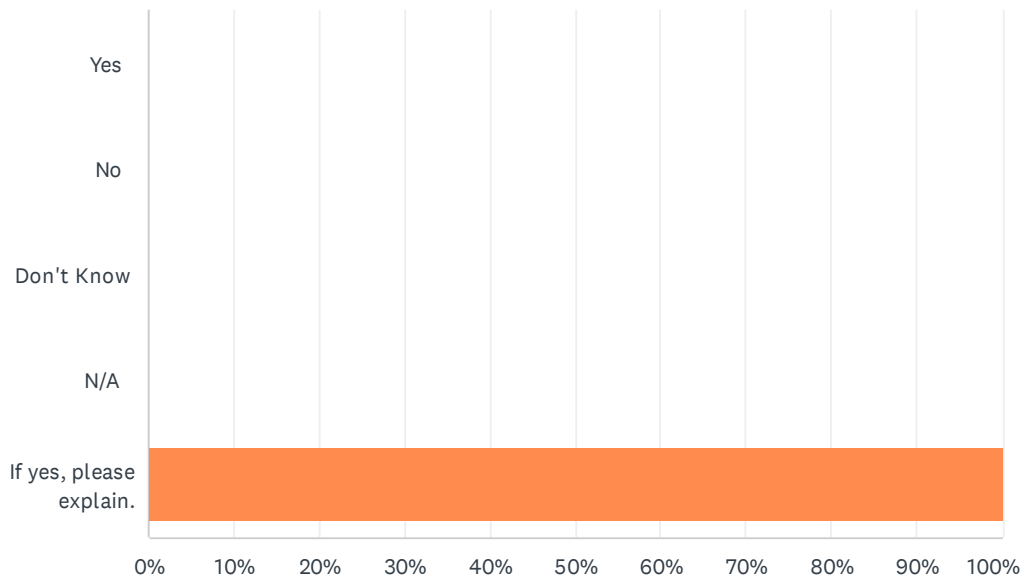
ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
Don't Know	0.00% 0
N/A	0.00% 0
If yes, please explain.	100.00% 2
<b>TOTAL</b>	<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	Fire/EMS mutual aid plans	5/1/2023 3:10 PM
2	Warren County was instrumental in helping us to develop many of our plans. They are a partner that could be asked for assistance in a variety of disasters	1/9/2023 2:38 PM



## Q7 Is your community involved in Warren County's comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

Answered: 2   Skipped: 1

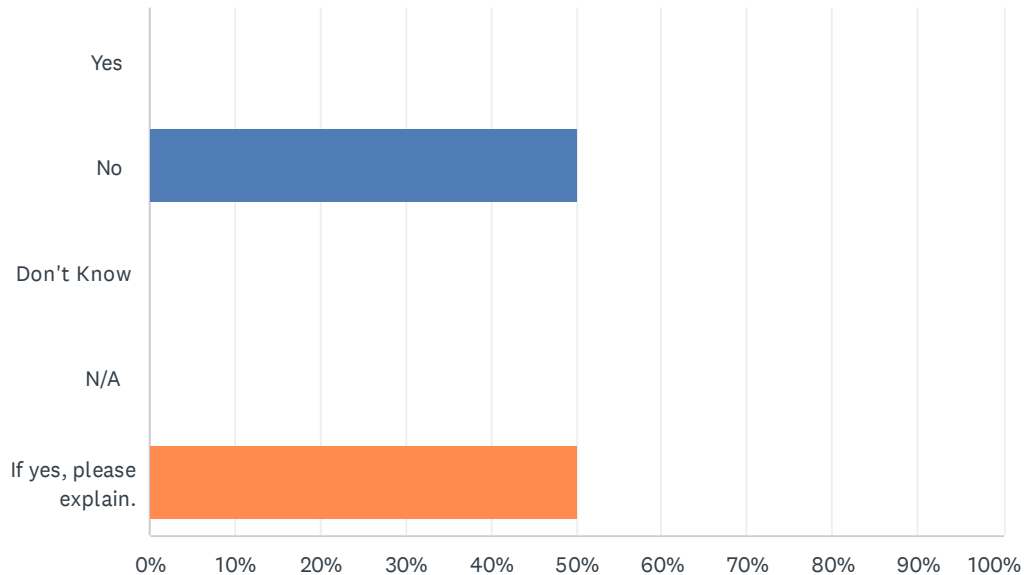


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
Don't Know	0.00% 0
N/A	0.00% 0
If yes, please explain.	100.00% 2
<b>TOTAL</b>	<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	Fire/EMS mutual aid plans	5/1/2023 3:10 PM
2	Same as above	1/9/2023 2:38 PM

## Q8 Is Warren County involved in your community's Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of your community's essential functions for a period of time?

Answered: 2   Skipped: 1

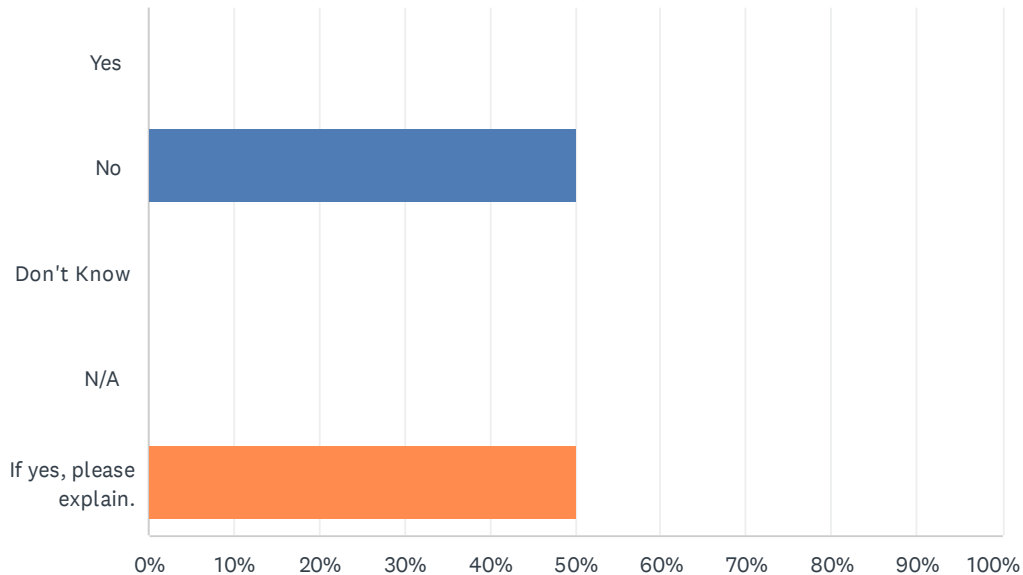


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	50.00%	1
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Mutual aid plans Fire/EMS/Law	1/9/2023 2:38 PM

**Q9 Is your community involved in Warren County's Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of Warren County's essential functions for a period of time?**

Answered: 2 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	50.00%	1
<b>TOTAL</b>		<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	Mutual aid plans Fire/EMS/Law	1/9/2023 2:38 PM

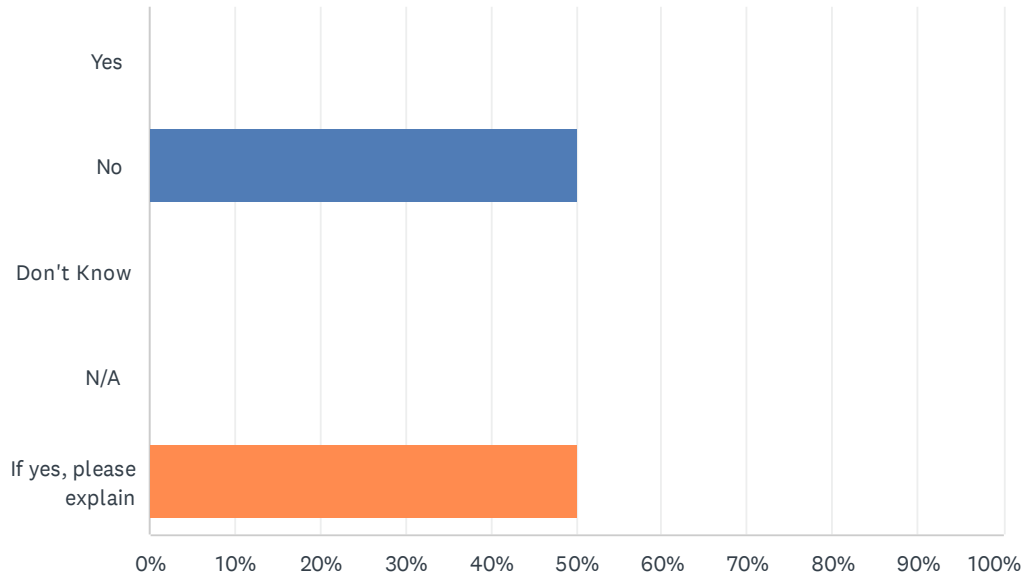
## Q10 Thinking about emergency operations and disaster response, please explain how these actions are communicated between communities.

Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	Phone, email, NY Responds	5/1/2023 3:10 PM
2	Emergency Managers work together to respond to incidents and may work together to mitigate against incidents along shared vulnerabilities.	1/9/2023 2:38 PM

## Q11 Does your community share risk and vulnerability assessments (flood mapping, HAZUS, etc.) with Warren County?

Answered: 2 Skipped: 1

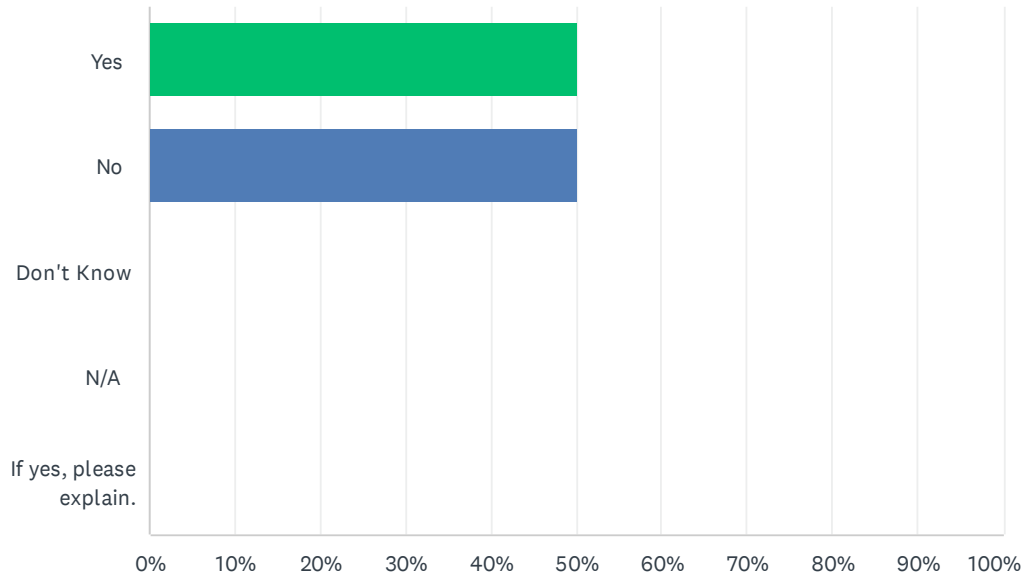


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain	50.00%	1
TOTAL		2

#	IF YES, PLEASE EXPLAIN	DATE
1	Flood mapping	5/1/2023 3:11 PM

## Q12 Do you collaborate with Warren County on establishing evacuation routes and alternate evacuation routes?

Answered: 2 Skipped: 1



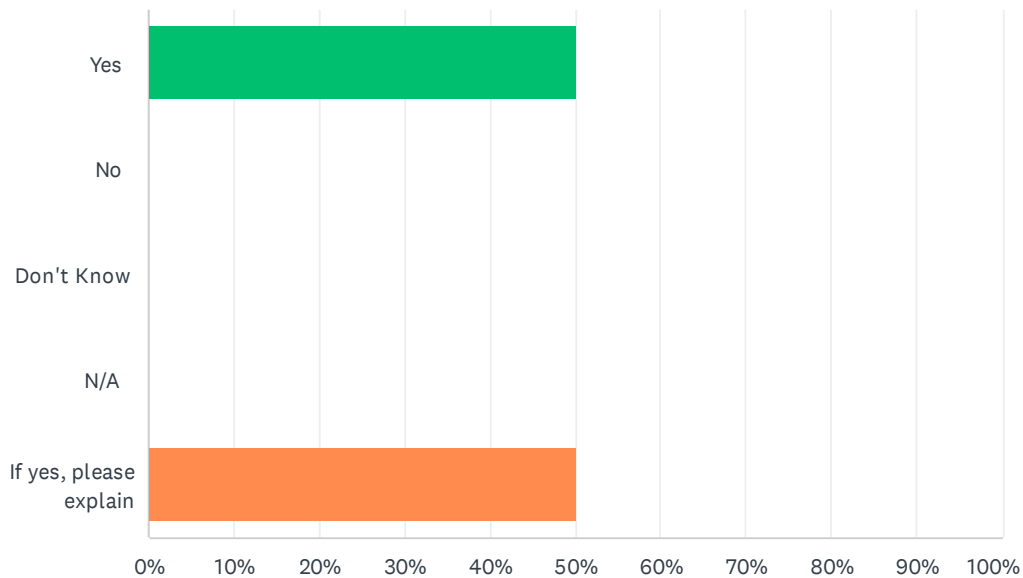
ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	



### Q13 Do you and Warren County consult with one another before making evacuation decisions that would impact one another (recommending evacuation routes into neighboring jurisdictions)?

Answered: 2 Skipped: 1

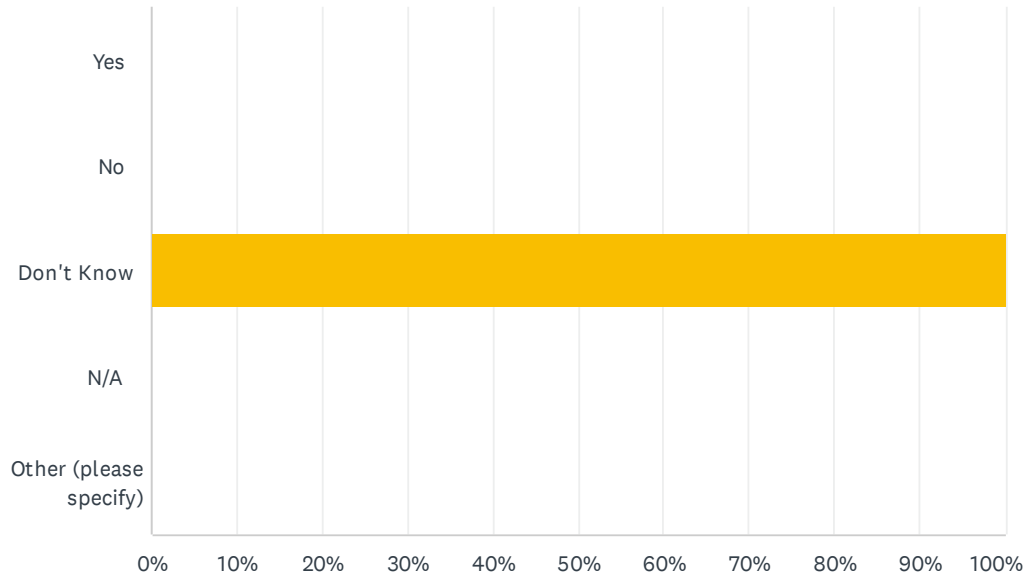


ANSWER CHOICES	RESPONSES
Yes	50.00% 1
No	0.00% 0
Don't Know	0.00% 0
N/A	0.00% 0
If yes, please explain	50.00% 1
<b>TOTAL</b>	<b>2</b>

#	IF YES, PLEASE EXPLAIN	DATE
1	Multi-county evacuations would require collaboration	5/1/2023 3:14 PM

## Q14 Are evacuation routes maintained to the same level of protection across jurisdictional lines?

Answered: 2   Skipped: 1

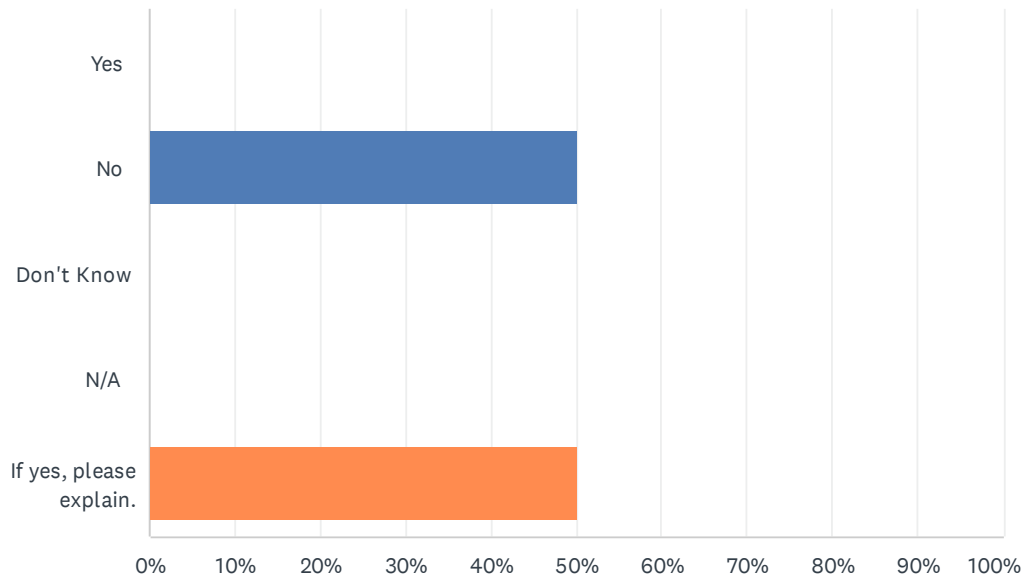


ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		0.00%	0
Don't Know		100.00%	2
N/A		0.00%	0
Other (please specify)		0.00%	0
TOTAL			2

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

## Q15 Do you collaborate with Warren County on establishing shelters?

Answered: 2   Skipped: 1

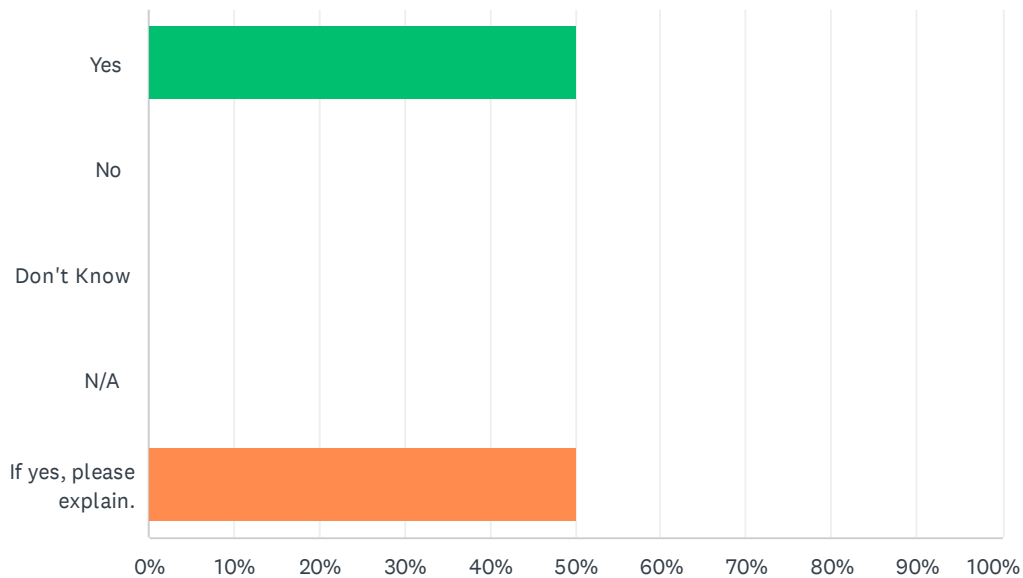


ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		50.00%	1
Don't Know		0.00%	0
N/A		0.00%	0
If yes, please explain.		50.00%	1
TOTAL			2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Historically we have collaborated on shared hazards/events	5/1/2023 3:14 PM

## Q16 Do you and Warren County consult with one another before making sheltering decisions that would impact one another (recommending shelters in neighboring communities)?

Answered: 2 Skipped: 1

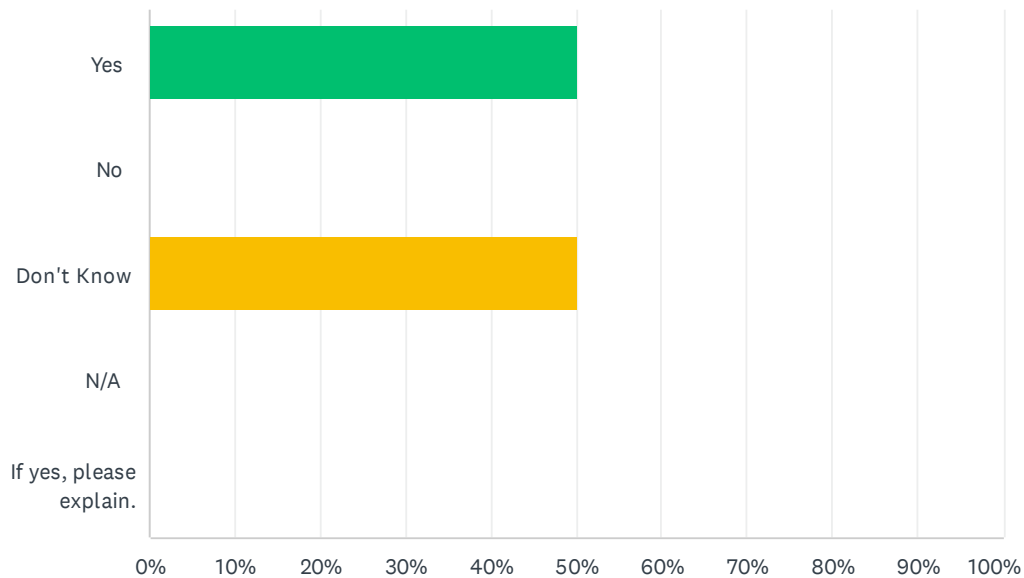


ANSWER CHOICES	RESPONSES
Yes	50.00% 1
No	0.00% 0
Don't Know	0.00% 0
N/A	0.00% 0
If yes, please explain.	50.00% 1
<b>TOTAL</b>	<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	By phone/email	5/1/2023 3:14 PM

**Q17 Do you and Warren County share any spaces suitable for temporary housing? This includes locations suitable to place temporary housing units to house residents displaced by a disaster.**

Answered: 2 Skipped: 1

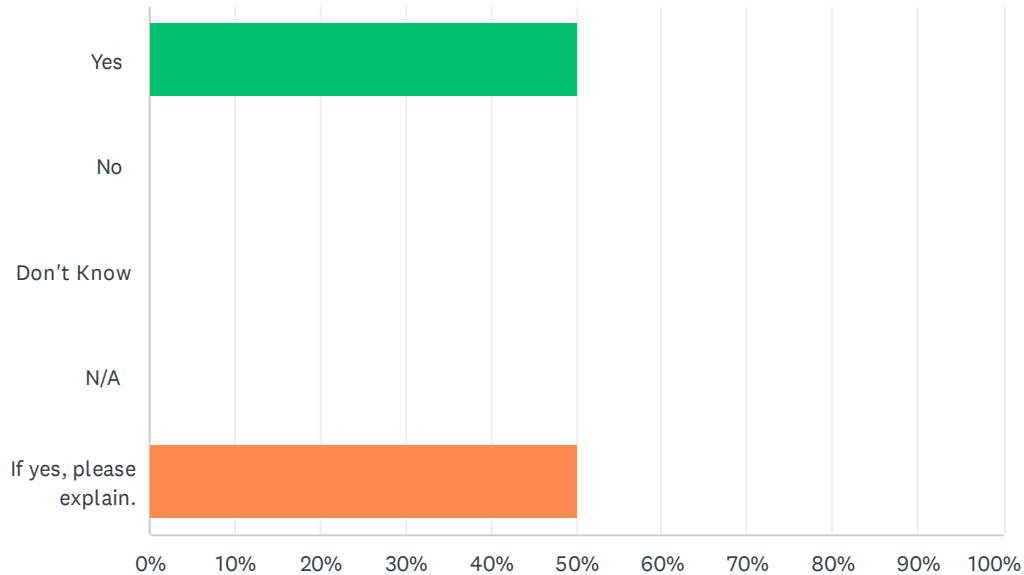


ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	0.00%	0
Don't Know	50.00%	1
N/A	0.00%	0
If yes, please explain.	0.00%	0
<b>TOTAL</b>		<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

## Q18 Does your community have access to contact information for Warren County's emergency operation centers?

Answered: 2 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	0.00%	0
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	50.00%	1
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Phone/email	5/1/2023 3:22 PM



Q19 Please describe any situations or hazards that are of concern to both your community and Warren County. For example, would flooding along a particular waterway impact both jurisdictions, or are there any facilities or infrastructure that would affect both jurisdictions if it/they failed?

Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	All dams/flooding along common county borders	5/1/2023 3:22 PM
2	Flooding along the Hudson - which serves as the boundary between a good portion our counties. Additionally, various incidents along the northway. Also, large scale incidents (eg brush fire) along our rural border.	1/9/2023 2:51 PM

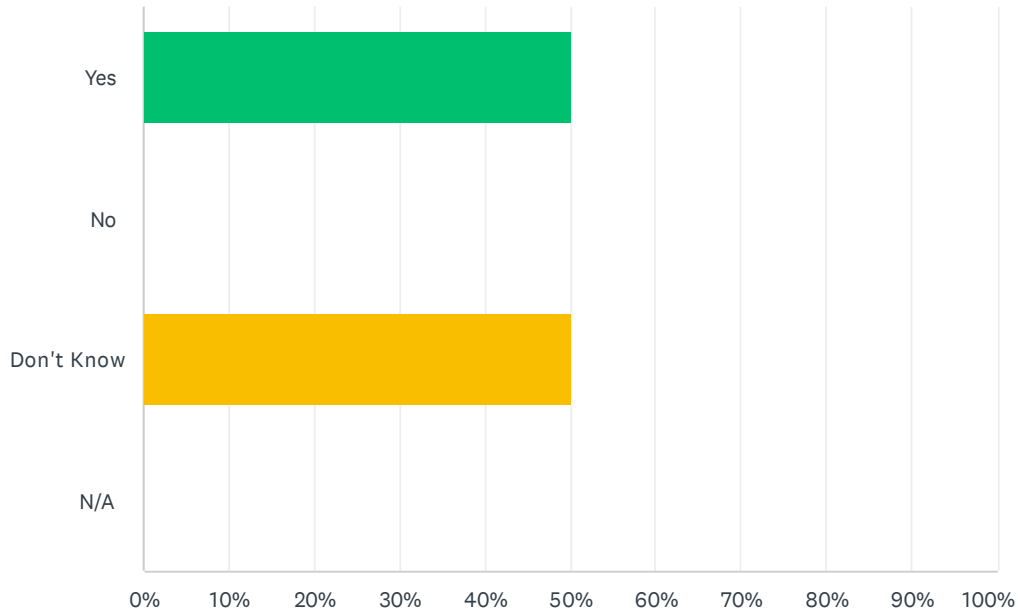
## Q20 Please explain how information is shared between communities regarding mitigation projects.

Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	Phone/email	5/1/2023 3:22 PM
2	The hazard mitigation plan, intercommunity communication often by the highway department leadership	1/9/2023 2:51 PM

## Q21 Is information regarding mitigation shared during the planning and implementation phases of the projects?

Answered: 2 Skipped: 1



ANSWER CHOICES		RESPONSES	
Yes		50.00%	1
No		0.00%	0
Don't Know		50.00%	1
N/A		0.00%	0
TOTAL			2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

## Q22 Are you aware of any projects for the following that requires cross-collaboration between jurisdictional boundaries?

Answered: 0   Skipped: 3

 No matching responses.

ANSWER CHOICES	RESPONSES	
Stormwater projects	0.00%	0
Watershed projects or planning	0.00%	0
Floodplain projects or planning	0.00%	0
Connected roadway improvements	0.00%	0
Natural infrastructure restoration	0.00%	0
Outreach (education and outreach campaigns, programs for public information, etc.)	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 0		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

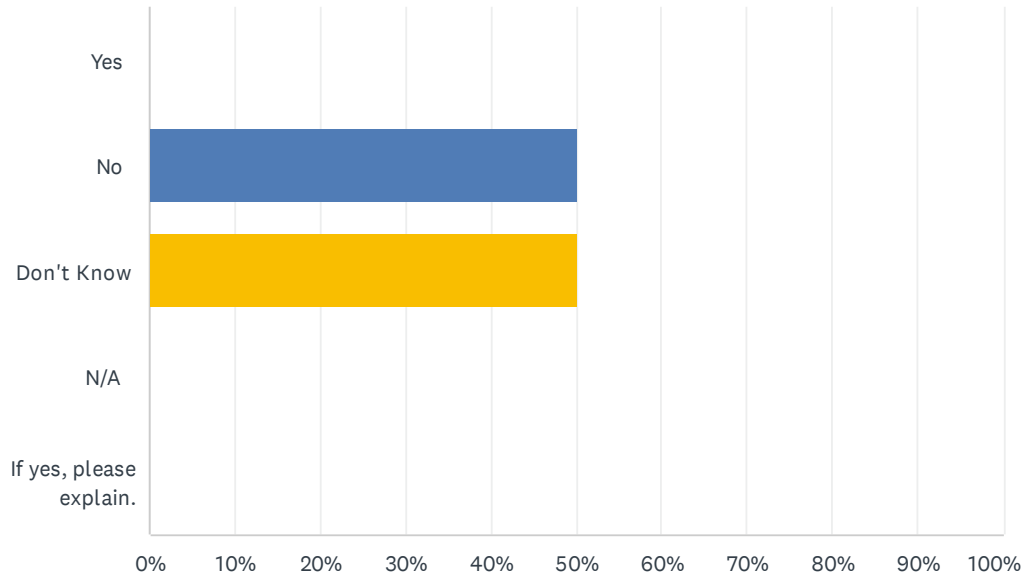
## Q23 If you selected anything above, please explain.

Answered: 0   Skipped: 3

#	RESPONSES	DATE
	There are no responses.	

## Q24 Have your community and Warren County collaborated on grant applications?

Answered: 2 Skipped: 1



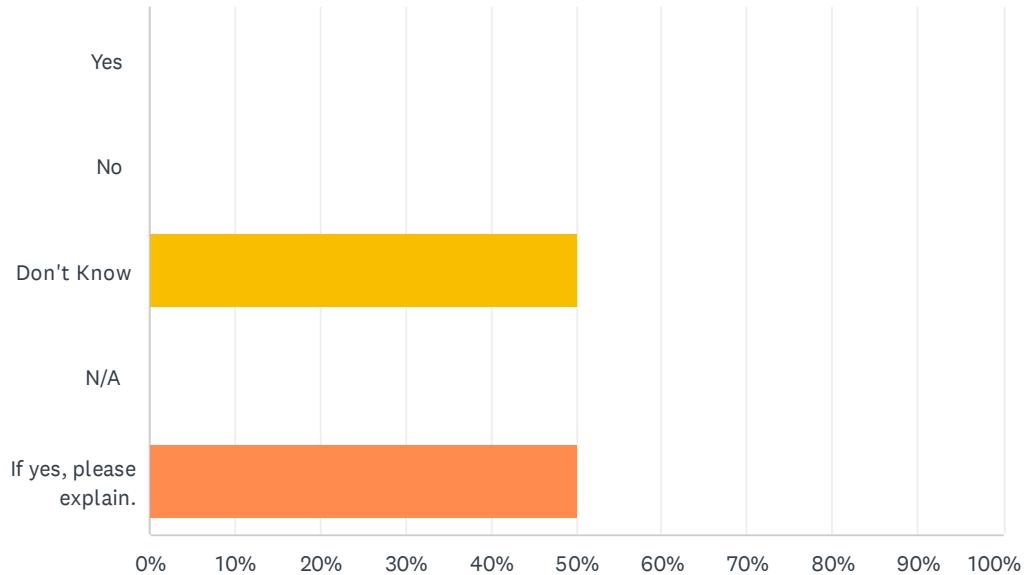
ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	50.00%	1
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	



## Q25 Are you aware of any organizations that carry out education and outreach regarding hazards in both your community and Warren County?

Answered: 2 Skipped: 1



ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		0.00%	0
Don't Know		50.00%	1
N/A		0.00%	0
If yes, please explain.		50.00%	1
TOTAL			2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Dam operators	5/1/2023 3:24 PM

## Q26 What are opportunities or ideas to optimize cooperation with Warren County on emergency management operations and hazard mitigation projects?

Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	Open communication when planning cross-jurisdictional projects	5/1/2023 3:24 PM
2	Corresponding HAZMIT Plans/Projects	1/9/2023 2:52 PM

## Q27 Do you have any relevant questions or comments for Warren County?

Answered: 1   Skipped: 2

#	RESPONSES	DATE
1	We will be going through a HAZMIT plan update later this year as well	1/9/2023 2:52 PM



## D.4 WEBSITE AND SOCIAL MEDIA POSTS

The following provides screenshots of the informational fact sheet, website, news articles, and social media posts.



# WARREN COUNTY HAZARD MITIGATION PLAN

2023 Update

## What is a Hazard Mitigation?

Hazard mitigation is an action to help reduce long-term risks caused by hazards or disasters, such as flooding, earthquakes, or wildfires. The purpose of hazard mitigation is to protect people and structures, and minimize the costs of disaster response and recovery. Hazard mitigation can take many forms: capital projects, policies, education, and environmental protection.

Proactive mitigation leads to more cost-effective projects. By contrast, reactive mitigation, tends to lead to severe damage and often more costly fixes; it simply costs too much to address the effects of disasters only after they happen. A surprising amount of damage can be prevented if we can anticipate where and how disasters occur, and take steps to prevent those damages.

## What is a Hazard Mitigation Plan?

Hazard Mitigation Plans (HMP) are prepared and adopted by counties and municipalities with the primary purpose of identifying, assessing, and reducing the long-term risk to life and property from hazard events. HMPs are most effective when they are based on a comprehensive, long-term plans developed before a disaster occurs.

Effective mitigation planning can break the cycle of disaster damage, reconstruction, and repeated damage. There are four key elements of an HMP: 1) a risk assessment, 2) capability assessment, 3) mitigation strategy, and 4) plan maintenance procedures.

The purpose of mitigation planning is to identify local policies and actions that can be implemented over the long term to reduce risk and future losses from hazards. These mitigation policies and actions are identified based on an assessment of hazards, vulnerabilities, and risks and the participation of a wide range of stakeholders and the public in the planning process.

## Purpose

The Warren County Soil and Water Conservation District is leading the update of the Warren County HMP. This plan is an opportunity to detail a variety of potential hazards that could affect some or all of the residents and will also allow the county and participating municipalities to be eligible for future mitigation funding from the Federal Emergency Management Agency (FEMA).

The goal of the plan is to identify projects that can reduce damages from future hazards. The plan will include a risk assessment and a hazard mitigation strategy. The primary hazards of concern in the counties include: Dam Failure, Disease Outbreak, Earthquake, Flood, Infestation, Severe Storm, Severe Winter Storm, and Wildfire.

The study will focus on existing buildings and potential future development, infrastructure, and lifelines that might be impacted.

Lifelines include but are not limited to municipal buildings and infrastructure such as power-generation facilities, water utilities, roadways, railroads and communication systems.



## What are the benefits of Hazard Mitigation?

Mitigation planning will help the county and the participating jurisdictions prepare for disasters, before they happen, to reduce impacts when a disaster occurs.

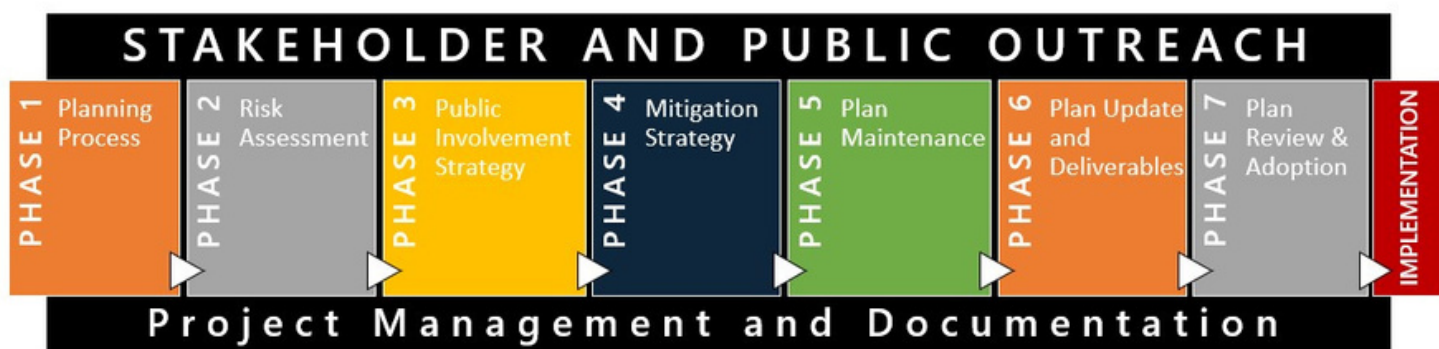
Benefits include:

- Identifying actions for risk reduction that are agreed upon by stakeholders and the public,
- Focusing resources on the greatest risks and vulnerabilities,
- Building partnerships by involving citizens, organizations, and businesses,
- Increasing education and awareness of threats and hazards, as well as their risks,
- Communicating priorities to state and federal officials, and
- Aligning risk reduction with other community objectives.

## What is required in a Hazard Mitigation Plan?

FEMA regulations require that the public must be engaged in all phases of the plan's development. The HMP should review and incorporate existing plans and programs that can support or enhance hazard mitigation. The plan must assess the risk to natural hazards that may impact the planning area and identify and prioritize mitigation actions that can be taken. The HMP must also include a strategy for maintaining the plan, which must be updated every 5 years.

## Planning Process



## FAQs

**What is mitigation?** Any sustained action taken to reduce/ eliminate long-term risk to life and property from a hazard event.

**How can you reduce/eliminate risk?** Identify mitigation actions/ projects/activities or processes that can include 1) Local plans and regulations; 2) Structure and infrastructure projects; 3) Natural systems protection; 4) Education and awareness programs.

**What grant funding is available?** FEMA Hazard Mitigation Assistance grant funding is available with a FEMA-approved Hazard Mitigation Plan (annual and post-disaster opportunities).

**How can I support the plan?** Take the public survey! This will help us obtain input and get a better understanding of public preparedness for hazard events.

**Where can I see the 2023 plan?** Sections of the draft plan will be available late-2022 for download, review and comment on the Warren County HMP website at: <https://www.warrencountynewyorkhmp.com/>

For more information, please visit our website:

<https://www.warrencountynewyorkhmp.com/>

For more information about this process, please contact:



Warren County Soil and Water Conservation District  
518-623-3119

Live or work in Warren County? Take our survey!  
<https://www.surveymonkey.com/r/WarrenNYHMPPublic>

-or-

scan the QR code to complete the survey







# WARREN COUNTY HAZARD MITIGATION PLAN

## 2023 UPDATE

[Home](#)[About](#)[What is Mitigation](#)[Meetings](#)[Calendar](#)[Explore the Plan](#)[Additional Information](#)

### Warren County Hazard Mitigation Plan 2023 Update

The draft Warren County Hazard Mitigation Plan is available for public review. This plan will be available for public review through September 2<sup>nd</sup>, 2023.

Welcome to the Warren County Hazard Mitigation Plan (HMP) Website. This website provides project updates, resources, and links to hazard mitigation in support of the HMP update.

The goal of the project is to save lives and property through the reduction of hazard vulnerability for Warren County and its municipalities. During the course of this planning project, county and local leaders and the community will work in tandem to identify risks, assess capabilities, and formulate a strategy to reduce disaster vulnerability.

Public participation and feedback are vital parts of the hazard mitigation planning process. The Warren County HMP Steering Committee developed a mitigation survey to assist in providing the public an outlet to contribute to the Warren County HMP update which was active through June 8, 2023. The results of the survey will be used to develop portions of the HMP.

If you have any questions or comments regarding the HMP or planning process, please complete this form, and someone from the Planning Partnership will be in touch.

Events in August 2023–July 2024

# **WARREN COUNTY**

## **2023 HAZARD MITIGATION PLAN UPDATE**

**When natural hazards occur, how are you prepared?  
Let us know in this survey as part of Warren County's  
Hazard Mitigation Plan update.**

**<https://www.warrencountynewyorkhmp.com/>**



For more information, please contact Warren County Soil  
and Water Conservation District:  
(518) 623-3119



Boost post



# HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note this ...

March 9, 2023 at 6:11 AM

ID: 555241586795063

## Interactions

0 reactions

0 comments

5 shares

Overview

Performance

Feed preview

## Performance

### Reach ⓘ

Total	964
Organic	964 (100%)
Paid	0 (0%)

### Engagements ⓘ

Reactions	0
Comments	0
Shares	5

View details

### Negative interactions ⓘ

Total	0
Unique	0

## Feed preview



Warren County, New York

March 9 · 🌐



HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note





Boost post



# HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note this ...

January 12, 2023 at 6:21 AM  
ID: 519354607050428

## Interactions

2 reactions

0 comments

2 shares

- Overview
- Performance
- Feed preview

## Performance

### Reach ⓘ

Total

**928**

Organic	928 (100%)
Paid	0 (0%)

### Engagements ⓘ

Reactions

**2**

Comments	0
Shares	2

View details

### Negative interactions ⓘ

Total

**0**





























Unique	0
--------	---

## Feed preview

Warren County, New York

January 12 · 🌐

HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note

	HELP US COMPLETE OUR HAZ...		Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Thu Mar 9, 6:11am	 	--						
								Distribution					0:00	Average minutes
	HELP US COMPLETE OUR HAZ...		Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Thu Jan 12, 6:21am	 	--						
								Distribution					0:00	Average minutes
	HELP US COMPLETE OUR HAZ...		Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Sat Jan 7, 10:19am	 	--						
								Distribution					0:00	Average minutes
	HELP US COMPLETE OUR HAZ...		Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Dec 22, 2022	 	--						
								Distribution	0	0	0		0:00	Average minutes
									Minutes viewed	3-second video views	1-Minute video views			
	Good advice from Warren Coun...		Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Dec 20, 2022	 	--						
								Distribution	0	0	0		0:00	Average minutes
									Minutes viewed	3-second video views	1-Minute video views			
	Warren County is looking for p...		warrencountynynewyork	<a href="#">View insights</a>	<a href="#">...</a>	Dec 9, 2022	 	--	--	--	--		--	
	Warren County and its partners...		Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Dec 9, 2022	 	--						
								Distribution	0	0	0		0:00	Average minutes
									Minutes viewed	3-second video views	1-Minute video views			

-- your other posts within 21+ days of publishing.

↓ 399,999,999.0x less Impressions

↓ 399,999,999.0x less Link clicks

↓ 399,999,999.0x less Reactions

Understand your Distribution

Impressions is the metric that's likely having the biggest effect on the distribution of this post.



[https://poststar.com/news/local/warren-county-seeks-input-to-update-hazard-mitigation-plan/article\\_beb98a44-7b21-11ed-a710-b7a678f9a3f7.html](https://poststar.com/news/local/warren-county-seeks-input-to-update-hazard-mitigation-plan/article_beb98a44-7b21-11ed-a710-b7a678f9a3f7.html)

# Warren County seeks input to update hazard mitigation plan

**Post-Star staff report**

Dec 13, 2022

**W**arren County is looking for public input as it updates its Multi-Jurisdictional Hazard Mitigation Plan, a document that details the potential hazards, such as storm-related conditions, that could affect residents and visitors.

The plan is an opportunity to detail a variety of potential hazards that might affect those who live in and visit Warren County. Ann Marie Mason, Warren County's director of emergency services, said that updating the plan allows the county and participating jurisdictions to be eligible for future mitigation funding from the Federal Emergency Management Agency.

"Public participation and feedback are a vital part of the hazard mitigation planning process," Mason said in a news release. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."

---

## People are also reading...

- 1 **South Glens Falls may sue to have electrical box fixed**
  - 2 **Mr. Shatner goes to Ticonderoga**
  - 3 **Glens Falls Windy Hill residents react to possible Quaker Road development**
  - 4 **Reminder: New print edition, schedule this week**
-



The survey can be found here:

**<https://www.surveymonkey.com/r/WarrenNYHMPPublic>**.

The plan identifies projects that can reduce damages from future natural hazards. It also creates a framework for risk-based decision making to reduce damages to lives, property and the economy from future disasters.

The county will involve the private sector, nonprofit organizations and other community partners in the planning process.

The approach is consistent with a “Whole Community Approach” that seeks to involve the entire community in disaster and hazard planning, according to Jim Lieberum, district manager of Warren County Soil and Water Conservation District, one of the planning partners.

The plan will include a risk assessment and a hazard mitigation strategy. It will focus on existing buildings and potential future development, infrastructure, and critical facilities that might be impacted. Critical facilities are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard, and include essential facilities, transportation systems, lifeline utility systems, high-potential loss facilities and hazardous material facilities.

The update of the plan allows the county and participating jurisdictions to continue to be eligible for grant-funded projects such as home acquisitions or elevations to either remove houses located in the floodplain to generate open space and increase flood storage or to raise their first floor above the FEMA base flood elevation and local flood control measures.

For more information or to get involved in this project, contact Lieberum at 518.623.3119 or **[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)**.

To stay informed about the project, visit:

**<https://www.warrencountynewyorkhmp.com>**.

# Input needed on natural disasters in Warren County

by: [Jay Petrequin](#)

Posted: Dec 9, 2022 / 11:54 AM EST

Updated: Dec 9, 2022 / 12:03 PM EST



Severe damage to the driveway and parking lot of the Lakeview Terrace Hotel and the Fairview Association, along Lake George, N.Y. (Photo: Jay Petrequin)

SHARE



WARREN COUNTY, N.Y. (NEWS10) – It's important to know and understand what potential hazards could come with where one lives, and what different weather conditions can bring to those areas. Warren County is looking for public input as it makes updates to its plan to curb natural disaster danger for county residents.

[Get the latest news, weather, sports and community events delivered right to your inbox!](#)

The county's Multi-Jurisdictional Hazard Mitigation Plan is up for revision – and [a survey](#) gives residents a chance to weigh in on it. The plan is a document that can be used by the county to reduce the impact and damage from natural disasters, especially targeted at preventing and

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Video Center

“Public participation and feedback are a vital part of the hazard mitigation planning process,” said Warren County Emergency Services Director Ann Marie Mason. “We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made.”

[The survey asks for residents](#) to report what types of natural disasters they have seen and experienced in Warren County over the last decade, such as flooding, drought and climate change impacts. It also seeks information such as concern for future disasters, and how residents get their disaster information.

[ARPA lets Glens Falls Hospital's crisis unit grow](#)

The Hazard Minitagition Plan is updated every five years. The plan is used for communities to make risk-based decisions that can lead to fewer lives being lost, or less property being damaged, in the event of a disaster. The process going forward will also involve voices from nonprofits, community partners and the private sector. The plan will analyze how best to protect essential community facilities, transportation systems, lifeline utilities and hazardous material facilities.



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# Warren County seeks input to update hazard mitigation plan

Post-Star staff report Dec 13, 2022 0



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02:46

**W**arren County is looking for public input as it updates its Multi-Jurisdictional Hazard Mitigation Plan, a document that details the potential hazards, such as storm-related conditions, that could affect residents and visitors.

The plan is an opportunity to detail a variety of potential hazards that might affect those who live in and visit Warren County. Ann Marie Mason, Warren County's director of emergency services, said that updating the plan allows the county and participating jurisdictions to be eligible for future mitigation funding from the Federal Emergency Management Agency.

"Public participation and feedback are a vital part of the hazard mitigation planning process," Mason said in a news release. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."

WARREN COUNTY, NY -- Warren County is looking for public input as it updates its **Multi-Jurisdictional Hazard Mitigation Plan**, a document that details the potential hazards, such as storm-related conditions, that could affect Warren County's residents and visitors.

This updated plan is an opportunity to detail a variety of potential hazards that might affect those who live in and visit Warren County. Updating the plan allows the county and participating jurisdictions to be eligible for future mitigation funding from the Federal Emergency Management Agency (FEMA), explained **Ann Marie Mason, Warren County Director of Emergency Services**.

"Public participation and feedback are a vital part of the hazard mitigation planning process," Mason said. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."

The survey can be found here: <https://www.surveymonkey.com/r/WarrenNYHMPPublic>.

What is a Hazard Mitigation Plan (HMP)?

A Hazard Mitigation Plan is a document that communities use to identify projects that can reduce damages from future natural hazards. HMPs form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. The plan is updated every 5 years.

HMPs also create a framework for risk-based decision making to reduce damages to lives, property, and the economy from future disasters. During the planning process, organizations in the Warren County HMP Planning Partnership will actively involve private sector, non-profit, and other community partners in the planning process.

The approach is consistent with a "Whole Community Approach," that seeks to involve the entire community in disaster and hazard planning, said **Jim Lieberum, District Manager of [Warren County Soil and Water Conservation District](#)**, one of the planning partners.

The plan will include a risk assessment and a hazard mitigation strategy. It will focus on existing buildings and potential future development, infrastructure, and critical facilities that might be impacted. Critical facilities are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard, and include essential facilities, transportation systems, lifeline utility systems, high-potential loss facilities, and hazardous material facilities.

The update of the plan allows the county and participating jurisdictions to continue to be eligible for grant-funded projects such as home acquisitions or elevations – to either remove houses located in the floodplain to generate open space and increase flood storage or to raise their first floor above the FEMA base flood elevation – and local flood control measures. Ultimately, these actions reduce vulnerability, and communities are able to recover more quickly from disasters.

If you would like more information on how to get involved in this project, contact Lieberum at 518.623.3119 or [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org).

To stay informed about the project, visit: <https://www.warrencountynewyorkhmp.com>.



## APPENDIX E SUPPLEMENTARY DATA

This appendix contains information and details to support information provided in Section 5 (Risk Assessment).

### E.1 HISTORY OF HAZARD EVENTS WITHIN THE COUNTY

To supplement the information provided in this plan, events prior to the update of this plan are included below by hazard of concern type. Many sources provided historical information regarding previous occurrences and losses associated with hazards throughout New York and Warren County. It is noted that, with a number of sources reviewed for the purpose of this HMP, loss and impact information for many events could vary depending on the sources.

For more information on past events and impacts, refer to the 2017 Warren County Hazard Mitigation Plan.

#### E.1.1 Earthquake

Known earthquake events that have impacted New York State and Warren County between 1916 and 2023 are identified in Table E.1. Many sources were researched for historical information regarding earthquake events in Warren County; therefore, Table E.1 may not include all earthquake events that have impacted the County.

*Table E.1. Earthquake History in New York State, 1916-2023*

Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
February 3, 1916	Earthquake 4.1	Galway, NY	N/A	N/A	No reference and/or no damage reported.
March 18, 1928	Earthquake 4.1	Paul Smiths, NY	N/A	N/A	No reference and/or no damage reported.
August 12, 1929	Earthquake 4.7	Corfu, NY	N/A	N/A	No reference and/or no damage reported.
April 20, 1931	Earthquake 4.7	Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
April 15, 1934	Earthquake 4.5	Dannemora, NY	N/A	N/A	No reference and/or no damage reported.
January 1, 1966	Earthquake 4.3	Attica, NY	N/A	N/A	No reference and/or no damage reported.
June 13, 1967	Earthquake 4.1	Attica, NY	N/A	N/A	No reference and/or no damage reported.
July 15, 1973	Earthquake 3.4	Long Lake, NY	N/A	N/A	No reference and/or no damage reported.
June 7, 1974	Earthquake 3.3	Wappingers Falls, NY	N/A	N/A	No reference and/or no damage reported.
June 9, 1975	Earthquake 4.2	Altona, NY	N/A	N/A	No reference and/or no damage reported.
November 3, 1975	Earthquake 4.0	Long Lake, NY	N/A	N/A	No reference and/or no damage reported.

**Commented [MM1]:** Reference Hazard Event History from the 2016/17 plan does not have events prior to 2002. Highlighted events may need to be removed, but I wanted to confirm if events prior to 2002 need to be added.

**Commented [BC2R1]:** are those events included in an appendix of the old plan?

**Commented [MM3R1]:** I reviewed the other sections and appendices for the old plan and did not find any additional detail on past events.



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
September 28, 1977	Earthquake 3.1	Wilmington, NY	N/A	N/A	No reference and/or no damage reported.
April 5, 1978	Earthquake 2.6	Newcomb, NY	N/A	N/A	No reference and/or no damage reported.
August 21, 1978	Earthquake 3.1	Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
December 30, 1979	Earthquake 2.5	North Castle, NY	N/A	N/A	No reference and/or no damage reported.
June 6, 1980	Earthquake 3.5	Port Leyden, NY	N/A	N/A	No reference and/or no damage reported.
August 31, 1982	Earthquake 2.7	Northville, NY	N/A	N/A	No reference and/or no damage reported.
February 26, 1983	Earthquake 3.0	Pawling, NY	N/A	N/A	No reference and/or no damage reported.
October 7, 1983	Earthquake 5.1	Newcomb, NY	N/A	N/A	At Blue Mountain Lake, one old chimney collapsed, about 20 tombstones slid or rotated, and some minor cracks formed in plaster walls. Several landslides were reported. Light damage also occurred at several other towns in the area, but the most common effects were cracked chimneys, broken dishes or glassware and overturned or fallen objects. Although this earthquake caused only minor damage, it was felt over a wide region, including two Provinces in Canada and 12 States.
August 20, 1984	Earthquake 3.2	Chazy, NY	N/A	N/A	No reference and/or no damage reported.
October 19, 1985	Earthquake 3.6	Greenville, NY	N/A	N/A	No reference and/or no damage reported.
September 26, 1987	Earthquake 3.8	Tupper Lake, NY	N/A	N/A	No reference and/or no damage reported.
August 9, 1988	Earthquake 3.5	Massena, NY	N/A	N/A	No reference and/or no damage reported.
June 17, 1991	Earthquake 4.0	Worcester, NY	N/A	N/A	Felt (V) at Carlisle, Charlottesville, Cobleskill, Fly Creek, Fultonham, Herkimer, Howes Cave, Ilion, Morris, New Kingston, New York Mills, Portlandville, Rensselaerville, Seward and Worcester. Felt throughout much of New York from Rochester to Rockland and Westchester Counties. Also felt in northern New Jersey, western Connecticut, western Massachusetts and in parts of New Hampshire, Pennsylvania and Vermont.
March 2, 1995	Earthquake 3.0	Tupper Lake, NY	N/A	N/A	No reference and/or no damage reported.
July 31, 1997	Earthquake 3.2	Lyons Falls, NY	N/A	N/A	No reference and/or no damage reported.
April 20, 2000	Earthquake 3.8	Newcomb, NY	N/A	N/A	Felt at Clifton Park, Crown Point, Greenwich, Ilion, Indian Lake, Lake Bonaparte, Newcomb, Northville, Queensbury, Saranac Lake, Tupper Lake, Vermontville and Wells. Felt at Keene and Swanzey, New Hampshire; Addison, Moretown, Montpelier and Northfield, Vermont. Also felt at Brigham and Sherbrooke, Quebec, Canada.





## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
February 3, 2001	Earthquake 3.2	Bath, NY	N/A	N/A	No reference and/or no damage reported.
April 20, 2002	Earthquake 5.1	Au Sable Forks, NY	DR-1415	Yes	Approximately 12 residents throughout the County reported specific damage to WCDCR, including cracked foundations and walls, structural damage, broken doors and windows, and septic system and other utility damage.
July 24, 2007	Earthquake 3.1	East Berne, NY	N/A	N/A	No reference and/or no damage reported.
February 27, 2008	Earthquake 2.7	Howes Cave, NY	N/A	N/A	No reference and/or no damage reported.
February 18, 2009	Earthquake 2.7	East Berne, NY	N/A	N/A	No reference and/or no damage reported.
February 20, 2009	Earthquake 2.7	Berne, NY	N/A	N/A	No reference and/or no damage reported.
February 23, 2009	Earthquake 2.1	Berne, NY	N/A	N/A	No reference and/or no damage reported.
March 22, 2009	Earthquake 2.8	Berne, NY	N/A	N/A	No reference and/or no damage reported.
May 18, 2009	Earthquake 3.0	Berne, NY	N/A	N/A	No reference and/or no damage reported.
October 21, 2009	Earthquake 2.9	East Berne, NY	N/A	N/A	No reference and/or no damage reported.
December 13, 2009	Earthquake 3.1	Berne, NY	N/A	N/A	No reference and/or no damage reported.
June 24, 2010	Earthquake	Ottawa, Canada	N/A	N/A	An earthquake centered north of Ottawa, Canada was felt in the Hudson Valley and elsewhere in New York State and across a wide swath of the northeast United States. There were reports of people having felt the event in Warren County, New York. Chestertown residents reported having felt it. There were no reports of injuries or damages in the County.
August 23, 2011	Earthquake 5.8	Mineral, Virginia	DR-4044 (Washington D.C.) DR-4022 (Virginia)	No	A 5.8 earthquake occurred during the afternoon of August 23 <sup>rd</sup> when a fault near Mineral, VA ruptured. It damaged older buildings, shut down much of Washington D.C. and impacted people from New England to the Carolinas. Many buildings in Virginia and Washington D.C. were damaged as a result of this event.
January 23, 2012	Earthquake 2.3	New York	N/A	N/A	No reference and/or no damage reported.
August 25, 2013	Earthquake 2.7	6 miles S/SE of Warrensburg, NY	N/A	N/A	The USGS confirmed a minor earthquake occurred in the Glens Falls area on the morning of August 25 <sup>th</sup> . The 2.7 earthquake was centered approximately 6 miles south/southeast of Warrensburg. Residents of Glens Falls, Queensbury, Lake George, and Lake



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
					Luzerne area all reported having felt the earthquake.
July 24, 2014	Earthquake 1.6	9 miles NW of Hadley, NY	N/A	N/A	No reference and/or no damage reported.
November 13, 2014	Earthquake 1.6	13 miles NW of Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
February 2, 2015	Earthquake 1.9	19 miles NW of Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
May 25, 2015	Earthquake 1.3	19 miles NW of Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
July 11, 2017	Earthquake 2.5	7 miles NW of Barker, NY	N/A	N/A	No reference and/or no damage reported.
March 21, 2018	Earthquake 2.7	6 miles NW of Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
May 31, 2019	Earthquake 2.6	4 miles NW of Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
March 11, 2020	Earthquake 3.1	South Glens Falls, NY	N/A	N/A	No reference and/or no damage reported.
March 29, 2020	Earthquake 2.6	7 miles N of Lyndonville, NY	N/A	N/A	No reference and/or no damage reported.
July 14, 2021	Earthquake 2.8	5 miles NW of Massena, NY	N/A	N/A	No reference and/or no damage reported.
March 15, 2022	Earthquake 2.6	3 miles SW of Warsaw, NY	N/A	N/A	No reference and/or no damage reported.
July 27, 2022	Earthquake 2.5	1 mile SW of Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
February 6, 2023	Earthquake 3.8	0.5 miles NE of West Seneca, NY	N/A	N/A	No reference and/or no damage reported.

Source(s): NYS DHSES 2014; USGS 2023; FEMA 2016

DR Major Disaster Declaration (FEMA)  
 FEMA Federal Emergency Management Agency  
 N/A Not Applicable  
 NY New York  
 USGS U.S. Geological Survey



### E.1.2 Extreme Temperature

Information regarding specific details of temperature extremes in Warren County is scarce; therefore, previous occurrences and losses associated with extreme temperature events are limited. Table H.2 summarizes the extreme temperature events in the County from 2000 through 2023.

**Table E.2. Extreme Temperature Events between 2000 and 2023**

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
March 8, 2000	Excessive Heat	N/A	N/A	The season's first Bermuda type high pumped unseasonably warm air into eastern New York on March 8 and March 9. Temperatures soared well into the 60s at most locations, and touched 70 in a few spots. Even across the Adirondacks, readings climbed well into the 50s to near 60. At the Albany International Airport, the high on March 8 of 66 degrees, eclipsed the old record of 64 set in 1942. On March 9, the high reached 68 degrees, replacing the old record of 66 established in 1977.
January 28-29, 2009	Winter Storm	N/A	N/A	A winter storm spread a significant wintry mix of precipitation across eastern New York State, with heavy snow and sleet across much of the southern Adirondacks into the Lake George Saratoga region. Snow and sleet amounts ranged from 8 to 12 inches across the southern Adirondacks and the Lake George Saratoga region. This wintry mix resulted in the closure of numerous schools and businesses across east central New York for both Wednesday and Thursday mornings, and also created treacherous travel conditions. Snowfall totals in Warren County ranged from 8 to 9 inches in the city of Glens Falls.
February 18, 2009	Winter Weather	N/A	N/A	Winter storm system swept northeast across eastern New York State early Thursday morning, preceded and accompanied by moderate to locally heavy wet snow. The snow began Wednesday afternoon and tapered off early Thursday morning. The heaviest snowfall amounts occurred across the Lake George Saratoga region, where 6 to 10 inches fell.
February 23, 2010	Heavy Snow	N/A	N/A	<p>A powerful storm impacted the region, the second in just a couple of days bringing heavy rainfall and a heavy wet snow to the local area. The heavy wet snow resulted in additional and continued widespread power outages across east central New York, downed trees and power lines, treacherous travel, road closures, train delays, building collapses and snow emergencies.</p> <p>In Warren County, up to 2 feet of snow fell in the west portion of the county in the higher elevations. Route 9N at Pinewoods Road in the Town of Lake Luzerne was reported closed for a couple of hours late Tuesday evening, February 23rd, due to downed power lines. No property damages were reported. Snowfall totals in Warren County ranged from 10.5 inches in</p>

**Commented [MM4]:** Reference Hazard Event History from the 2016/17 plan includes information on Severe Winter Weather, but information on extreme heat events was not located.

**Commented [MM5R4]:** NOAA data on excessive heat added.



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				the City of Glens Falls to 21.3 inches at the Town of Lake Luzerne.
February 25, 2010	Winter Storm	N/A	N/A	<p>This storm system produced a widespread swath of heavy wet snow across the greater Capital District and surrounding area, the Lake George Saratoga region, the Mohawk River Valley, Schoharie Valley and southern Adirondacks during the day Friday. Snowfall rates of 1 to 2 inches per hour occurred, beginning during the early morning hours, and persisting until late afternoon.</p> <p>Snowfall amounts reached 12 to 15 inches across northern portions of the Capital Region extending into the east central Mohawk River Valley and Lake George Saratoga region. The heavy snow created treacherous travel conditions for the morning and evening commutes on Friday, with numerous accidents reported, including along portions of the Adirondack Northway, as well as Interstate 90. The heavy wet snow also led to numerous school and business closings across much of eastern New York on Friday.</p> <p>Snowfall totals in Warren County ranged from 4 inches at Warrensburg to 24 inches at Garnet Hill in North River hamlet.</p>
July 21, 2011	Excessive Heat	N/A	N/A	<p>Bermuda high pressure dominated the region with broad southwest flow aloft. This flow ushered in hot and humid air. Temperatures across much of east central New York warmed well into the 90s with some locations reaching the century mark in the mid Hudson Valley. On Friday July 22nd in Dutchess County, Rhinebeck reached 104 degrees, Dutchess County Airport in Poughkeepsie reached 102 degrees and Mills Norre State Park came in with 100 degrees. In Columbia County, 101 degrees was reported in Hudson at the Columbia County Airport. The most oppressive day was Thursday, July 21st, due to very high dew points in the 70s. The high humidity, combined with temperatures in the 90s, resulted in heat indices of 105 to 110 degrees up the Hudson River Valley. The New York Independent System Operator (NYISO) reported that New York State's power consumption on the 21st peaked between 4 pm and 5 pm EDT and was the third highest peak on record. A weak boundary marked by a shift in winds and lower dew points moved southward across east central New York on Friday, July 22nd. Dew points dropped into the 50s in the wake of the boundary. However, the boundary did not reach the mid Hudson Valley until late in the day, and this was too late to bring any relief to the oppressive heat and humidity. The boundary dissipated across the area Friday evening. On Saturday July 23rd, temperatures warmed in the 90s, and with dew points in the upper 60s and lower 70s, resulted in heat indices of 100 to 104 degrees across the</p>



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Capital District, mid Hudson Valley, southern Taconics and southeastern Catskills.
December 10-11, 2013	Winter Weather	N/A	N/A	As very cold air passed over the relatively warm water of Lake Ontario, a heavy, long-lasting band of lake effect snow developed on the evening of the 10 <sup>th</sup> , extending east across the entire western and southern Adirondacks. By the time the band ended late in the evening of December 11th, over one foot of snow was common across the western Adirondacks. Snowfall totals included 4.5 inches at Gore Mountain in Warren County.
December 14-15, 2013	Winter Storm	N/A	N/A	A light snow slowly spread across New York State from southwest to northeast during the day on December 14 <sup>th</sup> , followed by a steadier and heavier snowfall moved across the region during the evening hours and into the overnight. Snow fell at rates in excess of one inch per hour over much of the region and snow rates locally were as high as up to three inches per hour at times. The bulk of the accumulating snow was finished by the late overnight hours, but light snow showers and flurries continued into the mid-morning hours, especially across the Adirondacks and Capital Region. By the end of the storm, many places around the eastern Catskills, Capital Region and Lake George Saratoga Region received around a foot of snowfall. Snowfall totals in Warren County ranged from 9 inches at Brant Lake hamlet to 12.2 inches at the Town of Lake Luzerne.
February 13-14, 2014	Heavy Snow	N/A	N/A	<p>An exceptional winter storm impacted all of eastern New York between Thursday, February 13th and the morning of Friday, February 14th. The snow began falling in the morning hours at rates of up to three inches per hour, causing significant travel issues across the region. After a late afternoon break in the snowfall, heavy precipitation returned in the late evening hours. Once again, the snow fell at significant rates of up to 3 inches per hour. In addition, lightning and thunder accompanied the snow across far southern and eastern areas at times as well. By the time snow ended, between one and two feet of snow fell across much of the Lake George Saratoga Region, with lower amounts of 4 to 10 inches across the Adirondacks. Very strong winds, gusting as high as 40 mph, occurred as the storm pulled away. This led to significant blowing and drifting of the snowfall through the entire day on February 14th.</p> <p>As a result of the storm, Governor Andrew M. Cuomo declared a state of emergency for the Mid-Hudson as well other counties, including Warren, across east central New York. Restrictions were put on travel. Many towns and cities had difficulty with snow removal, as much of the snowfall also remained from a recent early February snowstorm as well. The</p>



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				weight of snow caused a few roof collapses and power outages across the region. Snowfall totals in Warren County ranged from 6 inches at North Creek hamlet to 12 inches at the Town of Lake Luzerne.
November 26-27, 2014	Nor'Easter / Snowstorm	DR-4204	No	An early season winter storm impacted eastern New York State during Thanksgiving. The storm began the morning of the 26 <sup>th</sup> and once the snow began, it increased in intensity, falling at rates at or greater than one inch per hour. Temperatures dropped to or below freezing across the entire region. There were heavy bands of snow occurring in some locations, especially across the Taconics, Mohawk Valley and southeastern Adirondacks. Snowfall totals ranged from six to 12 inches, with up to 15 inches in the southeastern Adirondacks. The weight of the snow caused power outages in the area, especially across the mid-Hudson Valley. Warren County DPW reported numerous damages, including automobile damages from falling trees and icy conditions, transportation blockages, and phone wires falling on and entangling a truck. Snowfall totals in Warren County ranged from 10 inches at the City of Glens Falls to 14.5 inches at North Creek hamlet.
January 7, 2015	Extreme Cold/Wind Chill	N/A	N/A	Behind an arctic cold front, bitter cold air moved into the region for the night of Wednesday, January 7th. Overnight lows were below zero in most areas, with temperatures as low as -10 to -30 degrees over the Adirondacks and the Lake George and Saratoga Region. With strong northwesterly winds in place, this allowed for winds chill values to be as low as -40 degrees during the late-night hours into the morning hours on Thursday, January 8th. Due to the dangerously cold temperatures, many towns and cities opened shelters and warming stations for residents who needed a place to stay overnight. Many school districts also delayed the start of school due to the extremely cold temperatures and low wind chill values.
February 15, 2015	Extreme Cold/Wind Chill	N/A	N/A	Behind a rapidly developing coastal storm, an extremely frigid Arctic air mass pour into the region from the north, beginning during the late morning hours on Sunday, February 15th. With the developing storm just east of the region, a strong pressure gradient allowed for very strong winds. Northwest winds frequently gusted over 30 MPH, with some gusts as high as 46 MPH through the evening hours. Temperatures fell quickly through the day and dropped below zero for Sunday night into the morning of Monday, February 16th. Some temperatures were as cold as 30 degrees below zero. With winds continuing to be gusty during the overnight and morning hours, wind chill values dropped as low as 15 to 45 degrees below zero.





## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				With much of the month experiencing cold temperatures, many towns and cities continued to keep warming shelters open.
February 13, 2016	Extreme Cold/Wind Chill	N/A	N/A	<p>Behind an Arctic cold front, very cold temperatures poured into the region upon brisk northwesterly winds. Temperatures dropped through the day on Saturday, February 13th, reaching lows of 8 to 33 degrees below zero across eastern New York on Saturday night. Along with winds gusting 20 to 40 MPH, wind chill values reached 15 to 45 degrees below zero for Saturday night into Sunday morning.</p> <p>The cold temperatures and low wind chills resulted in several water main breaks across the region. About 60 residents of an elderly care facility in Hoosick had to spend the night at a fire station as a result of a burst water pipe. In addition, the Red Cross responded to 17 emergency calls over the weekend, including for house fires in Albany, Schodack and Gilboa. Around \$3000 of aid was given to families affected by these fires.</p>
February 12, 2017	Extreme Cold/Wind Chill	N/A	N/A	<p>Two low pressure systems approached the northeastern US on Sunday, February 12, with snowfall breaking out over the local area around sunrise. The snow was heavy during the morning and early afternoon, with accumulation rates of 1 to locally 2 inches per hour at times. The snow was wet and dense and readily clung to trees.</p> <p>In total, 7 to 12 inches of snowfall occurred through most of the local area, with lesser totals over southern portions of the region where sleet occurred. Car accidents were reported, and snow emergencies were in effect throughout the region, and Route 28 in Herkimer County was closed for a time due to several accidents. On February 13, strong winds developed on the back side of the system. The strongest winds targeted the Catskills and Mid-Hudson Valley, where several trees were downed and over 14,000 power outages were reported. Dutchess County Airport in Poughkeepsie recorded a 59 mph wind gust.</p>
December 22, 2017	Winter Storm	N/A	N/A	<p>A complex storm system brought snow and a wintry mix to the region on Friday, December 22nd through Saturday, December 23rd, 2017. The precipitation started out as snow on Friday, but transitioned to a wintry mix by Friday night. Freezing rain lingered through the day Saturday as a warm front lifted through the region, especially for sheltered mountain valley areas. Snowfall totals ranged from a trace in the Mid-Hudson Valley up to 8.5 inches in the Adirondacks (Hamilton county) along with light icing as well. A few spots in the Mohawk Valley and Saratoga Region saw up to two tenths of an inch of ice.</p>
February 7, 2018	Winter Storm	N/A	N/A	<p>A winter storm brought mixed wintry precipitation to the region. Precipitation began as snow during the morning hours but changed to a mix of sleet, freezing rain and snow during</p>



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				the afternoon hours, mixing as far north as the town of Schenectady. Precipitation transitioned back to snow during the evening hours before exiting the region northwest to southeast. Snowfall and sleet totals ranged from 1 inch to 12 inches, with the higher totals generally north and west of the Greater Capital District.
July 1, 2018	Excessive Heat	N/A	N/A	A hot and humid airmass brought excessively high heat indices to eastern New York from the beginning of July through the Independence Day holiday. Temperatures soared as high as 99 degrees on July 1st, the hottest day of the stretch. Combined with dewpoints in the mid-70s, heat indices reached near 110 degrees in the warmest valleys. July 5th marked the sixth consecutive day reaching a temperature of 90 degrees at Albany and Glens Falls, and a seventh consecutive day at Poughkeepsie. In addition to the hot daytime temperatures, overnight low temperatures only falling into the 70s was common, which exacerbated heat-related problems. The extensive heat prompted the opening of many cooling centers across the region.
November 15, 2018	Winter Storm	N/A	N/A	A strengthening coastal low pressure system moved along the Atlantic shoreline November 15th and 16th, bringing accumulating snow and mixed precipitation to eastern New York. The Mid-Hudson Valley and eastern Catskills were hit hardest with 8 to 14 inches of snow, most of which occurred during the evening hours. The snow spread in during the evening rush hour with one to three inches per hour accumulation, snarling traffic and resulting in numerous accidents. The southern Adirondacks also saw 6 to 12 inches of snowfall, while totals for the remainder of eastern New York generally ranged from 4 to 8 inches. The snow changed to sleet and freezing rain overnight in many areas with minimal ice accretion. It changed back to snow during the morning hours of the 16th before ending.
January 19, 2019	Winter Storm	N/A	N/A	The largest snowstorm to date in the 2018-19 winter occurred on January 19th and 20th across eastern New York. Low pressure formed over the lower Mississippi Valley and lifted northeast across the Tennessee Valley during the night of the 19th before moving along the Mason-Dixon line on the 20th. Strong rising motion occurred as southerly winds aloft transported moist air northward, which was lifted over the cold airmass in place over eastern New York. Snowfall broke out during the afternoon of the 19th, continuing heavy at times into the evening and overnight hours before ending during the morning of the 20th. The strong southerly flow brought above-freezing air aloft into the region, causing the snow to turn to sleet as far north as the Capital District and northern Catskills for a time before turning back to snow. Further south, the air aloft was warm enough to turn the



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				precipitation to freezing rain with ice accretion of one to three tenths of an inch over portions of the southeast Catskills, Mid-Hudson Valley, and southern Taconics.
July 20, 2019	Excessive Heat	N/A	N/A	<p>A heat wave gripped eastern New York from July 19th through the 21st. Temperatures soared into the low to mid-90s with dewpoints in the low to mid-70s. This resulted in heat index values in the 100 to 110 range in the warmest spots of the Hudson Valley. Saturday, July 20th was the hottest day for most areas. Due to the excessive heat, area cities extended hours for pools and cooling centers, and Saturday's races at the Saratoga Race Course were cancelled due to the heat for the first time since August 2006.</p> <p>The hot and humid airmass provided fuel for thunderstorms that formed along the Lake Ontario shoreline during the late afternoon of the 20th. Two clusters of storms moved from the Mohawk Valley through the Capital District and into the Taconics during the evening, resulting in several reports of wind damage. The storms knocked out power to over 1,700 customers in Schenectady and Saratoga Counties.</p>
December 29, 2019	Winter Storm	N/A	N/A	A complex winter storm brought a mix of rain, snow, sleet and freezing rain to the region from the evening of Sunday, December 29th, lingering through the morning of Tuesday, December 31st, 2019. Heavy accumulations of ice impacted portions of the eastern Catskills, Mohawk Valley and the southern Adirondacks during this time frame. There were approximately 10,000 people without power across the state due to a combination of icy conditions and strong winds bringing down trees and power lines.
March 23, 2020	Winter Storm	N/A	N/A	A late season snowfall impacted the region on Monday, March 23rd, 2020. This was brought on by an anomalously cold air mass interacting with a coastal low pressure system. Snowfall totals ranged from an inch in the Mid-Hudson valley up to almost 10 inches in the southern Adirondacks and northern Lake George Saratoga region. The lower amounts were mainly confined to the Lower Hudson Valley due to a rain and snow mix throughout much of the day. Snow intensity increased during the late afternoon and early evening hours impacting the evening commute. As a result, a tractor trailer crashed on Interstate 87 South prompting portions of the interstate to be closed.
February 3, 2022	Winter Storm	N/A	N/A	A prolific winter storm began on Thursday, February 3 and continued into Friday, February 4. Precipitation began as rain for most areas on February 3 with the exception of the Adirondacks which began as a mix of rain and snow. Colder air gradually pushed southward into the overnight and early morning hours of February 4 resulting in a changeover to a wintry mix of sleet, freezing rain and snow. Most locations picked up 1 to 2 inches of liquid equivalent precipitation from



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				this event with the majority of it falling as one or multiple types of frozen precipitation. Precipitation ended during the afternoon hours on February 4. Utility companies noted that more than 50,000 customers lost power from the storm across the Hudson Valley, most of them in eastern Ulster County. At least 44 utility poles broke and more than 900 power lines came down as a result of the snow and ice with more than 500 individual damage locations.
November 18, 2022	Severe Winter Storm	EM-3589	N/A	Following the passage of a strong cold front, bands of lake effect snow developed off Lake Ontario impacting portions of the Adirondacks and Mohawk Valley and also extending into the Hudson Valley. This resulted in multiple car accidents across the Hudson Valley with one occurring Sunday morning and the others Sunday evening. Additionally, the band of lake effect snow over Herkimer County resulted in several inches of accumulation over parts of the county. In addition to the snows, it was also blustery with winds gusting between 25-45 mph over the area.
December 23, 2022	Severe Winter Storm	EM-3590	N/A	Two separate frontal systems merged to form a powerful winter storm over the Great Lakes from December 22 to December 24 bringing multiple hazards to the region including heavy rain, snow, strong winds and a very cold air mass in its wake. Widespread rainfall amounts of 1 to 3 inches were observed with some localized amounts of 4 inches. The combination of the rain and snowmelt in some places resulted in some flooding and some creeks to overflow their banks. Strong pre-frontal and post-frontal winds occurred with this event with widespread wind gusts of 40 to 55 mph. Such winds resulted in some downed trees and power lines as well as minor damage to some structures. A few power outages occurred as a result. Snow showers in the wake of the cold front brought mainly light accumulations. However, a pocket of more moderate snow occurred across the northern and central Taconics with snowfall amounts in the 4-to-8-inch range. Much colder air built into the region in the wake of the front which, combined with the strong winds, led to wind chill values as low as 15 to 25 degrees below zero in some areas.
January 22, 2023	Winter Storm	N/A	N/A	With eastern New York in the cold sector of a coastal low pressure system, a swath of moderate to heavy snow fell across a good portion of the area Sunday evening/night into Monday before ending Monday afternoon. The winter storm proved impactful resulting in car crashes and power outages. Some schools and businesses also closed as a result of the storm.
March 13, 2023	Winter Storm	N/A	N/A	A powerful Nor'Easter resulted in widespread moderate to heavy wet snow and gusty winds across eastern New York March 13-March 15, 2023. Anywhere from 15 to 30 inches of snow with locally higher amounts in excess of 30 inches fell



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				over the SW Adirondacks and eastern Catskills. Valley locations received lesser amounts with totals generally ranging between 7 to 15 inches. A few locations across the western Mohawk Valley and mid-Hudson Valley received less than 6 inches of snow. Numerous downed trees and powerlines resulted in widespread power outages. According to the National Grid, approximately 141,000 customers lost power within the state of New York with most occurring within our county warning area. Some locations were without power for at least 1 or 2 days.

Sources: NYS DHSES 2014; USGS 2023; FEMA 2016  
NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center  
NWS National Weather Service  
NYS New York State

### E.1.3 Flood

Known flooding events that occurred from 1996 to 2022 are identified in Table E.3. With flooding documentation for New York State and Warren County being so extensive, not all sources have been identified or researched. Therefore, Table E.3 may not include all events that have occurred in the County.

Table E.3. Flooding Events in Warren County Between 1996 and 2022

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
January 19, 1996	Flooding	N/A	N/A	In Lake George Village widespread flooding occurred and seven families had to be evacuated. Many roads were closed throughout the county due to flooding including 16 county roads. Significant damage was also incurred to many state roads. Routes 9 and 9N were closed from Lake George north. Route 418 was closed at the Hudson River Bridge and along route 8 a 150 foot section was washed out between Brant Lake and Hague.
January 8, 1998	Flooding	N/A	N/A	From January 8 to January 12, the Hudson River flooded from its headwaters to where it crosses into Greene and Columbia Counties, due to a combination of significant rain and snowmelt. In Hamilton and Warren Counties, the river rose to heights that came close to the flood of record. Flood damage in this area was kept to a minimum due to its flow through undeveloped areas and vacation property which was secured for the winter.
April 1, 1998	Flooding	N/A	N/A	Due to rapid snowmelt at the end of March and beginning of April, rather severe flooding continued along the Schroon River in Warren County. The flood waters affected river front homes, State Highway 418 between Warrensburg and Thurman Station and forced the closure of a bridge at Starbuckville. The river at Riverbank crested at 9.3 feet during the afternoon of April 2.
February 28, 2000	Flooding	N/A	N/A	A warmup at the end of February, began melting the winter snowpack fairly quickly and helped break up an extensive ice pack on the upper Hudson and Mohawk Rivers. As a result, ice jams developed on the Mohawk and Hudson rivers. During the night of February 27 and 28, rainfall accumulated between one half and one inch and a half across eastern New York. The rains



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				exacerbated the runoff, which resulted in the flooding of the Mohawk and Hudson rivers, as well as some smaller streams. Most of the flooding was minor. There were no casualties directly related to this flooding, reported to the National Weather Service.
April 16, 2001	Flooding	N/A	N/A	he runoff from rapid snowmelt, caused the Schroon River in Warren County to rise out of its banks around midday, on April 16th. The gage at Riverbank reached the flood stage of 7.0 feet at that time. The river continued to swell, and did not crest until the gauge reached 10.1 feet, early on April 24. This was the highest level recorded in 50 years. Portions of Route 413 became inundated, as did many homes in the towns of Chester, Pottersville, Horicon and Warrensburg. A number of residents had to be evacuated and a few bridges were closed.
March 30, 2003	Flooding	N/A	N/A	An area of low pressure, moving along a slow moving cold front on March 29 and 30, produce 1 to 2 inches of rainfall across eastern New York. The rain, combined with seasonably mild temperatures, melted most of the remaining snow pack across much of eastern New York. The combination of the rain and mild temperatures, produced another significant runoff which caused some additional minor flooding.
April 2, 2004	Flooding	N/A	N/A	As much as three inches of rain fell between March 31 through April 2 across eastern New York. This rain combined with the last of the snow melt to produce an excessive runoff of water. As a result, the Schroon River in Warren County briefly reached above flood stage on the evening of April 2. No problems were reported to the National Weather Service as a result of this flooding.
May 1, 2006	Flooding	N/A	N/A	On May 1, at Riverbank, the Schroon River had some lingering flooding from heavy rainfall during the last week in April. The water level dropped below the 7-foot Riverbank flood stage at 18:45 EST.
April 20, 2007	Flooding	N/A	N/A	Warm temperatures from April 19th to April 24th led to rapid melting of a deep snowpack across much of the Adirondacks. Antecedent water equivalent in the snow pack ranged from 6 to 16 inches. This rapid melting led to flooding of many rivers that drain the Adirondacks. In addition, releases from Sacandaga Lake perpetuated the flooding on some rivers through the end of the month.
March 5, 2008	Flooding	N/A	N/A	A low-pressure system tracked northeast from the lower Ohio Valley on Tuesday March 4th, into south central New York State by Wednesday morning on March 5th. Abundant moisture was associated with this system, which led to widespread heavy rainfall across much of east central New York and western New England, which began late Tuesday night, and persisted into early Wednesday afternoon. Rainfall amounts of 1 to 3 inches fell during this event. This heavy rainfall, in combination with frozen ground and snowmelt led to flooding in many areas within the Capital Region, as well as within the Lake George and Saratoga region, the Schoharie Valley, the eastern Catskills and mid Hudson Valley.
April 9, 2008	Flooding	N/A	N/A	he melting of a deep snowpack led to moderate or higher river flooding across portions of the upper Hudson River basin, including the Schroon River, Lake Champlain, and the Great Sacandaga Lake. Snow water equivalents of nearly one foot began to melt during a warm period beginning around April 10th,





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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				and led to river flooding which persisted through the end of April. Along the Schroon River, at least one permanent home, along with a few summer camps were flooded. On the Hudson River near Schuylerville, a sod farm suffered estimated losses of \$225,000 due to prolonged submersion of sod in Hudson River flood waters. In addition, the New York State Canal Corporation was unable to open the Hudson-Champlain Canal in April due to high water levels.
March 13-31, 2010	Severe Storms and Flooding	DR-1899	Yes	Moderate to heavy rain fell across east-central New York State. The ground was already nearly saturated from recent snow melt, causing rivers and streams to run high. Flooding from this event caused damage to numerous roads in the northern section of Warren County. In the Town of Johnsburg, a bridge was reported washed out on Harrington Road due to a possible beaver dam break along Johnson Brook. Overall, the County had approximately \$25,000 in property damage from this event.
October 1, 2010	Flooding (Remnants of Tropical Storm Nicole)	N/A	N/A	The remnants of Tropical Storm Nicole brought very heavy rains to east-central New York State. Rainfall totals from this storm ranged from three to nine inches, resulting in widespread river and small stream and urban flooding, including water in basements. In Warren County, there was standing water reported in the City of Glens Falls at the intersection of Sherman Avenue and Elm Street due to the heavy rains.
March 8-12, 2011	Ice Jam	N/A	N/A	An ice jam began to form on March 7 <sup>th</sup> near the Route 28N bridge in the hamlet of North Creek (Town of Johnsburg). The water that backed up from the ice jam began flooding Old River Road on March 10 <sup>th</sup> , prompting the evacuation of some residents and forced the closing of the road. The water began to recede on March 13 <sup>th</sup> when the ice jam release and moved downstream. As the ice jam moved down the river, it ripped trees from the river bank and then became lodged along the Route 418 bridge in the Town of Thurman on the evening of March 13 <sup>th</sup> . Overall, damage was reported at the County fish hatchery in the Town of Warrensburg and damage to a recreational property from North Creek downstream to Lake Luzerne.
April 28-30, 2011	Severe Storms, Flooding, Tornadoes, and Straight-Line Winds	DR-1993	Yes	Heavy showers and thunderstorms impacted the western and central Mohawk Valley, Adirondack region, and the Upper Hudson River Valley, including the Lake George Region (Warren County). Thunderstorms produced severe weather and very heavy rainfall. The combination of the rainfall and rapid snowmelt due to warm temperatures led to increased runoff and rapid river rises.  In Warren County, flooding from this event covered nearly two-thirds of the County. Flooding occurred along the Hudson River in the County from North River southward to the Saratoga County line. Numerous municipalities reported flooding of roadways, houses, and riverside camps. Some properties had several feet of water in them. Many major roadways were closed



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>in the County due to flooding. The North Creek Trailer Park on Route 28 in the Town of Johnsbury was evacuated because water from the Hudson River entered the park. A mudslide in excess of 200 feet occurred on 13<sup>th</sup> Lake Road in North River/North Creek. In the hamlet of North Creek (Town of Johnsbury), a couple hundred feet of railway tracks were reported under two to five feet of water with several buildings at the train station being flooded as well. In the Town of Stony Creek, the 1,000 Acres Golf Course was flooded with the 9<sup>th</sup> green under eight feet of water. Flood water receded through April 30<sup>th</sup>. The County had approximately \$676,000 in property damage from this event.</p>
May 27 – June 2, 2011	Flooding	N/A	N/A	<p>Flooding caused severe damage along a thin line through the County and impacted the Towns of Stony Creek, Thurman, Warrensburg, Horicon, and Bolton. The County had \$13.125 million in damages from this event.</p>
August 28-30, 2011	Hurricane Irene	DR-4020	Yes	<p>The greatest impact of Irene in eastern New York State was heavy to extreme rainfall which resulted in catastrophic flooding across portions of the region. Rainfall amounts averaged between four and eight inches with amounts of up to 12 inches falling in the eastern Catskills and Schoharie Valley. Three to six inches were common across the Lake George and Saratoga regions. The rainfall resulted in widespread flash flooding and river flooding across eastern New York State. Bridges were closed on major roadways in this area of the State.</p> <p>In Warren County, there was severe wind and flood damage throughout. In the Town of Lake George, Route 9N was flooded from the Route 9/9N split south to the ramp for Exit 21 for the Northway. Route 9L was also flooded between Route 9N and Bay Road. Two of the seven docks in the Village of Lake George floated off and were crushed.</p>
October 27 – November 8, 2012	Hurricane Sandy	EM-3351	Yes	<p>Hurricane Sandy moved up the east coast of the United States during the last week of October 2012. As the storm made landfall in southern New Jersey, bands of rain moved across eastern New York State. Rainfall totals in this part of the State were minimal and did not cause any flooding. The storm did bring strong and gusty winds to the area, bringing down trees and power lines across the region. Wind gusts ranged from 40 to 60 mph.</p> <p>In Warren County, wind gusts of 65 mph pushed down the length of Lake George, creating waves that threatened to spill over the shoreline. Some of the docks along the Lake were damaged but flooding did not occur. In Glens Falls, trees and wires were knocked down from the winds.</p>
February 1, 2013	Ice Jam	N/A	N/A	<p>Massive ice chunks of up to 10 feet thick in spots, broke off near North Creek in Warren County. This created an ice jam on the upper Hudson River near the Town of Thurman. As the ice</p>



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				chunks became lodged, they caused the water behind them to jump the banks, with more than 100 yards of River Road in Thurman over 10 feet of ice chunks. The water receded by midday and the town highway department had to use loaders and backhoes to remove the ice from the roadway.
June 28, 2013	Severe Storms and Flooding	DR-4129	Yes	<p>Heavy rain fell across the Mohawk Valley and western Adirondacks with rates of one inch per hour with three to five inches of rain falling in total. This event, with the combination of a previous rainfall event, led to significant flash flooding across both the Mohawk Valley and Adirondacks. Many roads were washed out and closed. Urbanized areas along the Mohawk River experienced flooding as well. Many communities declared state of emergencies and President Obama signed a major disaster declaration for New York State which included Herkimer, Montgomery and Warren Counties.</p> <p>In Warren County, the Town of Johnsburg experienced severe flooding from this event. Flash flooding occurred in the Bakers Mill section of the Town. Water rescue teams were deployed to several homes that were threatened by flooding. A state of emergency was declared for the Town as a result of flooding.</p>
January 12, 2014	Ice Jam	N/A	N/A	Harrington Road in the Town of Thurman had ice up to scraper banks in some locations and Glen Creek Road was closed due to flooding caused by an ice jam on the Hudson River.
April 13-21, 2014	Flooding	N/A	N/A	<p>Significant snow pack began to melt as a result of an extended period of warm weather. Up to 10 inches of liquid equivalent started melting between April 8<sup>th</sup> and April 15<sup>th</sup>. The snow melt caused many rivers and streams in and around the Adirondacks to become very high with a few reaching flood stages just from the snow melt.</p> <p>Heavy rain began to fall in the region on April 15<sup>th</sup>, bringing up to two inches of rain in the area. The rainfall, combined with the snow melt, caused many rivers to reach moderate flood stage. By April 21<sup>st</sup>, all rivers in the area were below flood stages.</p> <p>In Warren County, the Schroon River reached major flood stage and remained at this stage for several days. The flooding caused several private roads of homes and vacation properties to be impacted by water. Roads were closed due to flooding in the County.</p>
May 13-22, 2014	Flooding	N/A	N/A	A culvert was washed out in the County.
January 13, 2018	Flooding	N/A	N/A	After a frigid end of December and beginning of January, an unseasonably warm airmass was pumped into New York on January 12th on southerly winds. The temperatures reached the 50s and 60s during the day. Showers also developed in the warm



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				airmass ahead of a cold front and were heavy at times, with some locations receiving one to three inches of rainfall. The combination of warm temperatures and heavy rainfall caused river ice to dislodge and resulted in ice jams in spots. Flooding occurred due to a combination of ice jam movement and heavy rainfall. Several roads were closed or damaged and a water rescue had to be performed near the Hoosic River in Rensselaer County. After the strong cold front passed, many ice jams and their associated flooding froze back in place, resulting in road closures continuing for several days in some areas.
February 22, 2018	Flood	N/A	N/A	<p>A large ice jam remained in place on the Mohawk River for much of the month of February and was one of the biggest ice jam seen in decades, according to Union College professor John Garver.</p> <p>The ice jam stretched up to 17 miles from Rexford to Crane Hollow throughout the month in February. The ice jam mainly remained in place into late February and received a large amount of media and government attention. Albany County was concerned about impacts downstream if the jam were to give way quickly. Temperatures skyrocketing into the 60s and 70s on February 20-21 coupled with around 0.50-1.00 rainfall on the 19th over the Mohawk basin allowed river levels to rise and flooding occurred by the 21st within the Stockade neighborhood of Schenectady and across the river in Scotia, as well as backwater flooding of the Alplaus Kill. A substantial portion of the ice jam gave way during the early morning hours of the 22nd, leading to concern for flooding in the downstream communities, but it turned out that impacts were minimal. There were some road closures in the Rotterdam Junction and Schenectady area due to the ice jam movement and breakage. The remainder of the jam gradually broke up over the next week or so with little impact.</p>
April 20, 2019	Flood	N/A	N/A	Heavy rain, combined with snow melt from the Adirondacks, caused the Schroon River at Riverbank to rise above flood stage for several days. River levels reached moderate flood stage on Saturday, April 20th and remained there through Thursday, April 25th. The high water levels resulted in water making its way into numerous homes and onto several roads across northern Warren county. No homes were evacuated.
November 1, 2019	Flood	N/A	N/A	The Hudson River at Hadley reached moderate flood stage at 1000EST 1 November, rising to a crest of 17.96 feet at 1545EST. It fell below moderate flood stage buy 0118EST 2 November. The floodwaters reached some riverside streets in the Lake Luzerne area, including Stephen Lane where residents were evacuated. A residence on East River Drive sustained damage to basement walls as a result of the flooding.
February 18, 2022	Flood	N/A	N/A	A storm system pushed across the region during February 17-18, 2022. Warm air pushed northward into the region along with periods of rainfall before a cold front brought the return of windy



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				and colder weather. A convective line of gusty showers also accompanied the cold frontal passage. Some locations picked up over 1 inch of rainfall which led to minor flooding in a few locations.
April 8, 2022	Flood	N/A	N/A	A slow-moving frontal system produced widespread heavy rainfall and flooding across eastern New York from April 7-8, 2022. Rainfall amounts between 1.50 and 3.00 inches were common, though a few localized areas received upwards of 4.50 inches. Periods of light to moderate rainfall began during the daytime hours on April 7 with the steadiest and heaviest rainfall arriving during the evening hours on April 7 into the overnight hours on April 8 before ending. This heavy rainfall led to over a dozen rivers to exceed minor flood stage with a few rivers reaching moderate flood stage. For some, it took days after the event for waters to recede. In addition to the heavy rainfall and widespread flooding, strong winds developed across portions of the Taconics with peak gusts in the 35-50 mph range. The combination of rain and wind led to only sporadic power outages.

Source: NYSDEC 2015; FEMA 2015; NOAA-NCDC 2015; NWS 2015

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

DR	Federal Disaster Declaration
EM	Federal Emergency Declaration
FEMA	Federal Emergency Management Agency
IA	Individual Assistance
K	Thousand (\$)
M	Million (\$)
N/A	Not applicable
NCDC	National Climate Data Center
NOAA	National Oceanic Atmospheric Administration
NWS	National Weather Service
NYS DHSES	New York State Division of Homeland Security & Emergency Services
PA	Public Assistance
SHELDUS	Spatial Hazard Events and Losses Database for the U.S.
USACE	U.S. Army Corps of Engineer

### E.1.4 Severe Storm

Known severe storm events that occurred from 1978 to 2013 are identified in Table H.4. As severe storm documentation for New York State and Warren County is extensive, not all sources have been identified or researched. Therefore, Table H.7 may not include all events that have occurred in the County.

*Table E.4. Severe Storm Events between 1978 and 2013*

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
May 9, 1978	Tornado	N/A	N/A	F1 tornado traveled a distance of approximately 1.2 miles in an area between Lake Luzerne and Glens Falls



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
April 18, 1985	Tornado	N/A	N/A	F0 tornado was spotted between Route 149 and French Mountain Road. The total path of the storm was about 2 to 2.5 miles. Due to sparse population and hilly terrain, damage was limited. Some debris was found a mile or two from its original site.
July 19, 1989	Thunderstorm Wind	N/A	N/A	An early morning wave of thunderstorms produced hail and strong gusty winds. Wind damage caused downed trees, tree limbs, and power lines. Two persons were injured when a tree fell onto a vehicle during high thunderstorm winds.
July 6, 1999	Thunderstorm Wind	N/A	N/A	A cold front moved from the Great Lakes eastward across New York State on July 6. With sultry air in place, and favorable strong winds aloft, this front triggered the largest outbreak of severe weather in eastern New York since May 31st, 1998. A squall line developed around midday ahead of the front and produced the most damage. However, more thunderstorm cells continued developing and some of these became severe into the evening hours. Nearly every county in eastern New York experienced some wind damage. Rensselaer, Warren, Washington, Herkimer, Saratoga and Schenectady Counties were especially hard -hit. Powerful thunderstorms brought down trees and power lines in many localities. Unfortunately, a falling tree killed a camper located on Uncas Island on Lake George. Two other individuals were injured as they lost control of their car avoiding a falling tree at Diamond Point near Lake George.
August 9, 2001	Thunderstorm Wind	N/A	N/A	A lake breeze front off Lake Ontario, interacted with a hot and humid air mass, to trigger a thunderstorm cluster in western New York during the late afternoon of August 9. As the thunderstorm complex reached the Mohawk Valley, it evolved into a supercell. The supercell then developed into a mesoscale convective system (MCS) as it move into the Lake George / Saratoga region and into the northern Taconics. Wind damage then spread into Warren County, as power lines were blown down in both the villages of Lake Luzerne and Lake George.
June 6, 2005	Thunderstorm Wind	N/A	N/A	Trees and power lines down county-wide. A tree crashed through house in Queensbury. Part of Bay Road and Route 149 closed by downed trees or limbs. Additional trees fell on homes in Fort Edward, Granville, Queensbury and Argyle.
September 27, 2007	Thunderstorm Wind	N/A	N/A	A nearly stationary frontal boundary across central New York State gradually moved east during Thursday afternoon on September 27th. With a very warm, moist and unstable air mass in place to the east of this boundary, scattered strong to isolated severe thunderstorms developed across portions of eastern New York State Thursday afternoon and evening.
March 13 – 31, 2010	Severe Storms and Flooding	DR-1899	Yes	A low pressure system tracked northeast over northeastern United States on March 23rd, bringing a moderate to heavy rainfall to east central New York. The ground was already





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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				nearly saturated from recent snow melt, causing rivers and streams to run high. In Warren County, a bridge was reported washed out on Harrington Road in the Town of Johnsburg due to a possible beaver dam break along Johnson Brook. The County reported a total of \$25,000 in property damage.
October 1, 2010	Flooding (Remnants of Tropical Storm Nicole)	N/A	N/A	The remnants of Tropical Storm Nicole brought very heavy rains to east-central New York State. Rainfall totals from this storm ranged from three to nine inches, resulting in widespread river and small stream and urban flooding, including water in basements. In Warren County, there was standing water reported in the City of Glens Falls at the intersection of Sherman Avenue and Elm Street due to the heavy rains.
April 28-30, 2011	Severe Storms, Flooding, Tornadoes, and Straight-Line Winds	DR-1993	Yes	<p>Heavy showers and thunderstorms impacted the western and central Mohawk Valley, Adirondack region, and the Upper Hudson River Valley, including the Lake George Region (Warren County). Thunderstorms produced severe weather and very heavy rainfall. The combination of the rainfall and rapid snowmelt due to warm temperatures led to increased runoff and rapid river rises.</p> <p>In Warren County, flooding from this event covered nearly two-thirds of the County. Flooding occurred along the Hudson River in the County from North River southward to the Saratoga County line. Numerous municipalities reported flooding of roadways, houses, and riverside camps. Some properties had several feet of water in them. Many major roadways were closed in the County due to flooding. The North Creek Trailer Park on Route 28 in the Town of Johnsburg was evacuated because water from the Hudson River entered the park. A mudslide in excess of 200 feet occurred on 13<sup>th</sup> Lake Road in North River/North Creek. In the hamlet of North Creek (Town of Johnsburg), a couple hundred feet of railway tracks were reported under two to five feet of water with several buildings at the train station being flooded as well. In the Town of Stony Creek, the 1,000 Acres Golf Course was flooded with the 9<sup>th</sup> green under eight feet of water. Flood water receded through April 30<sup>th</sup>. The County had approximately \$676,000 in property damage from this event.</p>
May 27 – June 2, 2011	Flooding, Thunderstorm Wind, Hail (Memorial Day Storm)	N/A	N/A	A combination of individual storms caused severe damage along a thin line through the County and impacted the Towns of Stony Creek, Thurman, Warrensburg, Horicon, and Bolton. A swath of heavy rainfall which fell in just a few hours causing flash flooding, resulting in road closures with significant damage to many roadways, washed-out culverts and a least a couple of washed-out bridges. In addition, a few of the storms



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>were severe producing large hail up to the size of a golf ball and some trees were downed by strong thunderstorm winds. It was reported that seven area fire departments, three EMS crews, the Warren County Sheriff's Office, State Police, along with state, county and local highway departments all responded to the flooding.</p> <p>Numerous trees were reported down on wires in Chestertown, as well as in Thurman, and Warrensburg. Nickel size hail was reported in Chestertown and Stony Creek, quarter size hail was reported in Hague, ping-pong ball size hail was reported in Thurman, and golf ball size hail was reported in Warrensburg.</p> <p>The County had \$13.125 million in damages from this event.</p>
August 28-30, 2011	Hurricane Irene	DR-4020	Yes	<p>The greatest impact of Irene in eastern New York State was heavy to extreme rainfall which resulted in catastrophic flooding across portions of the region. Rainfall amounts averaged between four and eight inches with amounts of up to 12 inches falling in the eastern Catskills and Schoharie Valley. Three to six inches were common across the Lake George and Saratoga regions. The rainfall resulted in widespread flash flooding and river flooding across eastern New York State. Bridges were closed on major roadways in this area of the State.</p> <p>In Warren County, wind and flood damage occurred throughout the county. The most severe was limited to the Lake Champlain Watershed area, located on the eastern side of the County, and in the Lake George and West Mountain areas. In the Town of Lake George, Route 9N was flooded from the Route 9/9N split south to the ramp for Exit 21 for the Northway. Route 9L was also flooded between Route 9N and Bay Road. Two of the seven docks in the Village of Lake George floated off and were crushed.</p>
October 27 – November 8, 2012	Hurricane Sandy	EM-3351	Yes	<p>Hurricane Sandy moved up the east coast of the United States during the last week of October 2012. As the storm made landfall in southern New Jersey, bands of rain moved across eastern New York State. Rainfall totals in this part of the State were minimal and did not cause any flooding. The storm did bring strong and gusty winds to the area, bringing down trees and power lines across the region. Wind gusts ranged from 40 to 60 mph.</p> <p>In Warren County, wind gusts of 65 mph pushed down the length of Lake George, creating waves that threatened to spill over the shoreline. Some of the docks along the Lake were damaged but flooding did not occur. Numerous private boats were sunk or damaged. In Glens Falls, trees and wires were knocked down from the winds.</p>



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Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
June 28, 2013	Severe Storms and Flooding	DR-4129	Yes	<p>Heavy rain fell across the Mohawk Valley and western Adirondacks with rates of one inch per hour with three to five inches of rain falling in total. This event, with the combination of a previous rainfall event, led to significant flash flooding across both the Mohawk Valley and Adirondacks. Many roads were washed out and closed. Urbanized areas along the Mohawk River experienced flooding as well. Many communities declared state of emergencies and President Obama signed a major disaster declaration for New York State which included Herkimer, Montgomery and Warren Counties.</p> <p>In Warren County, the Town of Johnsbury experienced severe flooding from this event. Flash flooding occurred in the Bakers Mill section of the Town. Water rescue teams were deployed to several homes that were threatened by flooding. A state of emergency was declared for the Town as a result of flooding.</p>
July 8, 2014	Tornado	N/A	N/A	<p>A very warm and humid air mass was in place over the region on Tuesday, July 8th. The region was ahead of a strong cold front that was moving eastward from the Great Lakes Region. Aided by a strong jet streak aloft and a potent upper-level shortwave trough, the cold front triggered a line of thunderstorms that produced damaging winds across western and central New York. It continued to produce strong winds, which caused damage across the Adirondacks and Mohawk Valley and eventually into the Saratoga area, Capital Region and Hudson Valley as well. In addition, a weak, brief tornado also occurred in the southeastern Adirondacks in North Creek. The line of thunderstorms moved eastward and weakened as they reached the border with New England by the late evening hours.</p>
May 29, 2020	Tornado	N/A	N/A	<p>A couple of rounds of strong to severe thunderstorms impacted eastern New York during the afternoon and evening of the 29th. The first was a couple of isolated cells that produced sporadic wind damage from portions of the Capital District into the Glens Falls area. The second was a broken line of storms that produced a more widespread swath of wind damage in the greater Saratoga-Glens Falls area. An EF1 tornado formed within this line, impacting the area from Lake Luzerne to Glens Falls. Low-hanging wires resulted in the closure of Interstate 87 between exits 17 and 19. More than 8,000 customers lost power in Warren and northern Saratoga Counties due to the storms.</p>
August 29, 2020	Tornado	N/A	N/A	<p>Thunderstorms developed over portions of eastern New York during the afternoon of the 29th. A couple of these storms produced hail up to ping pong ball size. They later spawned two EF1 tornadoes in the towns of Stillwater and Schaghticoke, with damage to a couple of residences and a</p>



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				high school. An EFO tornado briefly touched down in southwestern Warren County. Sporadic wind damage was noted elsewhere.

Sources: FEMA 2015; NYSDEC; Robinson 1999

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

DR	Federal Disaster Declaration
EM	Federal Emergency Declaration
FEMA	Federal Emergency Management Agency
NCDC	National Climate Data Center
NOAA	National Oceanic Atmospheric Administration
NYS	New York State
NWS	National Weather Service
PA	Public Assistance
SHELDUS	Spatial Hazard Events and Losses Database for the U.S.
TSTM	Thunderstorms

### E.1.5 Severe Winter Storm

Known severe winter storm events that occurred in Warren County between 1996 and 2023 are identified in Table E.5. With severe winter storm documentation for New York State and Warren County being so extensive, not all sources have been identified or researched. Therefore, Table E.5 may not include all events that have occurred in the County.

**Table E.5. Winter Storm Events Between 1996 and 2023**

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
November 26, 1996	Winter Storm	N/A	N/A	On November 26, a low pressure system brought a combination of snow and freezing rain to parts of eastern New York. Over Warren and Washington Counties, snow and heavy freezing rain downed trees and power lines and caused numerous accidents. In Washington County, approximately 3,000 customers lost power.
January 24, 1997	Winter Storm	N/A	N/A	On January 24 and 25, low pressure moved from northern Indiana northeast to the Saint Lawrence Valley. The winter storm produced heavy snow over the southern Adirondacks, which occasionally mixed with sleet and freezing rain. Snowfall totals in Warren, Hamilton and northern Herkimer Counties ranged from 5 to 7 inches. Toward the end of the storm, the precipitation changed to a mix of freezing rain and sleet which caused icing on top of the snow pack.
March 14, 1997	Winter Storm	N/A	N/A	On March 14, a complex area of low pressure tracked from northern Ohio northeast to southern Ontario Canada. This system produced several hours of heavy snow across the southern Adirondacks, Catskills,



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				northern Saratoga County, Washington County and parts of the Mohawk Valley. The snow changed to sleet and eventually to freezing rain which caused significant icing. Snowfall totals generally ranged from 2 to 5 inches with up to 8 inches in Hamilton County. The icing resulted in treacherous driving conditions along with downed trees and power lines. Scattered power outages occurred across this region.
January 2, 1999	Winter Storm	N/A	N/A	<p>A deep area of low pressure moved from the Mississippi Valley into the central Great Lakes Region during the night of January 2 and January 3. With arctic air in place over New York State, a wintry mix of heavy sleet and freezing rain resulted. This mix of precipitation resulted in significant accumulations of ice across the region. Total melted precipitation exceeded an inch across the Mid-Hudson Valley.</p> <p>The storm resulted in hundreds of vehicular accidents or vehicles sliding off roadways. Two highways in Greene County (Route 23 and route 23A) were temporarily closed due to very slick conditions. Ice buildup downed power lines which caused 2,500 residents to be without power in the Mid-Hudson Valley and an additional 1200 customers without power in the Saratoga region.</p>
January 14, 1999	Winter Storm	N/A	N/A	<p>Extremely cold arctic air moved into Eastern New York on January 13 and January 14. At the same time an area of low pressure formed in Kentucky. This low tracked east into northern Virginia then turned north and moved through the Hudson Valley late on January 14 through January 15. The storm dumped heavy snow on the region followed by an extended period of sleet and freezing rain. The onset of the snow was accompanied by dangerously cold conditions with temperatures as low as 9 below zero. Snowfall amounts included 11 inches at both the Albany International Airport and Little Falls in Herkimer County. 15 inches of snow fell at Gloversville in Fulton County. In addition to the usual traffic disruptions, the weight of the snow and ice caused a roof to cave in at a bowling alley in Rotterdam in Schenectady county. A roof also collapsed at a farm in Mayfield Fulton county which killed a cow and injured several others. The Adirondack Northway was closed between Exits 17 and 23 from 10AM through 7PM on Friday the 15th due to very icy conditions.</p>
January 31, 2000	Winter Storm	N/A	N/A	<p>Low pressure formed in the Gulf States on January 29. There was a disparity of snowfall with this system. To the south, sleet and freezing rain mixed in, which held accumulations to the 4 to 7 inch range across the Mid Hudson Valley and southern Catskills. Six to 10 inch</p>



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>snowfall accumulations were common in the immediate Capital District. However, in the Mohawk Valley, just west of Amsterdam, and throughout the Western Adirondacks as well as the Lake George region, snow accumulated a foot or more. Most of the snow fell during the overnight hours on Sunday into Monday morning. To the west of Albany, snow fell heavily, at times in excess of 3 inches per hour.</p> <p>Specific accumulations included 7 inches at Albany, while East Caroga Lake got buried with 21, and 18 inches fell at Gloversville, both located in Fulton county. 17 inches fell at Fort Plain, Montgomery county and 16 at North Creek, Warren county. The storm once again closed many schools and some businesses. The snow removal effort was made more difficult due to the large amount of snow still left from previous storms.</p>
February 14, 2000	Winter Storm	N/A	N/A	<p>A low-pressure area developed over the Oklahoma panhandle early on February 13. This storm tracked northeast, reaching the Ohio Valley early on February 14, then across Pennsylvania and off the coast of Long Island by late in the day.</p> <p>The storm brought a potpourri of wintry weather to eastern New York, including snow, sleet, rain and freezing rain. A swath of 6 to 14 inches of snow fell across the Western Adirondacks, including 13 inches at Stillwater, and 7.5 inches at Indian Lake, both located in Herkimer county. Lesser amounts of snow fell across the remainder of the area. However, significant ice accumulated across the Saratoga-Lake George area. In this area, up to 3/4 of an inch of ice accretion was noted. The ice brought down some power lines near Scotia and Duaneburg in western Schenectady county. There were spotty power outages reported as well as some school and business closings.</p>
April 9, 2000	Winter Storm	N/A	N/A	<p>A strong cold front moved across eastern New York, then stalled to the east, over the Connecticut River valley late on April 8. Low pressure developed along this front, off Cape Hatteras. This storm strengthened as it moved due north along the front during the early morning hours of the 9th. Ample moisture was supplied by the warm air mass over eastern New England. Enough cold air was both advected into the region as well as brought downward by heavy precipitation to change the rain over to snow, and produce an unusually late season snowstorm. Snow, falling at the rate of 2 inches per hour, was common at the height of the storm. Gusty winds to near 35 mph produced near blizzard conditions at times, including both some blowing and drifting of the</p>





## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>snow. A mantle of 8 to locally more than 16 inches of snow buried the Schoharie and Mohawk valleys, Greater Capital District, Western Adirondacks as well as the Lake George Saratoga region. Further south, 4 to 8 inches of snow covered portions of the Mid Hudson Valley. The official reading of 13.3 inches at Albany was the second heaviest April snowstorm on record, second only to a 17.7 inch storm during 1982.</p> <p>Since the storm happened on a Sunday, disruptions from it were minimized. However, some business were closed or delayed in opening. The biggest damage from the storm was due to the heavy wet nature of the snow, which resulted in many damaged or downed limbs and trees, especially north of the Mohawk River. Up to 35,000 customers in eastern New York were without power during the height of the storm.</p>
March 21, 2001				<p>Low pressure, from eastern Georgia, moved to eastern North Carolina by the morning of March 21. The storm then tracked off the Virginia coastline and up the eastern seaboard, to become the third nor'easter of the month. By the morning of March 23, the storm center had slowly progressed to the Gulf of Maine. Although not all that powerful, the storm had both Gulf and Atlantic moisture to work with. Heavy wet snow fell, accumulating 5 to 10 inches across the higher terrain of eastern New York, with most valley locations getting little or no slushy accumulation. This snow was heavy and wet enough to bring down limbs across the region. Wires and trees were reported down in Middelburgh, Schoharie county. Trees also fell across portions of Warren county. Specific snowfall amounts included 7 inches at Windham, Greene County, 10.5 inches at Indian Lake, Hamilton County, 8.7 inches at Summit, Schoharie County, 8.5 inches at Stillwater in Herkimer County and 7.6 inches in Warrensburg, Warren County.</p> <p>An estimated 1,500 homes over the higher terrain across eastern New York state, were without power. Service was disrupted to about 100 phone customers in Warren County.</p>
November 17, 2002	Winter Storm	N/A	N/A	<p>A strong nor'easter developed off Cape Hatteras on Saturday, November 16. The low pressure center then slowly moved north along the coast, reaching Cape Cod by late November 17. At the same time, a shallow layer of arctic air bled south from eastern Canada. The air was cold enough to produce a heavy wintery mix of precipitation during a good portion of the storm across eastern New York. Initially, the precipitation fell as snow, or snow and sleet mixed. A 1-3 inch swath of snow was</p>



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				observed from about Albany southward. A 3-6 inch swath of snow fell north of Albany. As warmer air worked in aloft, the snow changed to sleet, then freezing rain. Freezing rain was more extensive south of Albany, where up to 58,000 customers lost power in the Mid Hudson Valley. Ice accretion was between one-half and one inch. Western Ulster County was especially hard hit where in addition to the ice, winds frequently gusted to 30 mph and, with lingering leaves on the trees, brought many trees and power lines down. Further north, the combination of snow, sleet and freezing rain still caused up to 1,000 customers in the Lake George Saratoga region to loose power, and spotty power losses elsewhere in the Capital District. In addition, there was a loss of significant limbs on trees and dangerous travel conditions.
December 14, 2003	Winter Storm	N/A	N/A	<p>A low pressure area formed in the Gulf States early on December 14. This storm hugged the coast line as it tracked northward to become the second nor'easter of the winter season. This storm moved a little quicker than its predecessor. Also different from the last storm, enough warm air moved in aloft to change the snow to sleet and freezing rain, especially from Albany south.</p> <p>Snow began falling during the morning hours to the south of Albany, into the Capital District around noon, and further north during the afternoon. The sleet and freezing rain began mixing in during the evening hours. Meanwhile, the precipitation stayed all snow from about Glens Falls northward. By the time the storm was east of Cape Cod, early on Monday, a swath of 4 to 8 inches of snow, mixed with sleet, had fallen from Albany southward. To the north, 8 to 16 inches of mostly snow fell with locally higher amounts across the Adirondacks. Officially, 7.2 inches of snow fell at Albany, while up to 20.8 inches of snow, the most in eastern New York, was reported at Old Forge in Herkimer County. The storm closed most school districts on Monday and resulted in some vehicular accidents.</p>
April 12, 2007	Winter Storm	N/A	N/A	<p>Low pressure moved from the mid Mississippi Valley on Wednesday April 11th into the southern Great Lakes by Thursday morning on April 12th, spreading a swath of heavy wet snow across the higher elevations of the southern Adirondacks and eastern Mohawk Valley from early Thursday morning into early Thursday afternoon.</p> <p>Snowfall amounts were greatest across the higher elevations above 1500 feet, where 6 to 12 inches fell. Some snowfall totals included 10.5 inches at Speculator, 10.3 inches at Wells, 8 inches at Caroga Lake and</p>



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Stratford, 8 inches at Middle Grove, 12 inches at North Creek at an elevation of 3600 feet, and 10 inches at Bakers Mills. The heavy wet snowfall led to downed tree limbs and power lines, which led to numerous power outages across the affected region during Thursday afternoon.
February 6, 2008	Winter Storm	N/A	N/A	<p>A low-pressure system tracked east northeast from the lower Ohio Valley on Wednesday morning, February 6th, to just south of Cape Cod by Thursday morning on February 7th. This storm system spread a swath of moderate to locally heavy snow, sleet and freezing rain across portions of east central New York and adjacent western New England from Wednesday morning into Thursday morning.</p> <p>Snow and sleet amounts ranged from 6 to 12 inches across portions of the southern and western Adirondacks, with generally under 3 inches elsewhere. However, ice accretion from freezing rain ranged between one quarter, to just under one half of an inch, with the greatest amounts across the higher elevations of the central and southern Taconics, as well as across the Lake George and Saratoga region. The ice accretion led to scattered power outages as a result of downed tree limbs on power lines.</p>
January 28-29, 2009	Winter Storm	N/A	N/A	<p>A winter storm spread a significant wintry mix of precipitation across eastern New York State, with heavy snow and sleet across much of the southern Adirondacks into the Lake George Saratoga region. Snow and sleet amounts ranged from 8 to 12 inches across the southern Adirondacks and the Lake George Saratoga region. This wintry mix resulted in the closure of numerous schools and businesses across east central New York for both Wednesday and Thursday mornings, and also created treacherous travel conditions. Snowfall totals in Warren County ranged from 8 to 9 inches in the city of Glens Falls.</p>
February 18, 2009	Winter Weather	N/A	N/A	<p>Winter storm system swept northeast across eastern New York State early Thursday morning, preceded and accompanied by moderate to locally heavy wet snow. The snow began Wednesday afternoon, and tapered off early Thursday morning. The heaviest snowfall amounts occurred across the Lake George Saratoga region, where 6 to 10 inches fell.</p>
February 23, 2010	Heavy Snow	N/A	N/A	<p>A powerful storm impacted the region, the second in just a couple of days bringing heavy rainfall and a heavy wet snow to the local area. The heavy wet snow resulted in additional and continued widespread power outages across east central New York, downed trees and power</p>



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				lines, treacherous travel, road closures, train delays, building collapses and snow emergencies.  In Warren County, up to 2 feet of snow fell in the west portion of the county in the higher elevations. Route 9N at Pinewoods Road in the Town of Lake Luzerne was reported closed for a couple of hours late Tuesday evening, February 23rd, due to downed power lines. No property damages were reported. Snowfall totals in Warren County ranged from 10.5 inches in the City of Glens Falls to 21.3 inches at the Town of Lake Luzerne.
February 25, 2010	Winter Storm	N/A	N/A	This storm system produced a widespread swath of heavy wet snow across the greater Capital District and surrounding area, the Lake George Saratoga region, the Mohawk River Valley, Schoharie Valley and southern Adirondacks during the day Friday. Snowfall rates of 1 to 2 inches per hour occurred, beginning during the early morning hours, and persisting until late afternoon.  Snowfall amounts reached 12 to 15 inches across northern portions of the Capital Region extending into the east central Mohawk River Valley and Lake George Saratoga region. The heavy snow created treacherous travel conditions for the morning and evening commutes on Friday, with numerous accidents reported, including along portions of the Adirondack Northway, as well as Interstate 90. The heavy wet snow also led to numerous school and business closings across much of eastern New York on Friday.  Snowfall totals in Warren County ranged from 4 inches at Warrensburg to 24 inches at Garnet Hill in North River hamlet.
December 10-11, 2013	Winter Weather	N/A	N/A	As very cold air passed over the relatively warm water of Lake Ontario, a heavy, long-lasting band of lake effect snow developed on the evening of the 10 <sup>th</sup> , extending east across the entire western and southern Adirondacks. By the time the band ended late in the evening of December 11th, over one foot of snow was common across the western Adirondacks. Snowfall totals included 4.5 inches at Gore Mountain in Warren County.
December 14-15, 2013	Winter Storm	N/A	N/A	A light snow slowly spread across New York State from southwest to northeast during the day on December 14 <sup>th</sup> , followed by a steadier and heavier snowfall moved across the region during the evening hours and into the overnight. Snow fell at rates in excess of one inch per hour over much of the region and snow rates locally were as high as up to three inches per hour at times. The bulk of the accumulating snow was finished by the late overnight hours, but light snow showers and flurries



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				continued into the mid-morning hours, especially across the Adirondacks and Capital Region. By the end of the storm, many places around the eastern Catskills, Capital Region and Lake George Saratoga Region received around a foot of snowfall. Snowfall totals in Warren County ranged from 9 inches at Brant Lake hamlet to 12.2 inches at the Town of Lake Luzerne.
February 13-14, 2014	Heavy Snow	N/A	N/A	<p>An exceptional winter storm impacted all of eastern New York between Thursday, February 13th and the morning of Friday, February 14th. The snow began falling in the morning hours at rates of up to three inches per hour, causing significant travel issues across the region. After a late afternoon break in the snowfall, heavy precipitation returned in the late evening hours. Once again, the snow fell at significant rates of up to 3 inches per hour. In addition, lightning and thunder accompanied the snow across far southern and eastern areas at times as well. By the time snow ended, between one and two feet of snow fell across much of the Lake George Saratoga Region, with lower amounts of 4 to 10 inches across the Adirondacks. Very strong winds, gusting as high as 40 mph, occurred as the storm pulled away. This led to significant blowing and drifting of the snowfall through the entire day on February 14th.</p> <p>As a result of the storm, Governor Andrew M. Cuomo declared a state of emergency for the Mid-Hudson as well other counties, including Warren, across east central New York. Restrictions were put on travel. Many towns and cities had difficulty with snow removal, as much of the snowfall also remained from a recent early February snowstorm as well. The weight of snow caused a few roof collapses and power outages across the region.</p> <p>Snowfall totals in Warren County ranged from 6 inches at North Creek hamlet to 12 inches at the Town of Lake Luzerne.</p>
November 26-27, 2014	Nor'Easter / Snowstorm	DR-4204	No	<p>An early season winter storm impacted eastern New York State during Thanksgiving. The storm began the morning of the 26<sup>th</sup> and once the snow began, it increased in intensity, falling at rates at or greater than one inch per hour. Temperatures dropped to or below freezing across the entire region. There were heavy bands of snow occurring in some locations, especially across the Taconics, Mohawk Valley and southeastern Adirondacks. Snowfall totals ranged from six to 12 inches, with up to 15 inches in the southeastern Adirondacks. The weight of the snow caused power outages in the area, especially across the mid-Hudson</p>



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Valley. Warren County DPW reported numerous damages, including automobile damages from falling trees and icy conditions, transportation blockages, and phone wires falling on and entangling a truck. Snowfall totals in Warren County ranged from 10 inches at the City of Glens Falls to 14.5 inches at North Creek hamlet.
February 12, 2017	Winter Storm	N/A	N/A	Two low pressure systems approached the northeastern US on Sunday, February 12, with snowfall breaking out over the local area around sunrise. The snow was heavy during the morning and early afternoon, with accumulation rates of 1 to locally 2 inches per hour at times. The snow was wet and dense and readily clung to trees. During the afternoon, warmer air resulted in precipitation changing to sleet for portions of the mid-Hudson Valley and Catskills, which cut down snowfall totals in those locales. The snowfall diminished Sunday evening, except over the higher terrain areas of the Adirondacks as well as the Mohawk Valley. In those locations, accumulating snowfall persisted through the night and into Monday before diminishing Monday afternoon.
December 22, 2017	Winter Storm	N/A	N/A	A complex storm system brought snow and a wintry mix to the region on Friday, December 22nd through Saturday, December 23rd, 2017. The precipitation started out as snow on Friday but transitioned to a wintry mix by Friday night. Freezing rain lingered through the day Saturday as a warm front lifted through the region, especially for sheltered mountain valley areas. Snowfall totals ranged from a trace in the Mid-Hudson Valley up to 8.5 inches in the Adirondacks (Hamilton county) along with light icing as well. A few spots in the Mohawk Valley and Saratoga Region saw up to two tenths of an inch of ice.
January 19, 2019	Winter Storm	N/A	N/A	he largest snowstorm to date in the 2018-19 winter occurred on January 19th and 20th across eastern New York. Low pressure formed over the lower Mississippi Valley and lifted northeast across the Tennessee Valley during the night of the 19th before moving along the Mason-Dixon line on the 20th. Strong rising motion occurred as southerly winds aloft transported moist air northward, which was lifted over the cold airmass in place over eastern New York. Snowfall broke out during the afternoon of the 19th, continuing heavy at times into the evening and overnight hours before ending during the morning of the 20th. The strong southerly flow brought above-freezing air aloft into the region, causing the snow to turn to sleet as far north as the Capital District and northern Catskills for a time before turning





## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				back to snow. Further south, the air aloft was warm enough to turn the precipitation to freezing rain with ice accretion of one to three tenths of an inch over portions of the southeast Catskills, Mid-Hudson Valley, and southern Taconics.
March 23, 2020	Winter Storm	N/A	N/A	A late season snowfall impacted the region on Monday, March 23rd, 2020. This was brought on by an anomalously cold air mass interacting with a coastal low pressure system. Snowfall totals ranged from an inch in the Mid-Hudson valley up to almost 10 inches in the southern Adirondacks and northern Lake George Saratoga region. The lower amounts were mainly confined to the Lower Hudson Valley due to a rain and snow mix throughout much of the day. Snow intensity increased during the late afternoon and early evening hours impacting the evening commute. As a result, a tractor trailer crashed on Interstate 87 South prompting portions of the interstate to be closed.
January 17, 2022	Winter Storm	N/A	N/A	A winter storm dumped 7-14 inches over eastern New York January 16-17. It was also windy with gusts generally between 30-45 mph. There were a few gusts that topped 50 and 60 mph. Snow emergencies were put in place in the Utica/Dolgeville area.
March 13, 2023	Winter Storm	N/A	N/A	A powerful Nor'Easter resulted in widespread moderate to heavy wet snow and gusty winds across eastern New York March 13-March 15, 2023.  Anywhere from 15 to 30 inches of snow with locally higher amounts in excess of 30 inches fell over the SW Adirondacks and eastern Catskills. Valley locations received lesser amounts with totals generally ranging between 7 to 15 inches. A few locations across the western Mohawk Valley and mid-Hudson Valley received less than 6 inches of snow.  Numerous downed trees and powerlines resulted in widespread power outages. According to the National Grid, approximately 141,000 customers lost power within the state of New York with most occurring within our county warning area. Some locations were without power for at least 1 or 2 days.

Sources: NYSDEC, NWS, NYS DHSES, NOAA-NCDC, FEMA

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

DR Disaster Declaration  
EM Emergency Declaration  
FEMA Federal Emergency Management Agency  
HMP Hazard Mitigation Plan  
N/A Not Applicable  
NCDC National Climatic Data Center  
NOAA National Oceanic and Atmospheric Administration  
NWS National Weather Service



PA

Public Assistance

## Appendix E. SUPPLEMENTARY DATA

## E.1.6 Wildfire

Known wildfire events that have impacted Warren County from 2002 to 2015 are identified in Table E.6. Fire departments throughout the County respond to small brush fires each year. However, many of these fires are so small that little information is available. Therefore, Table E.6 may not include a complete record of all wildfire events that have occurred within the county.

Table E.6. Wildfire Events in Warren County, 2002 to 2015

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
July 5, 2002	Wildfire	N/A	N/A	Smoke, from many forest fires across the Nemiscau region of northern Quebec, became trapped under a subsidence inversion, and was transported south across eastern New York from the evening hours of July 5, to the late evening of July 7. The forest fires were sparked by exceptionally hot and dry weather over that part of Canada followed by an unusual amount of thunderstorm activity, resulting in many lightning strikes. The circulation between high pressure over Hudsons Bay and a low pressure off the Canadian Maritimes transported the smoke southward. The smoke obscured the sky, and even reduced surface visibilities to as low as one mile, especially on the early morning of July 7. Advisories were issued warning people with respiratory problems to remain indoors and all individuals to curb outside activity. No major problems were reported to the National Weather Service as a result of this smoke.
April 30 – May 7, 2009	Wildfire - Tongue Mtn 1	N/A	NYS-2009-0133	A lightning strike started a forest fire in a forest preserve in the Town of Hague, resulting in 13 acres burned.
May 16 – 27, 2013	Wildfire - Pine Mountain Fire	N/A	NYS-2013-0099	A lightning strike started a forest fire in a forest preserve in the Town of Warrensburg, resulting in 16.8 acres burned.
November 4-10, 2014	Wildfire	N/A	NYS-2014-0139	In 2014, the largest wildfire to occur in New York State was the 173-acre Darling Mountain Fire in the Town of Queensbury that



## Appendix E. SUPPLEMENTARY DATA

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				began on November 4. This fire occurred on private land and spread quickly because of strong winds blowing fallen leaves. Smoke from the fire triggered automatic alarm systems six miles away in the City of Glens Falls. Little mop up was needed for this surface fire, and it was declared out three days later. This fire was caused by hunters leaving an unextinguished campfire.
May 8 – 17, 2015	Wildfire	N/A	NYS-2015-0105	A campfire in the Town of Queensbury was reported to spark forest fires on private property, resulting in 14 acres burned.

Sources: NYSDEC 2013; NYSDEC 2015; NOAA-NCDC

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or following the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

FEMA Federal Emergency Management Agency

K Thousand (\$)

M Million (\$)

N/A Not applicable



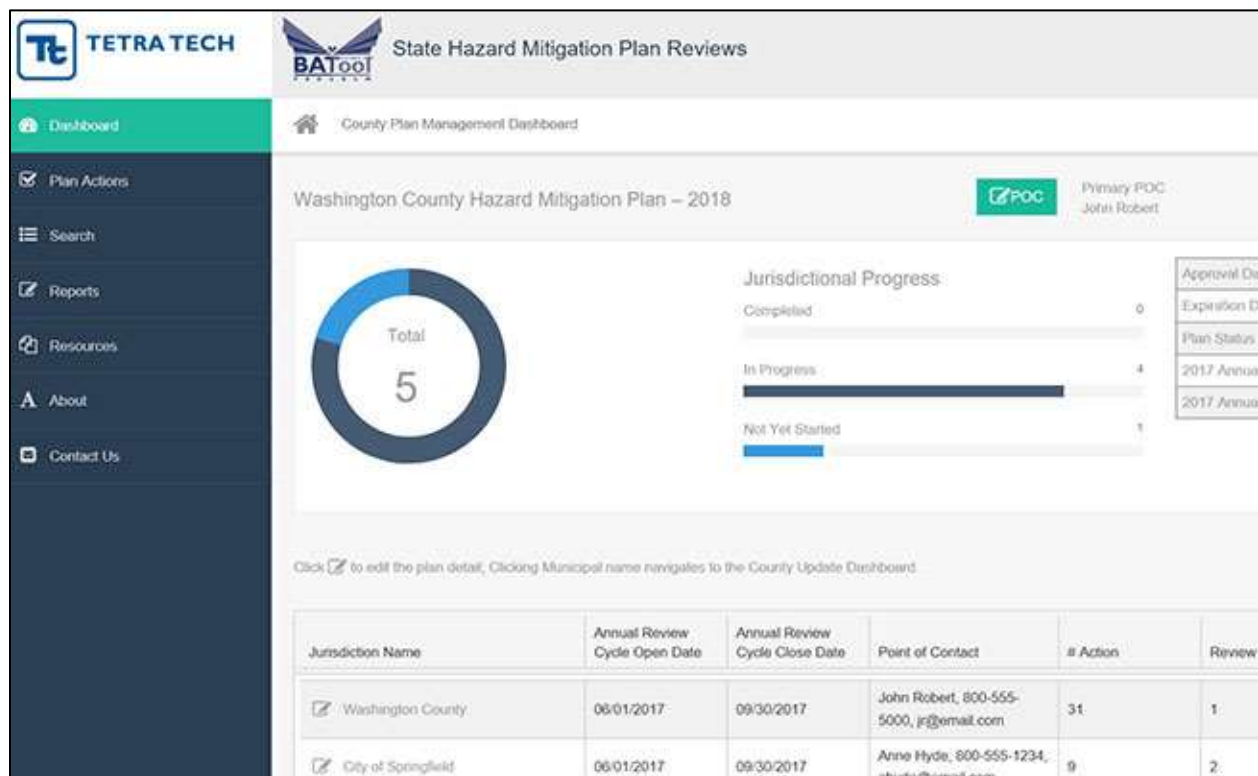
## APPENDIX F. PLAN MAINTENANCE TOOLS

This appendix includes tools and worksheets to facilitate plan maintenance and review by the Warren County Steering and Planning Committees.

In the first year of the performance period, an online performance progress reporting system, the BATool<sup>SM</sup> will provide municipal and county representatives direct access to their mitigation initiatives to easily update the status of each project, document successes or obstacles to implementation, add or delete projects to maintain mitigation project implementation. This online program will capture information and roll all input into a report to summarize mitigation strategy progress.



Figure G-1. BATool<sup>SM</sup> Screenshot



The FEMA 386-4 guidance worksheets are also available to assist with progress reporting. These worksheets are provided in this section for ease of access to the HMP Coordinator and Planning Partnership to maintain the 2023 HMP throughout its period of performance.

**Worksheet #1****Progress Report****step 2***Page 1 of 3*

Progress Report Period: \_\_\_\_\_ to \_\_\_\_\_  
(date) (date)

Project Title: \_\_\_\_\_ Project ID#: \_\_\_\_\_

Responsible Agency: \_\_\_\_\_

Address: \_\_\_\_\_

City/County: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Title: \_\_\_\_\_

Phone #(s): \_\_\_\_\_ email address: \_\_\_\_\_

List Supporting Agencies and Contacts:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Total Project Cost: \_\_\_\_\_

Anticipated Cost Overrun/Underrun: \_\_\_\_\_

Date of Project Approval: \_\_\_\_\_ Start date of the project: \_\_\_\_\_

Anticipated completion date: \_\_\_\_\_

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Milestones	Complete	Projected Date of Completion

**Plan Goal(s)/Objective(s) Addressed:**

Goal: \_\_\_\_\_

Objective: \_\_\_\_\_

**Indicator of Success** (e.g., losses avoided as a result of the acquisition program):

*In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.*

**Status** (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

**Project Status**☐ Project on schedule☐ Project completed☐ Project delayed\*

\*explain: \_\_\_\_\_

☐ Project canceled**Project Cost Status**☐ Cost unchanged☐ Cost overrun\*

\*explain: \_\_\_\_\_

☐ Cost underrun\*

\*explain: \_\_\_\_\_

**Summary of progress on project for this report:**

A. What was accomplished during this reporting period?

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B. What obstacles, problems, or delays did you encounter, if any?

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C. How was each problem resolved?

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**Other comments:**

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Adapted from the North Carolina HMGP Progress Report Form at [http://www.dem.dcc.state.nc.us/mitigation/document\\_index.htm](http://www.dem.dcc.state.nc.us/mitigation/document_index.htm).

**Worksheet #2****Evaluate Your Planning Team****step 3**

*When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:*

	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		
<b>Comments/Proposed Action:</b>		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?		
<b>Comments/Proposed Action:</b>		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?		
<b>Comments/Proposed Action:</b>		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?		
<b>Comments/Proposed Action:</b>		
Are there ways to gain more diverse and widespread cooperation?		
<b>Comments/Proposed Action:</b>		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?		
<b>Comments/Proposed Action:</b>		

*If the planning team determines the answer to any of these questions is "yes," some changes may be necessary.*



**Worksheet #3 Evaluate Your Project Results****step 3**

page 1 of 2

Project Name and Number: \_\_\_\_\_

Project Budget: \_\_\_\_\_

Project Description: \_\_\_\_\_

Associated Goal and Objective(s): \_\_\_\_\_

Indicator of Success (e.g., losses avoided): \_\_\_\_\_

*Insert location map.  
Include before and after  
photos if appropriate.*

Was the action implemented? ☐ YES ☐ NOIF **NO**

Why not?

YES NO

Was there political support for the action?

☐ ☐

Were enough funds available?

☐ ☐

Were workloads equitably or realistically distributed?

☐ ☐

Was new information discovered about the risks or community that made implementation difficult or no longer sensible?

☐ ☐

Was the estimated time of implementation reasonable?

☐ ☐

Were sufficient resources (for example staff and technical assistance) available?

☐ ☐IF **YES**

What were the results of the implemented action? \_\_\_\_\_

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page 2 of 2

	YES	NO
Were the outcomes as expected? If No, please explain:		
Did the results achieve the goal and objective(s)? Explain how:		
Was the action cost-effective? Explain how or how not:		
What were the losses avoided after having completed the project?		
If it was a structural project, how did it change the hazard profile?		
Additional comments or other outcomes:		

Date: \_\_\_\_\_

Prepared by: \_\_\_\_\_

**Worksheet #4 Revisit Your Risk Assessment step 4**

Risk Assessment Steps	Questions	YES	NO	COMMENTS
Identify hazards	Are there new hazards that can affect your community?			
Profile hazard events	Are new historical records available?			
	Are additional maps or new hazard studies available?			
	Have chances of future events (along with their magnitude, extent, etc.) changed?			
	Have recent and future development in the community been checked for their effect on hazard areas?			
Inventory assets	Have inventories of existing structures in hazard areas been updated?			
	Is future land development accounted for in the inventories?			
	Are there any new special high-risk populations?			
Estimate losses	Have loss estimates been updated to account for recent changes?			

*If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.*

**Worksheet #5****Revise the Plan****step 4**

page 1 of 4

**Prepare to update the plan.***When preparing to update the plan:**Check the box when addressed:*

1. Gather information, including project evaluation worksheets, progress reports, studies, related plans, etc.	<input type="checkbox"/>
Comments:	
2. Reconvene the planning team, making changes to the team composition as necessary (see results from Worksheet #2).	<input type="checkbox"/>
Comments:	

**Consider the results of the evaluation and new strategies for the future.***When examining the community consider:**Check the box when addressed:*

1. The results of the planning and outreach efforts.	<input type="checkbox"/>
Comments:	
2. The results of the mitigation efforts.	<input type="checkbox"/>
Comments:	





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3. Shifts in development trends.

Comments:

4. Areas affected by recent disasters.

Comments:

5. The recent magnitude, location, and type of the most recent hazard or disaster.

Comments:

6. New studies or technologies.

Comments:

7. Changes in local, state, or federal laws, policies, plans, priorities, or funding.

Comments:



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8. Changes in the socioeconomic fabric of the community.	
Comments:	
9. Other changing conditions.	
Comments:	

**Incorporate your findings into the plan.***When examining the plan consider:**Check the box when addressed:*

1. Revisit the risk assessment. (See Worksheet #4)	
Comments:	
2. Update your goals and strategies.	
Comments:	
3. Recalculate benefit-cost analyses of projects to prioritize action items.	
Comments:	



Use the following criteria to evaluate the plan:

Criteria	YES	NO	Solution
Are the goals still applicable?			
Have any changes in the state or community made the goals obsolete or irrelevant?			
Do existing actions need to be reprioritized for implementation?			
Do the plan's priorities correspond with state priorities?			
Can actions be implemented with available resources?			

Comments:

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## APPENDIX G. CRITICAL FACILITY INVENTORY

### G.1 OVERVIEW

This section contains information and details to support information provided in Section 4 – County Profile which provides the distribution of critical facilities located within Warren County and its municipalities. Due to the sensitive nature of this information, details have been redacted. Contact the HMP Coordinator, for more information contact Ann Marie Mason Director, Warren County Office of Emergency Services at [masona@warrencountyny.gov](mailto:masona@warrencountyny.gov).



## APPENDIX J. PLANNING GUIDANCE

This appendix includes the 2022 NYS DHSES planning standards and guidelines for hazard mitigation planning, as well as FEMA guidance for classifying Lifelines within a community.



## 2022 New York State Hazard Mitigation Planning Standards (Supersedes the 2017 NYS Hazard Mitigation Planning Standards)

Congratulations on taking the first steps to update a multi-hazard mitigation plan for your community!

The goal of both the New York State Division of Homeland Security and Emergency Services (NYS DHSES) and FEMA is that all jurisdictions develop robust mitigation plans and tangible mitigation actions that will contribute to long-term risk reduction.

The 2022 NYS Hazard Mitigation Planning Standards reduce the 2017 Hazard Mitigation Planning Standards. Any plan currently in development, regardless of date funded, will be held *only* to these reduced standards.

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### PLEASE NOTE:

On April 19, 2023, FEMA's new Local Mitigation Planning Policy will take effect. Plans approved on or after this date **must meet requirements** as outlined in the linked [Policy Guide](#).

[https://www.fema.gov/sites/default/files/documents/fema\\_local-mitigation-planning-policy-guide\\_042022.pdf](https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf)

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The additional state requirements detailed below are intended to improve the quality of hazard mitigation plans and encourage the development of the most appropriate and effective mitigation projects for your community. It is recognized that many jurisdictions have inherent constraints and certain information may be difficult to provide. NYS DHSES and FEMA will work with you throughout the entire planning process to ensure the successful development of your community's hazard mitigation plan.

There are a multitude of resources that exist to provide guidance and support throughout the planning process, developed by Federal and State agencies, as well as private and research-based groups. We urge you to contact us so that we may direct you to additional resources and provide you with the most comprehensive technical assistance possible.

For questions and comments, please call our offices at 518-292-2304.

Additional contact information will be provided to sub-recipients for more direct assistance.





**Please note:**

*Jurisdiction* is used to describe all government entities within the boundaries set forth in the Multi-Jurisdictional Plan (typically County-wide), including the County itself, as well as cities, towns, villages and potentially tribes that choose to join a multi-jurisdictional plan.

*Special Flood Hazard Area (SFHA)* is defined as the area that will be inundated by the flood event having a 1-percent change of being equaled or exceeded in a given year (previously known as the 100-year flood event).

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**1. Assess Critical Facilities**

*Critical facilities must remain accessible and functional before, during and after disasters to meet the jurisdictions Continuity of Government (COG) and Continuity of Operations (COOP) standards, and to support important emergency, government and sheltering functions.*

Jurisdictions must identify all critical facilities, assess their vulnerabilities, and evaluate and ensure they are protected to a 0.02% chance (500-year) flood event. Critical facilities that are located in an SFHA and/or have been previously flooded, must be protected against a repeat of that flood or to the 0.02% chance flood event, whichever provides the greater protection.

- The plan must document the name of facility, type of facility, jurisdictional location, and exposure to a 1% (100-year) and 0.02% chance event.
- The plan must document those critical facilities are protected to a 0.02% flood event, or previous worst case flood event. For those that do not meet this level of protection, the plan must include an action to meet or go beyond this criterion or explain why it is not feasible to do so. Going beyond this criterion is optional but may be wise to protect against a future worst case due to climate change.

**2. Include Jurisdictional Annexes**

*Jurisdictional annexes provide a unique, stand-alone guide to mitigation planning for each jurisdiction.*

The plan must be organized so that there is an annex for every jurisdiction within the county's borders, including the County.

- The plan must include a table in the Introduction section clearly identifying all jurisdictions and which are seeking FEMA approval.
- The annex for each jurisdiction seeking FEMA approval must include the following:
  - Contact Information;
  - Jurisdiction Profile;
  - Hazard Identification (specific to the jurisdiction);
  - Hazard Event History;
  - National Flood Insurance Program (NFIP) Summary (to meet Federal Standards);
  - Critical Facilities Information (to meet F1);
  - Jurisdiction/public identified vulnerabilities;
  - Additional public involvement;
  - Capabilities Assessment;
  - Mitigation Strategy:
    - All identified previous mitigation activities with current status;
    - All proposed mitigation activities (both new and carried forward, to meet F3)
- The annex for each non-participating jurisdiction (those not seeking FEMA approval at this time), must include a cover sheet and should include as much information as is available.



### 3. Develop Mitigation Actions

*Projects that are well developed and documented in one place are more quickly identifiable for selection when grants become available, making implementation that much more likely.*

Within each jurisdictional annex, jurisdictions must develop 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. For jurisdictions containing an SFHA, one (1) of these actions must be for a project that addresses flooding.

### 4. Post Draft Plan Online

*Allowing the public to comment on the draft plan increases awareness about how mitigation saves lives and reduces risk and allows a final opportunity for public input.*

The public must have an opportunity to view and comment on the draft plan prior to submittal.

- The draft plan must be posted in full (except for discretionary sensitive information) on an existing county/jurisdiction website, or one created for the purpose of soliciting comments, for 30 days or the time prescribed by local law, whichever is greater, and the plan must describe efforts made to solicit public comments from potentially underserved areas where residents may not have access to a computer to view the website. The website must clearly identify how the public can comment on the plan, to include either specific contact information to send comments or a user-friendly form or survey.

### After NYS DHSES and FEMA Approval

- Once designated Approvable Pending Adoption (APA) or Approved by FEMA, the final plan must be placed on the same website (cited above) in its entirety (except for discretionary sensitive information).
- Final payment will occur only after 50% of the participating jurisdictions have adopted the plan and provided adoption resolutions to NYS DHSES. For county-led hazard mitigation planning efforts, the county must be one of the adopting jurisdictions.

The chart below shows the requirements as they appear on the plan review tool used by NYS DHSES and FEMA Region II to determine whether a submitted plan meets federal and state requirements.

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan</b>		
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>		<b>(section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS – NYS HAZARD MITIGATION PLANNING STANDARDS</b>				
These are required actions for plans developed with NYS DHSES-administered funds.				
H1. Do jurisdictions identify critical facilities, assess vulnerabilities, and ensure protection to a 0.02% flood event or worst-case scenario?				
H2. Does the plan include an annex for every jurisdiction within the County's boundaries?				
H3. Within each jurisdictional annex, are projects developed in accordance with the NYS DHSES Proposed Projects Table?				
H4. Was the draft plan posted for public comment?				
<b>Note:</b> The applicant is required to address the 2022 NYS Hazard Mitigation Planning Standards as required actions for a hazard mitigation plan developed with funds administered by NYS DHSES.				
<b>ELEMENT H: REQUIRED REVISIONS</b>				
<i>Please see opportunities for improvement</i>				



## APPENDIX I. DAM FAILURE (CONFIDENTIAL)

This is a confidential appendix that summarizes the quantitative vulnerability assessment conducted for the dam failure hazard in Warren County. This section contains information and details to support information provided in Section 5.4.1 – Dam Failure Profile which provides the information regarding dam failure in Warren County. Due to the sensitive nature of this information, details have been redacted. Contact the HMP Coordinator, for more information contact Ann Marie Mason Director, Warren County Office of Emergency Services at [masona@warrencountyny.gov](mailto:masona@warrencountyny.gov).



## APPENDIX J. PUBLIC COMMENT

This appendix provides documentation of public comment received following public review of the draft Warren County Hazard Mitigation Plan. Public feedback on the draft plan is an important part of the hazard mitigation planning process. Public comments have been addressed throughout the HMP as appropriate.

### J.1 PUBLIC COMMENTS ON THE DRAFT PLAN

This section contains the public comment responses from the public review of the draft Warren County Hazard Mitigation plan. Comments were received from four residents for the entire plan and for specific sections. The public comments are provided in the following summary, with personal information removed.

#### J.1.1 Comments on the Entire Plan

- **Comment 1:** Request for a way to search the entire document for keywords.
  - **Response:** The final plan will be one searchable document.
- **Comment 2:** Expressed concern with recommending backup generators that use fossil fuels. Recommended using battery power backup systems, especially for powering facilities with vulnerable populations.
  - **Response:** Warren County will evaluate the use of power storage batteries to provide backup power instead of fuel powered generators, where possible.
- **Comment 3:** Recommended web based educational and outreach webinars to allow for remote participation for residents.
  - **Response:** Live Citizen Preparedness Training is available through NYSDHSES in conjunction with the National Guard and hosted by the County. Similar training is offered by the state offers and is available on YouTube in 13 languages at this link: <https://www.dhSES.ny.gov/citizen-preparedness-corps>.

#### J.1.2 Comments on Section 4

- **Comment 4.1:** Suggest adding a map showing the over 65 years old population in the county.
  - **Response:** The over 65 population group is discussed in detail in the vulnerability section of the plan.
- **Comment 4.2:** Recommend that the plan emphasize that seniors are more vulnerable to disease within the mitigation goals regarding public health guidance.



- **Response:** Information was added to the plan about vulnerability for seniors in Section 4 in order to emphasize the mitigation recommendations.

### J.1.3 Comments on Section 5

- **Comment 5.1:** Suggested that more needs to be done to coordinate the use of generators for senior citizens during winter power outages.
  - **Response:** The County action item #2 addresses backup power for critical facilities which includes those that support senior citizens.

### J.1.4 Comments on Section 9

- **Comment 9.1:** Recommend that the adaptive capacity for disease needs to be strong in Queensbury and elsewhere.
  - **Response:** The adaptive capacity ranks were developed through a stakeholder review by the Hazard Mitigation Plan Steering Committee and each participating community as part of the planning process. This is a factor in determining the relative risk presented by each hazard of concern. A higher adaptive capacity will result in a reduction in the relative hazard ranking and may be discussed with each community as needed to support the prioritization of projects.
- **Comment 9.2:** Highlighted that more needs to be done to control the Schroon River as it continues to flood more every year.

- **Response 9.2:**

The Schroon River in Warren County is impounded in the Town of Horicon by the Starbuckville Dam. The original dam was developed for the purpose of commerce of logs to paper and pulp mills in Glens Falls and further downstream on the Hudson River. The dam was rebuilt in 2005. This dam creates a pool elevation that has been established and is controlled by the dam. Dam sluices may be open, closed or in a combination of, to maintain the established water level.

The Schroon River in Warren County has a large watershed that begins in Essex County at Elk Lake. With such a large watershed, the Schroon is susceptible to flooding at any time of the year, but generally springtime during runoff and early-late summer with spring rains. As stated, flooding may occur at any time of the year based on existing hydrologic and meteorological conditions.

Floodplains associated with the Schroon River are often inundated during spring and high flow events. The vast majority of these areas are fields or forested areas. Development such as homes and commercial ventures have been established in existing floodplains or flood prone areas.



FEMA is currently redeveloping floodplain maps for Warren County and this updated and more accurate information will be used to determine what steps the county and its municipalities may take to reduce flooding impacts for landowners, while maintaining the ability of the river flow and utilize its floodplains when necessary.

- **Comment 9.3:** Recommend that the maps for Queensbury are revised to be easier to read.
  - **Response:** Users may zoom into digital maps to enable better readability.





# PARTICIPATION MATRIX

Appendix B includes the participation matrix for meetings convened during the development of the Warren County Hazard Mitigation Plan Update.



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Tammie DeLorenzo	Assistant to the County Administrator	Warren County Administrators Office	X	X		X	X			X				X		
Aaron Frankendorf	Staff Director. Adirondack/Glens Falls Transportation Council	ADK Glens Falls Transportation Council	X	X			X				X					
Sara Frankendorf	GIS Coordinator	Warren County	X	X			X			X	X		X			
Ethan Gaddy	WC Planner/Climate Smart	Warren County Planning Department	X	X			X		X	X	X			X		
Kevin Hajos	Superintendent	Warren County Department of Public Works	X	X											X	X
Sandy LeBarron	Director of Environmental Health and Safety	Finch Paper	X	X						X			X			X
Jim Lieberum, CPESC	District Manager/County Hazard Mitigation Coordinator	Warren County Soil and Water Conservation District (WCSWCD)	X	X		X	X	X	X	X	X	X	X	X	X	X
Ann Marie Mason	Director/Emergency Manager	Warren County	X	X		X	X	X	X		X		X	X		X



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Ashley Rivers	Emergency Services Coordinator	Warren County	X	X		X		X			X		X			X
Scott Royale	Sustainability Coordinator	SUNY	X	X												
Laura Stebbins	Director of Emergency Preparedness	Glens Falls Hospital	X	X			X	X	X				X	X		X
Bob Bradshaw	Managing Partner	Contingency Management Consulting Group			X	X										
Jennifer Ramsey	Public Safety Committee	Warren County		X		X			X		X					
John Gibb	Emergency Management	Contingency Management Consulting Group				X					X		X	X		X
Joshua Westfall, AICP	Planner	Bolton, Town		X				X	X			X			X	
Cheryl Bolton	Planning and Zoning Secretary	Bolton, Town													X	
Matt Coon	Dep. Highway Superintendent	Bolton, Town													X	
Marion Eagan	Deputy Supervisor	Chester, Town		X								X		X	X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Larry Turcotte	Councilman	Chester, Town		X												
Marion Eagan	Planning and Zoning	Chester, Town		X				X								
Jeremy Little	Zoning Administrator	Chester, Town		X				X							X	
Jessica Leerkes	Engineer	Chester, Town		X								X		X	X	
Craig Leggett	Supervisor	Chester, Town													X	
Mindy Conway	Town Clerk	Chester, Town		X										X		
James P. Schrammel	Fire Chief	City of Glens Falls	X	X						X						
Kris Vanderzee	Code Enforcement Officer	Glens Falls, City		X	X											
William Norton	Superintendent, Water & Sewer	Glens Falls, City		X				X	X			X				
Sheila Mender	Engineering Department	Glens Falls, City		X										X	X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Justin Reckner	Code Enforcement Officer, Building & Codes	Glens Falls, City													X	
Philip Cancelliere	Building Inspector	Glens Falls, City													X	
Edna A. Frasier	Town Supervisor	Hague, Town		X										X	X	
Matther Coffin	Deputy Highway Superintendent	Hague, Town		X												
Matthew Magee	Zoning Administrator	Hague, Town		X											X	
Cathy Clark	Zoning Enforcement Officer	Hague, Town		X										X	X	
Tim Fiallo	Highway Clerk	Hague, Town													X	
Michael N. Geraci	Supervisor	Horicon, Town		X				X	X			X		X	X	
Darian Granger	Highway Superintendent	Horicon, Town		X								X			X	
Matthew Magee	Zoning Administrator	Horicon, Town													X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Danae Tucker	Bookkeeper	Johnsburg, Town		X				X	X					X	X	
Fred Comstock	Highway Superintendent	Johnsburg, Town		X				X							X	
Mike Dunkley	Deputy Highway Superintendent	Johnsburg, Town		X				X				X			X	
Ernie Dunkley	Safety Officer	Johnsburg, Town		X				X				X		X	X	
Colin Mangan	Zoning Enforcement Officer	Johnsburg, Town													X	
Dan Barusch	Village and Town of George Planner	Village and Town of Lake George	X	X			X		X		X	X	X	X	X	
Rob Lanfear	Highway Department	Lake George, Town/Village		X				X						X	X	
Keith Lanfear	Superintendent Public Works	Lake George, Town/Village		X				X	X			X			X	
Doug Frost	Code Enforcement Officer	Lake George, Town													X	
Robert Blais	Mayor	Lake George, Village		X											X	





Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
John Helms	DPW Foreman	Lake George, Village		X											X	
Eugene J. Merlino	Town Supervisor	Lake Luzerne, Town		X				X	X						X	
Ronnie Deuel	Highway Superintendent	Lake Luzerne, Town		X											X	
Karen Putney	Zoning Officer	Lake Luzerne, Town		X				X	X			X		X	X	
Khristopher Kassay	Deputy Zoning Enforcement Officer	Lake Luzerne, Town		X							X			X	X	
Frank E. Thomas	Supervisor	Stony Creek, Town		X					X			X			X	
Ed Lowell, Jr.	Councilman	Stony Creek, Town		X												
Deb Runyon	Supervisor	Thurman, Town		X				X	X			X			X	
Patrick Wood	Highway Superintendent	Thurman, Town		X												
James S. Hull	Code Enforcement Officer	Warrensburg, Town		X				X				X		X	X	



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Kevin B. Geraghty	Town Supervisor	Warrensburg, Town		X												
Patti Corlew	Floodplain Administrator	Warrensburg, Town													X	
John Strough	Supervisor	Queensbury, Town		X					X			X		X		
Laura Moore	Planner	Queensbury, Town	X	X			X			X	X		X	X		X
John O'Brien	Director of Building and Code Enforcement	Queensbury, Town		X				X								
Mike Palmer	Fire Marshal	Queensbury, Town		X				X								
Laura Moore	Planning and Zoning	Queensbury, Town		X				X				X				X
Dave Duell	Highway Superintendent	Queensbury, Town		X				X	X			X				
Mark DeMers	Deputy Highway Superintendent	Queensbury, Town		X								X				
Don Lehman	Public Information Officer	Warren County			X					X			X	X		



Name	Title	Department/Agency/Municipality	Steering Committee Member	Planning Partnership Member	Stakeholder/Other	Pre-Kick Off Meeting- 9/16/22	SC Meeting #1 - 9/27/22	PP Meeting #1 - 11/02/22	HW Support Meetings- 10/16/22	SC Meeting- 12/14/22	SC Meeting- 2/8/23	PP Meeting- 2/15/23	SC Meeting- 3/8/23	Strategy Workshop- 3/15/23	Local Annex Mtgs/Calls 3-6/23	Draft Plan Review-6/8/23
Elizabeth O'Reilly	Planning Manager	NYSDHSES	X		X		X	X	X					X		X
Shannon Clarke	Planner	NYSDHSES	X		X		X									
Shelby Meyers	Planner	NYSDHSES	X		X		X	X								
Betsy Parmerter	Planner	NYSDHSES			X									X		
Kevin Clapp	Planner	NYSDHSES			X									X		
Roland Paperman	Planner	NYSDHSES			x									X		
John Wilkerson	Planner	NYSDHSES			X									X		
Paul Hoole	Mitigation Planner	FEMA			X		X	X	X					X		



## APPENDIX C. MEETING DOCUMENTATION

Appendix C includes meeting agendas, sign-in sheets, and minutes (where applicable and available) for meetings convened during the development of the Warren County Hazard Mitigation Plan Update.

**WARREN COUNTY HAZARD MITIGATION PLAN - 2023 UPDATE**  
**Project Management Team Meeting – Agenda**  
**9/9/2022 at 10:00 am**



- Scope and Schedule
  - Brief review of our approved proposal
  - Grand performance period (copy of Grant Agreement)
  - Project schedule
- Municipal Participation – Letters of Intent to Participate
  - Email to all municipal coordinators (Email and LOIP template)
  - Identify any group meetings to leverage for the mitigation planning process
- Review Steering Committee Composition - refer to 2011 Steering Committee members
- Information and Data Collection
  - GIS Point of Contact for spatial data
    - Previous (2017) critical facility list – PCII data
      - Arrange GIS collection meeting
      - Data Wish List
    - Lifelines – FEMA incorporating into mitigation
    - NFIP data request
    - CAV dates and list of floodplain administrators
    - CEPA
  - Point of Contact for reviewing Public Information (brochure/surveys/announcements)
    - Draft content for website update, newsletter, social media content, and public meeting announcements
- Meeting Logistics
  - Schedule first Steering Committee meeting
  - Schedule HMP Kick-Off (public?)
    - Date and Location
- Hazard of Concern Identification
- Plan Style Guide
- Communications Guide
- In-Kind Tracking
  - County can begin tracking all time with the development of RFP, reviews, meetings, this call etc.
  - Tetra Tech to track meeting attendance for all participants

Documents:

Municipal Letter of Participation Request

Project Schedule

Data Wish List

In-Kind Tracker

NFIP Request Letter/ISAA



**WARREN COUNTY HAZARD MITIGATION PLAN - 2023 UPDATE**  
**Project Management Team Meeting – Agenda**  
**9/16/2022 at 2:00 pm**



Attendees: Ashley Rivers, Ann Marie Mason, Jim Lieberum, Bob Bradshaw, Jennifer Ramsey, John Gibb, Tammy Delorenzo

- Scope and Schedule
  - Brief review of our approved proposal
  - Grand performance period (copy of Grant Agreement) PoP ending 12/2024.
  - Project schedule-hold for input from the state.
  - Project reporting milestones submitted to NYSDHSES: March 2023; T Bolton, and County Public Works have pending funding-must confirm funding mechanisms-County to with DHSES on the status and timing re: need for an approved HMP.
- Municipal Participation – Letters of Intent to Participate
  - Email to all 13 municipal coordinators (Email and LOIP template)-COMPLETE. Tt to create OneDrive to share information. Jim to post.
  - Identify any group meetings to leverage for the mitigation planning process. LEPC-October (10/21) and quarterly, board of supervisors monthly (and invite mayors?), subcommittee on environmental concerns, kick-off right after board of supervisor's meeting (in-person or hybrid?).
- Review Steering Committee Composition - refer to 2011 Steering Committee members
  - In 2011-six persons, 2 County, Town of Queensbury, City of Glens Falls fire chief.+, LEPC has reps from hospital and Finch  
Major businesses: Hospital, Price Chopper, Finch, Lake George Land Conservancy, Lake George Association; Champlain Watershed Improvement Coalition of NY (CWICNY); Upper Hudson River Watershed Coalition. Agency for SVAs, Tt to provide crosswalk and old SC and suggestions for new committee.
- Core working group: meet bi-weekly-half hour on Wednesdays, 9 am on 9/21, 9/28 and bi-weekly thereafter.
- Information and Data Collection
  - GIS Point of Contact for spatial data-Sarah Frankenfeld to provide GIS files. Last plan redacted municipal water supply; high hazard dam element for HMP has been approved. County to send to us.
    - Previous (2017) critical facility list – PCII data
      - Arrange GIS collection meeting
      - Data Wish List
    - Lifelines – FEMA incorporating into mitigation
    - NFIP data request-Tt to send email request for data to Ann.
    - CAV dates and list of floodplain administrators. Tt to send request email to Ann.
    - CEPA-County to provide CEPA
  - Point of Contact for reviewing Public Information (brochure/surveys/announcements)
    - Draft content for website update, newsletter, social media content, and public meeting announcements Tt to provide social media info and brochure for outreach. Don Lehman (public info officer and director of Public Affairs) to review and provide branding.





**WARREN COUNTY HAZARD MITIGATION PLAN - 2023 UPDATE**  
**Project Management Team Meeting – Agenda**  
**9/16/2022 at 2:00 pm**



- 
- Meeting Logistics-[discuss next week](#).
    - Schedule first Steering Committee meeting
    - Schedule HMP Kick-Off (public?)
      - Date and Location
  - Hazard of Concern Identification- [Tt to send survey prior to SC Kick-Off](#)
  - Plan Style Guide – [ask Don](#)
  - Communications Guide – [copy John Gibb in meetings](#).
  - In-Kind Tracking-[Jim tracking in-kind](#)
    - County can begin tracking all time with the development of RFP, reviews, meetings, this call etc.
    - Tetra Tech to track meeting attendance for all participants

Documents:

Municipal Letter of Participation Request

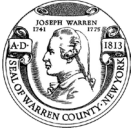
Project Schedule

Data Wish List

In-Kind Tracker

NFIP Request Letter/ISAA





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #1 – AGENDA**  
**MEETING DATE/TIME: October 27, 2022 – 9:00 am**



Remote – MS Teams Link [Click here to join the meeting](#) (preferred for screen sharing)

Remote – Dial-in by phone (audio only) - [+1 518-300-1367,,453227155#](#) United States, Albany; Phone Conference ID: 453 227 155#

- 1. Welcome and Introductions**
- 2. Hazard Mitigation Plan Overview**
- 3. Project Organization**
- 4. Steering Committee Composition and Ground Rules**
- 5. In-Kind Services Tracking**
- 6. Planning Process and Data Collection Status**
- 7. Hazards of Concern Identification**
- 8. Critical Facilities and Lifelines**
- 9. Mission Statement, Goals, and Objectives**
- 10. Conclusion and Next Steps**



# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Hybrid In-person and Teleconference Teams Meeting
Date of Meeting:	October 27, 2022, 9:00 am – 10:15 am

## Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ethan Gaddy	Warren County Planning Department, CSC
Aaron Frankenfeld	ADK Glens Falls Transportation Council, Director
Tammie DeLorenzo	Warren County Administrators Office
Ann Marie Mason	Warren County, Director of Emergency Services
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Dan Barusch	Town/Village Lake George, Planner
Elizabeth O'Reilly	NYSDHSES, Planning Manager
Shannon Clarke	NYSDHSES, Planner
Shelby Meyers	NYSDHSES, Planner
Paul Hoole	FEMA, Mitigation Planning
Cynthia Addonizio-Bianco	Tetra Tech
Erika Corsi	Tetra Tech

## Agenda Summary:

Item No.	Description	Action item(s):
1	<b>Welcome and Opening Remarks</b> <ul style="list-style-type: none"> <li>Meeting started at 9:05 pm</li> <li>Jim Lieberum, Director of Warren County Soil and Water Conservation District gave opening remarks providing an overview of the importance of this planning process and thanking the participants for agreeing to serve on the Steering Committee.</li> <li>Cynthia Addonizio-Bianco, project manager from Tetra Tech (Tt), also thanked participants.</li> <li>Elizabeth O'Reilly of NYSDHSES noted that hazard mitigation is a diverse subject and can cross the line between recovery and response. The purpose of the mitigation plan is to reduce the amount of response potentially necessary against natural hazards. She indicated that NYSDHSES will provide support as needed throughout the mitigation planning process.</li> <li>Each participating member introduced themselves and provided input on their participation in the process: <ul style="list-style-type: none"> <li>Resiliency</li> </ul> </li> </ul>	Steering Committee to provide additional relevant plans to review and incorporation into the mitigation plan.



# Warren County Hazard Mitigation Plan Update Meeting Notes



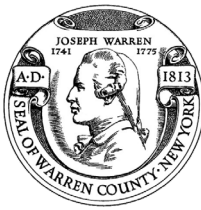
	<ul style="list-style-type: none"><li>○ Intersection of hazard mitigation and climate adaptation mitigation through Climate Smart Communities program</li><li>○ Communication with other municipalities that has technical capacity restrictions</li><li>○ Help inform communities on their land use impacts to resiliency</li><li>○ Maintaining Queensbury codes. Queensbury identified as busiest community in terms of development and economic driver for the County</li><li>○ Bridge information throughout the County</li></ul>	
2	<p><b>Project Overview</b></p> <ul style="list-style-type: none"><li>● Ms. Addonizio-Bianco provided the following information:<ul style="list-style-type: none"><li>○ An overview of hazard mitigation, what it is and how it can provide increase resilience through the development of a FEMA-approved Hazard Mitigation Plan. She also noted the need to track time spent working on the plan outside of meetings through in-kind tracking to provide match for federal funding support for the planning effort. An online tracker will be sent out to all plan participants.</li><li>○ An overview of the phases of the hazard mitigation planning process including description of the project organization:<ul style="list-style-type: none"><li>■ Core Planning Team (CPT)</li><li>■ Warren County Emergency Services</li><li>■ Warren County Soil and Water Conservation District</li><li>■ Tetra Tech</li></ul></li><li>○ Steering Committee (SC)<ul style="list-style-type: none"><li>■ Numerous County Departments, Major Businesses, Outside Agencies, 1 municipal representatives</li></ul></li><li>○ Planning Partnership (PP)<ul style="list-style-type: none"><li>■ All participating municipalities and Steering Committee members.</li></ul></li><li>○ FEMA</li><li>○ Stakeholders</li></ul></li><li>● Steering Committee roles and responsibilities:<ul style="list-style-type: none"><li>○ Provide guidance and leadership</li><li>○ Oversee the planning process</li><li>○ Act as point of contact for partners and stakeholders</li></ul></li><li>● Focus on updating the 2017 critical facilities inventory to ensure completeness and identify lifeline facilities. The County and planning partners will provide input to update the list of critical facilities and lifelines via an online survey. Once updated, the information will be used during the risk assessment and mitigation strategy development.</li><li>● DHSES will notify the County when the draft plan has been submitted to FEMA for review.</li><li>● FEMA will notify the County and jurisdictions to let them know the submitted plan is approvable.</li><li>● Request for relevant plans and studies. (Post meeting note: The attached presentation has been updated to reflect the list of plans</li></ul>	<ul style="list-style-type: none"><li>● Tt to provide SC member access to the project OneDrive site and Steering Committee members to confirm access to OneDrive – access to be provided in separate email</li><li>● Critical facility inventory survey to be distributed by Tt to the County and municipal representatives.</li></ul>



# Warren County Hazard Mitigation Plan Update Meeting Notes

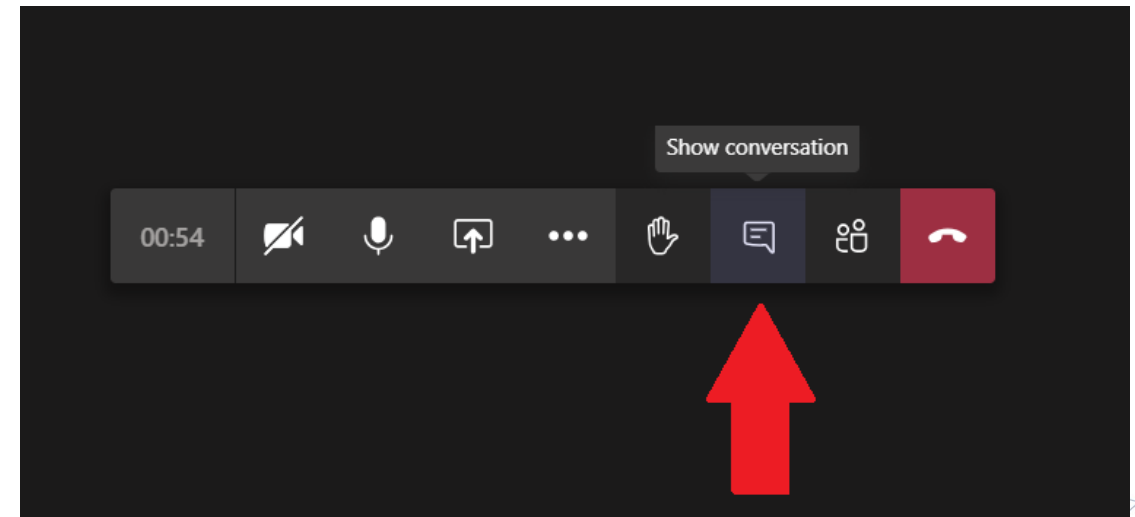


	<p>collected to date.) The committee members are requested to review the list and forward links to additional plans that may be relevant to the planning process.</p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco noted that participants will be given access to OneDrive to share documents and information.</li> </ul>	
3	<p><b>Risk Assessment and Hazards of Concern</b></p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco discussed the process of the risk assessment and reviewed the hazards of concern identified in the last HMP. These hazards of concern will need to be reviewed and updated as necessary. A survey will be sent out to the Steering Committee.</li> <li>One action is needed for every hazard of concern that impacts a municipality.</li> </ul>	<ul style="list-style-type: none"> <li>Steering Committee to provide input to update Hazards of Concern– to be distributed by and returned to Tt via email.</li> </ul>
4	<p><b>Goals and Objectives</b></p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco introduced the goals and objectives from the last HMP and provided suggestions to update them to align with current priorities. The Steering Committee as tasked with reviewing the mission statement, goals and objectives to provide feedback to guide the plan update.</li> <li>The Steering Committee recommending creating a goal and objective that addresses daily and long-term activities</li> </ul>	<ul style="list-style-type: none"> <li>Steering Committee to provide input – to be distributed by and returned to Tt via email.</li> <li>Steering Committee to clarify definition of ‘daily and long-term activities’</li> </ul>
5	<p><b>Upcoming Meetings</b></p> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco reviewed upcoming meetings: <ul style="list-style-type: none"> <li>Steering Committee Meeting – October 27<sup>th</sup>, 2022*</li> <li>Planning Partnership – November 2<sup>nd</sup>, 2022</li> <li>Risk Assessment Meeting – February, 2023 (<i>tentative</i>)</li> <li><i>Planning Partnership Risk Assessment Meeting – February, 2023 (tentative)</i></li> <li>Mitigation Strategy Workshop – March, 2023 (<i>tentative</i>)</li> </ul> </li> </ul>	
6	<p><b>Next Steps</b></p> <ul style="list-style-type: none"> <li>Attend Planning Partnership Meeting</li> <li>Determine Hazards of Concern to include in the HMP</li> <li>Strengths, Weaknesses, Obstacles and Opportunities (SWOO)</li> <li>Review Hazard Profiles</li> <li>Review Risk Assessment Results</li> <li>Identify Problems and Problem Areas</li> <li>Develop Mitigation Strategy</li> <li>Review Draft Plan</li> <li>Submit Draft Plan for NYSDHSES/FEMA Review</li> <li>Adopt FEMA-Approved Plan</li> <li>Implement Projects and Maintain the Plan and Increase Resilience</li> </ul>	
7	<p><b>Conclusion</b> - The meeting concluded at 10:15 am.</p>	



# Welcome!

- If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.
  - Bring your mouse to the lower part of the screen until a set of buttons appears. They may also be at the top of your screen.
  - Click “Show Conversation.”





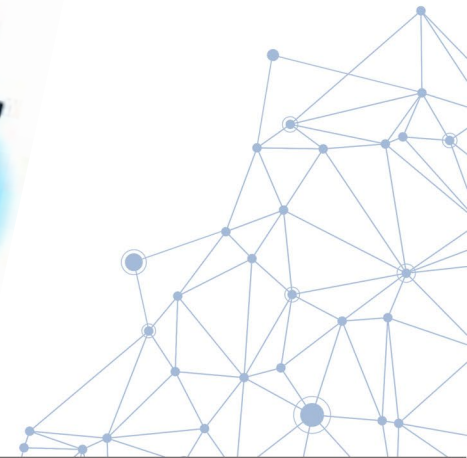
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Steering Committee Kick-Off Meeting | October 27,  
2022



# Agenda

- Welcome and Introductions
- In-Kind Services Tracking
- Benefits of Hazard Mitigation
- Hazard Mitigation Planning Overview
- Project Organization
- Steering Committee Responsibilities
- Public and Stakeholder Outreach
- Update Hazards of Concern and Risk Assessment
- Critical Facilities and Lifelines
- Goals and Objectives
- Schedule
- Questions/Next Steps/Wrap Up





# Introductions

- Tell us...
  - What's your name?
  - Where you are from?
  - What is your mitigation experience?
  - What do you want to focus on during this process or what is your area of expertise?
  - What are your resilience concerns for Warren County?





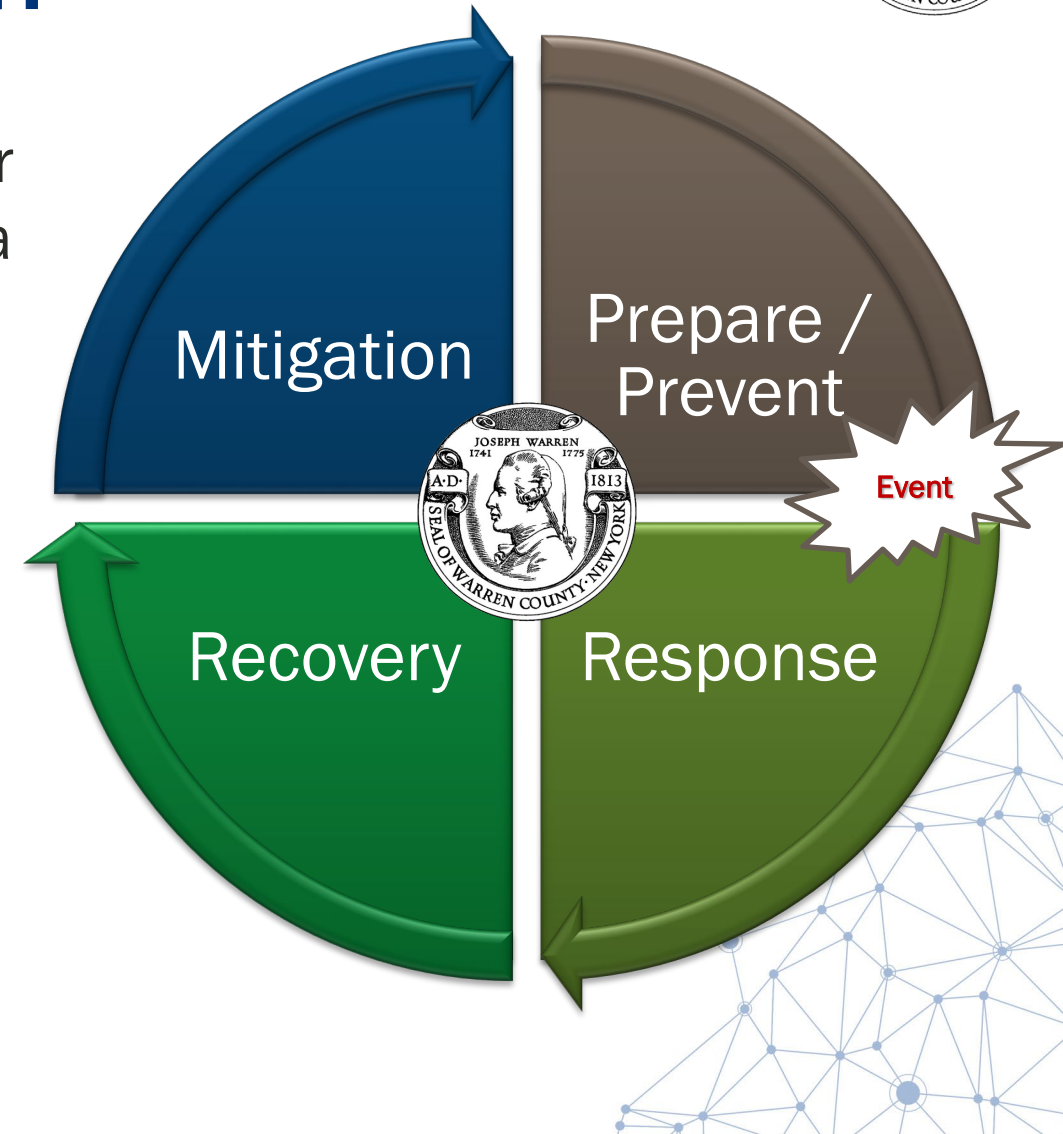
# Hazard Mitigation – What is it?

Mitigation is a sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event

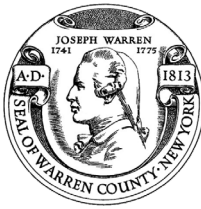
-or-

Any action taken to reduce future disaster losses

“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).










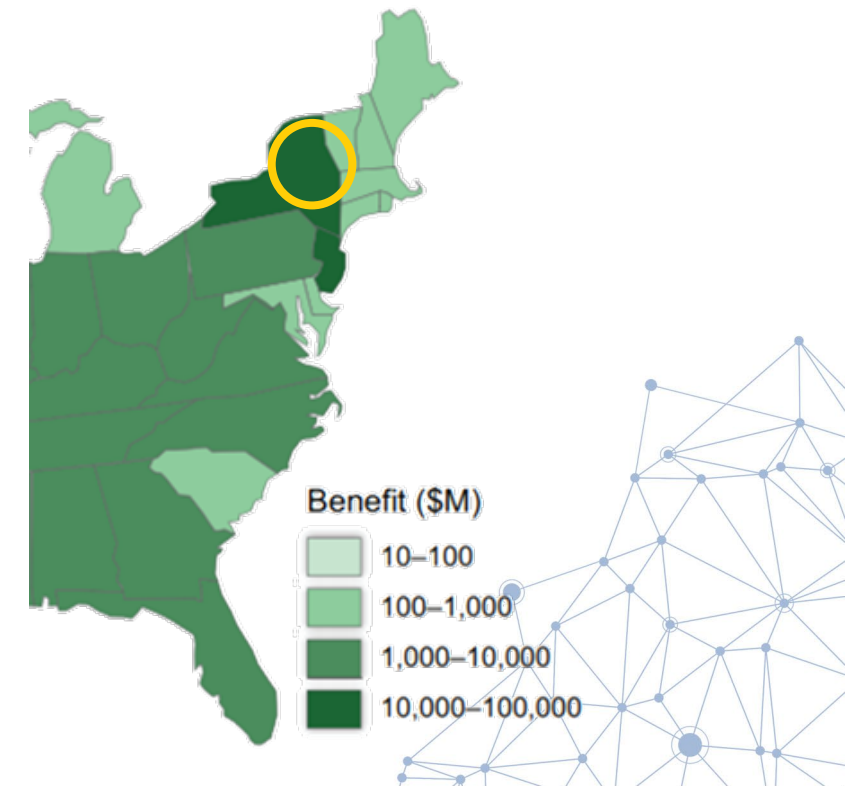


# Hazard Mitigation Works!

- According to the January 2019 National Institute of Building Sciences Natural Hazard Mitigation Saves: 2018 Interim Report, federal mitigation grants save \$6 for every \$1 spent!

Mitigation saves in every in state! New York has saved up to \$100 million in benefits.

National Benefit-Cost Ratio Per Peril <small>*BCR numbers in this study have been rounded</small>		Federally Funded
Overall Hazard Benefit-Cost Ratio		6:1
 Riverine Flood		7:1
 Hurricane Surge		Too few grants
 Wind		5:1
 Earthquake		3:1
 Wildland-Urban Interface Fire		3:1

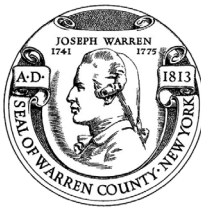


# Why Update?

- The mitigation plan update will:
  - Help the County prepare for and mitigate the effects of disasters
  - Continue to allow the County and participating partners to be eligible for pre- and post-disaster mitigation funding
  - Support CRS participation/rating of municipalities

Hazard	Losses (\$)
Blizzard	Losses not reported
Drought	Losses not reported
Excessive Temperature	Losses not reported
Flash Flood	\$22.36 million
Flood	\$6.24 million
Hail	\$13,000
Heavy Rain	Losses not reported
Heavy Snow	\$35,000
High Wind	\$731,000
Hurricane/Tropical Storm	Losses not reported
Lightning	\$77,000
Strong Wind	\$193,000
Thunderstorm Wind	\$10.62 million
Tornado/Funnel Cloud	\$252,500
Winter Storm	\$182,300
Winter Weather	\$1,000
Total	\$42.345 million

Source: NOAA-NCEI 2022







# What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480



4 Flood



4 Hurricane



4 Severe Storm(s)



2 Biological



2 Other



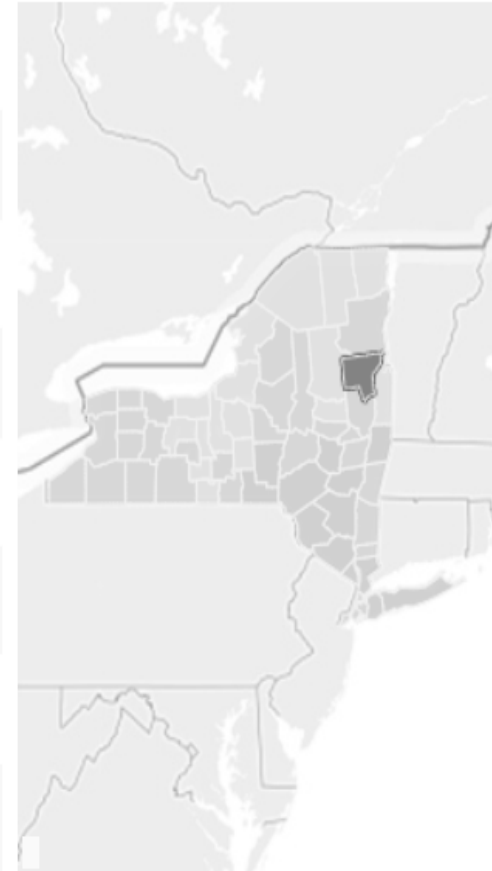
1 Earthquake



1 Fire

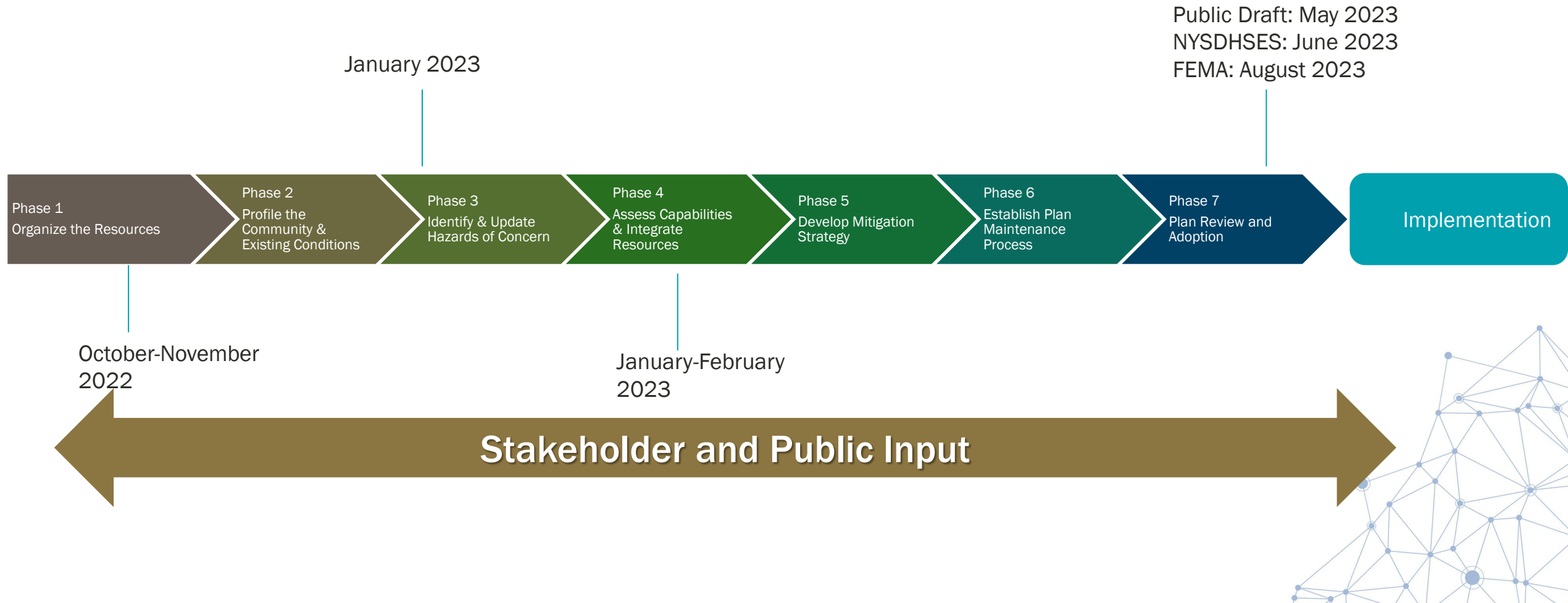


1 Snow

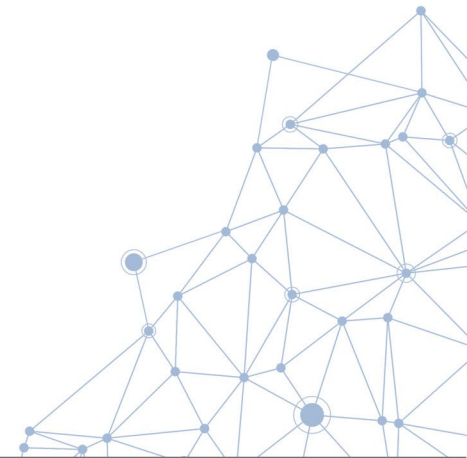




# Planning Process Overview



# Project Organization





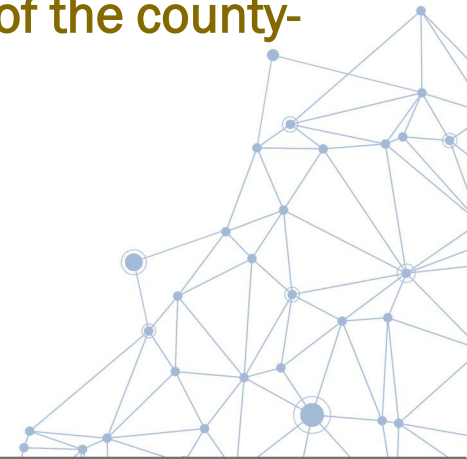
# Hazard Mitigation Committee Composition

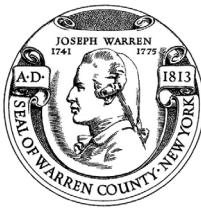
## Steering Committee Members

Warren County Soil and Water Conservation District	Adirondack / Glens Falls Transportation Council
Warren County Office of Emergency Services	City of Glens Falls
Warren County Department of Planning and Community Development	Village of Lake George
Warren County Department of Public Works	SUNY Adirondack
Town of Queensbury – Planning Department	Glens Falls Hospital
	Finch Pryne
	Board of Supervisors

## Role

- ✓ Guide the Planning Partnership through the planning process
- ✓ Identify the natural hazards of concern
- ✓ Develop mitigation goals and objectives
- ✓ Develop public and stakeholder outreach strategy
- ✓ Support the development of the county-level mitigation strategy
- ✓ Review plan documents





# Steering Committee Roles and Responsibilities



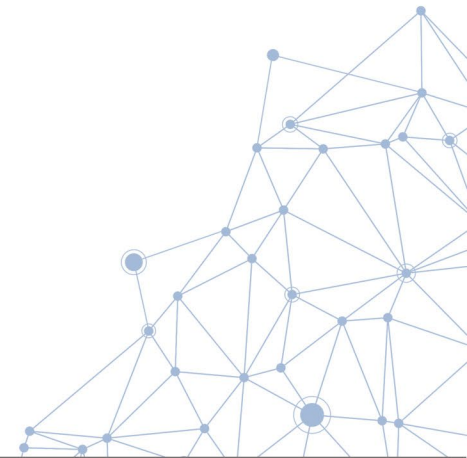
PROVIDE GUIDANCE AND  
LEADERSHIP THROUGHOUT  
THE PLANNING PROCESS

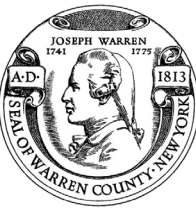


OVERSEE THE PLANNING  
PROCESS



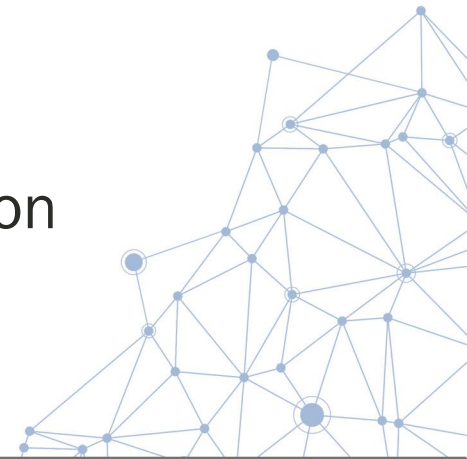
ACT AS THE POINT OF CONTACT FOR  
ALL PARTNERS AND STAKEHOLDERS





# Early Progress

- Requested/Received NFIP Community Assistance Visit Data
- Requested NFIP Data
- GIS Data Collection
- Review of Hazards of Concern/Distributed Worksheet to Steering Committee
- HMP website – In development
- HMP Fact Sheet, Citizen Survey, Agency Surveys - in progress
- County-Level/Regional Plan Collection
- Planning Partnership Outreach/Letter of Intent to Participate Distribution
- Planning Partnership Kick-Off Meeting Scheduled (November 2<sup>nd</sup> at 9am)







# In-Kind Services

Name of Team Member: \_\_\_\_\_

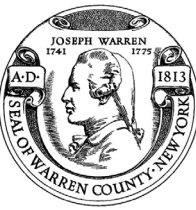
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes – sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



# Data Collection Status

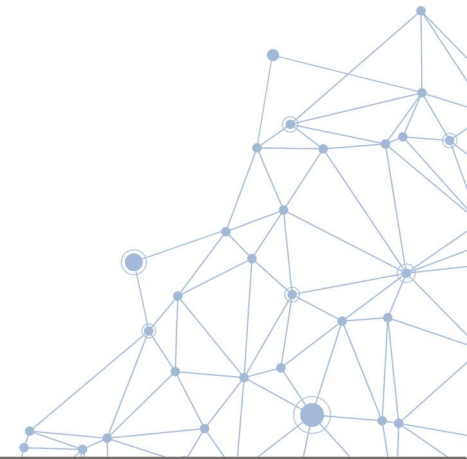
- Letters of Intent to Municipalities
- Critical Facility Inventory (County providing initial data)
- Reports and Plans – Initial collection of reports, plans, and codes available online
- Capability Assessments
- Mitigation Strategy Updates



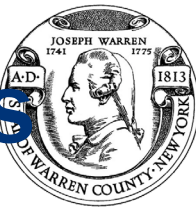


# Public and Stakeholder Outreach

- HMP is in development-  
<https://www.warrencountynyhmp.com>
- Social Media
- Stakeholder Survey
- Public Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey



# Relevant County and Regional Plans and Studies

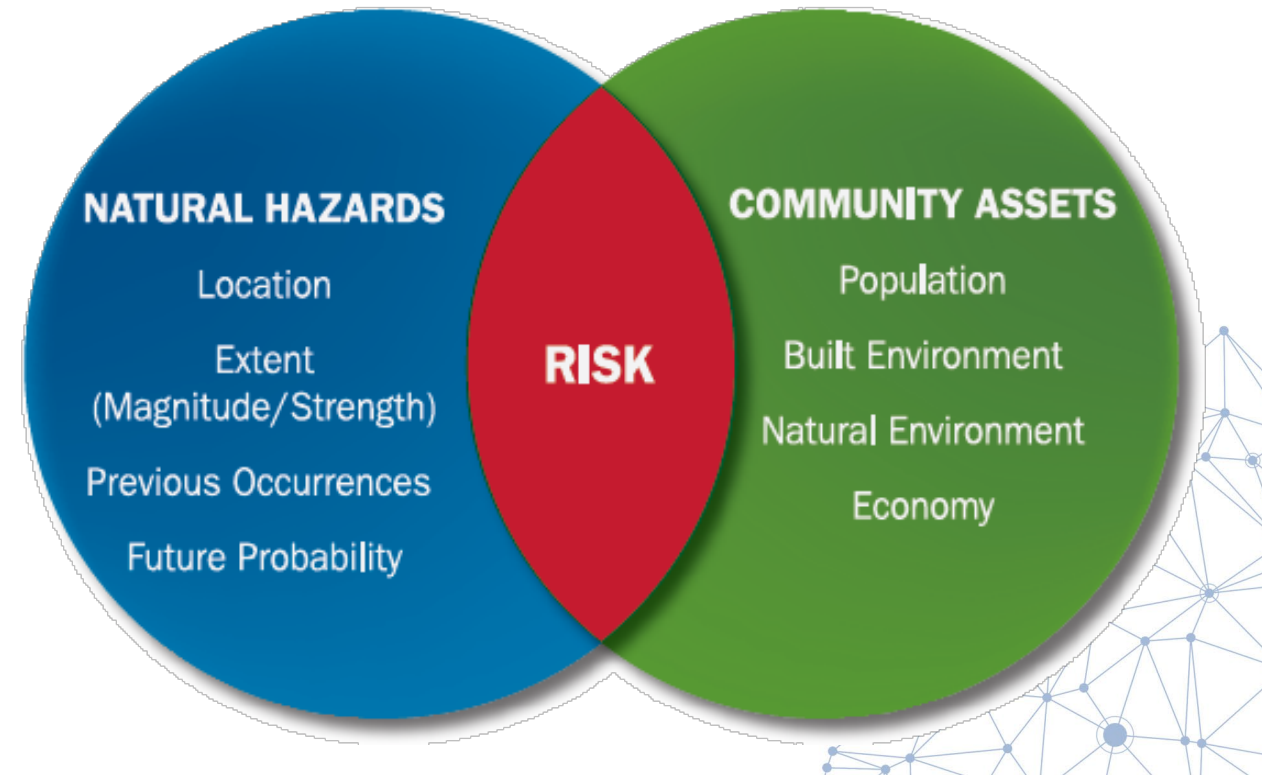


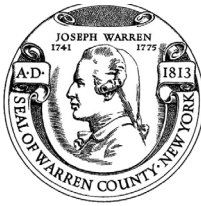
Name of Plan/Document	Date of Plan	Jurisdiction
Excessive Heat Plan	2022	Countywide
Schroon Lake Watershed Management Plan Addendum	2019	Chester (T)
Lake Champlain Watershed Roadside Erosion Assessment	-	Bolton (T), Hague (T), Lake George (T), Queensbury (T)
Upper Hudson River Watershed Management Plan	2020	Countywide
Friends Lake Watershed Assessment	2017	Chester (T)
LC Nonpoint Source Pollution Watershed Assessment and Management Plan	2018	Countywide
LG HAB Plan 2022 Update	2022	Lake George (T), Bolton (T)
Loon Lake Watershed Report	2021	Loon Lake, Chester (T)
Warren County - Dam Risk into Local HMG Plans	2021	Countywide

- Others?

# Update Risk Assessment

- Update assets
- Examine previous impacts
- Analyze risks
- Review with Steering Committee
- Risk assessment meeting



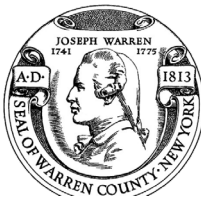


# NYS DHSES Requirements



- Establish Jurisdictional Teams
- Assess Critical Facilities
- Plan for Displaced Residents
  - Intermediate (Temporary Housing) and Long-Term (Permanent Housing)
- Plan for Evacuation and Sheltering
- Document Past Mitigation Accomplishments
- Include Jurisdictional Annexes
- Develop Mitigation Actions (minimum of 2 projects)
- Plan for Climate Change





# EXERCISE – Identifying Hazards of Concern

Thinking back over the last few years...

- The 2017 plan included:
  - Disease Outbreak
  - Earthquake
  - Flood
  - Infestation
  - Landslide
  - Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
  - Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
  - Wildfire
- In review...
  - Have additional hazards impacted the County since 2017?
  - Have hazard been mitigated and no longer cause damage?
  - Should hazards be regrouped to minimize number or required actions?
  - Should additional hazards be included?

- Have additional hazards impacted Warren County since 2017?
- Have hazards been mitigated and no longer cause damage or put the County at risk?
- Should hazards be regrouped to align with the 2019 State HMP?

2019 NY State HMP	Identified Hazard in the 2017 Warren HMP	2017 Warren HMP Ranking	2021 CEPA Ranking**	Has the frequency, severity, or location of the hazard changed in your community?  NC = No Change; I = <u>Increase</u> ; D = Decrease  (Please provide an explanation for any hazards marked I or D in this column)	2023 Warren HMP* (indicate 'keep', combine with other hazard, or provide comments for any changes)
<b>Natural Hazards</b>					
Avalanche	-	-			
Coastal Hazards					
<del>Coldwave</del>	-	-			
Drought	-	-	Low		
Earthquake	X	High	Low		Keep
Flooding	X	Medium	Very High		Keep
Hail	X	Severe Storm: High			Keep

Please identify any other hazards that you believe should be considered in the 2023 update of the Warren County Hazard Mitigation Plan (e.g. landslides, wildfires, invasive species, etc.)

What are the natural hazards that present the most risk to your jurisdiction today?

- ☐ Climate Change
- ☐ Dam Failure
- ☐ Drought
- ☐ Earthquake
- ☐ Extreme Temperature (heat and cold)
- ☐ Flood (riverine, dam failure, beaver dam)
- ☐ Geologic (landslide, subsidence/sinkhole)
- ☐ Severe Weather (high wind, tornado, thunderstorm, hail)
- ☐ Severe Winter Weather (heavy snow, blizzard, ice)
- ☐ Wildfire
- ☐ Hazardous Materials (fixed site, in-transit)
- ☐ Disease Outbreak
- ☐ Invasive Species
- ☐ Other: \_\_\_\_\_

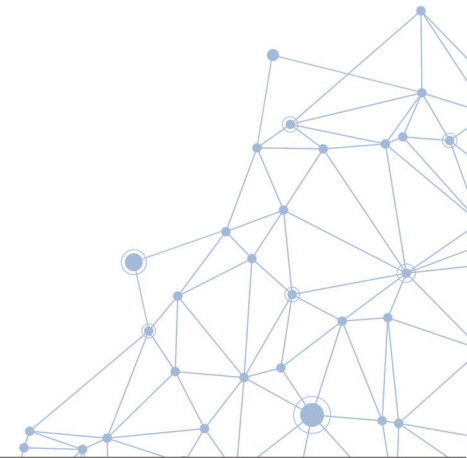


# Community Lifelines

- Review 2017 critical facility inventory to ensure complete
- Crosswalk and identify lifelines

***Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security*

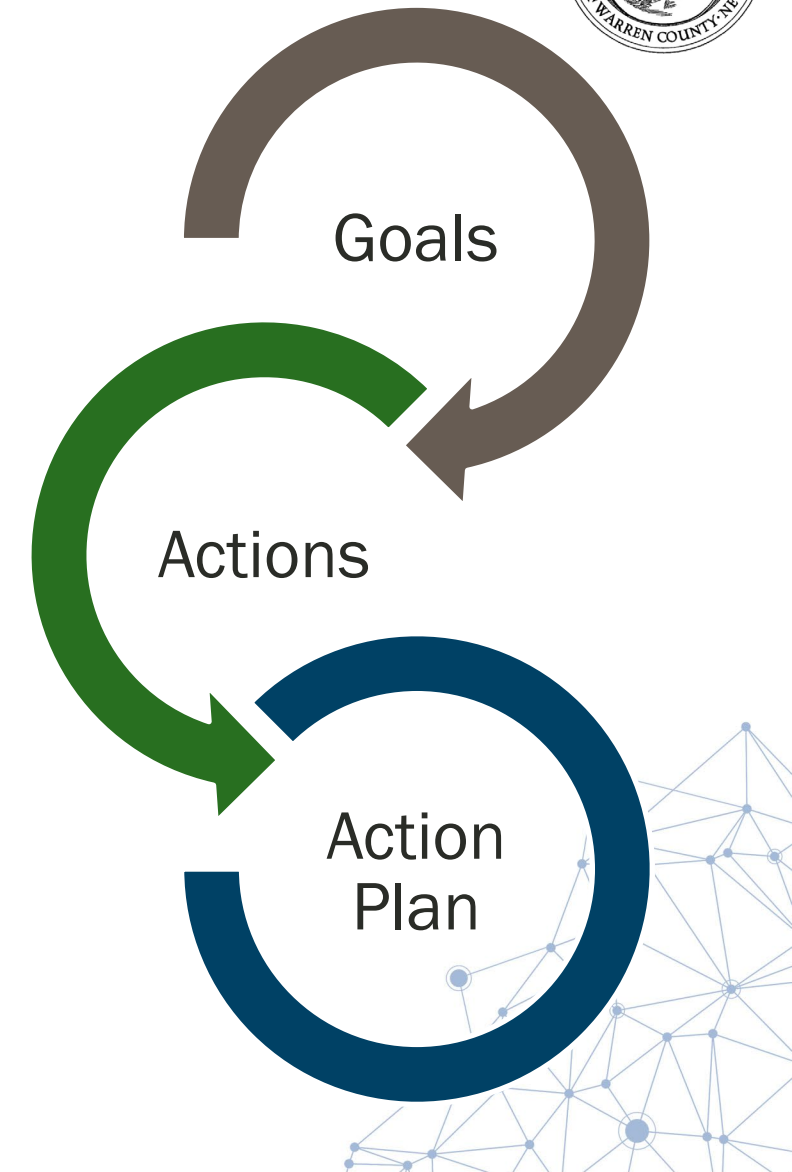
***Essential facilities** are a subset of lifelines that include those facilities that are important to ensure a full recovery following the occurrence of a hazard event. For the County risk assessment, this category includes police, fire, EMS, schools/colleges, shelters, senior facilities, and medical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

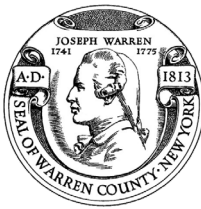




# Mitigation Strategy

- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce risk from hazards?
- Action Plan
  - How will the actions be prioritized and implemented?



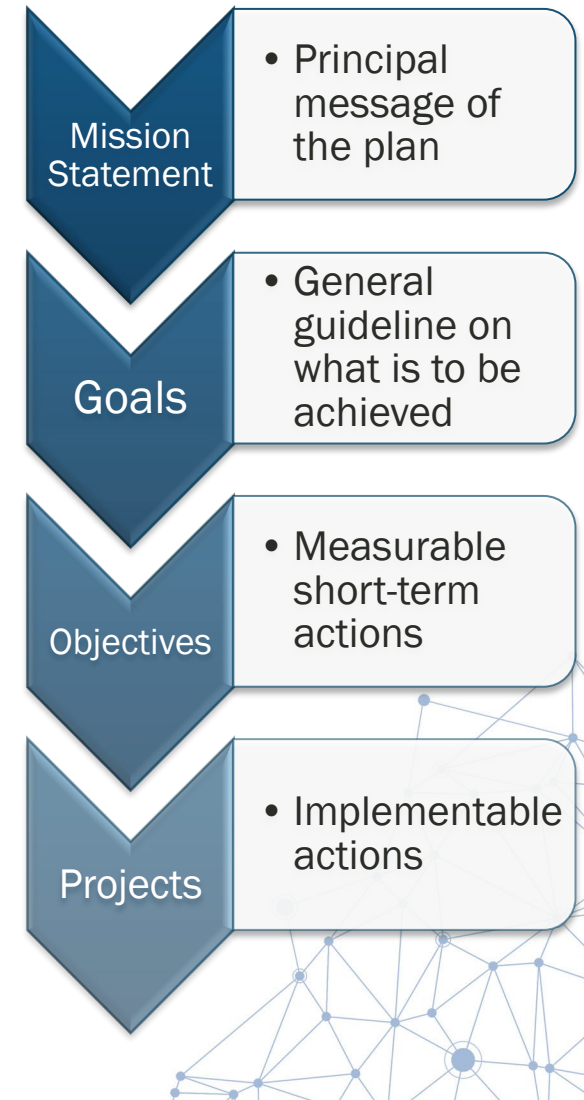


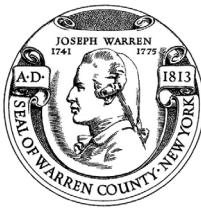
# Update Mission Statement?

As part the of the 2017 update process, the Steering Committee reviewed the mission statement and elected to maintain it without edit or amendment, as noted below. At this time, the committee is requested to review the Mission Statement to update to align with current County, state, and local policy. The committee is requested to consider adding the concept of equity and inclusiveness of socially vulnerable populations to the mission statement and the goals and objectives as well as additional adjustments to align with count, state, and local policy.

## *2017 HMP Mission Statement*

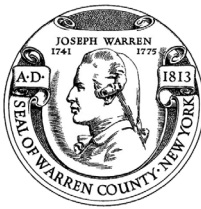
*To create communities whose daily activities reflect a comprehensive commitment by government, business, non-profit organizations and the public to eliminate or reduce risks and adverse impacts from natural, technological and human-caused hazards .*





# Goals and Objectives Review and Update

Goal	Objective
<b><u>Goal 1:</u></b>  <b>Protect Life and Property.</b>	1.1: Introduce mitigation activities that will make homes, businesses and critical facilities and infrastructure more hazard resistant and to increase resilience.
	1.2: In areas vulnerable to hazards, encourage businesses and homeowners to take preventive actions when possible .
	1.3: Periodically review existing building codes, safety procedures, municipal and county ordinances to update recent standards for building protection.
	1.4: Immediately enforce existing building codes within the jurisdiction.
	1.5: Encourage owners of home and businesses and renters to purchase appropriate insurance coverage for potential damages from hazards.
<b><u>Goal 2:</u></b> <b>Increase Public Awareness</b>	2.1: Continue developing and integrating education and outreach programs in an effort to enhance public awareness of the hazards, providing information on specific activities for individuals in anticipation of a hazard event .
	2.2: Provide information on current government programs and funding resources to assist with mitigation and resilience.
	2.3: Strengthen communication and cooperation between public agencies, citizens, non-profit groups, and businesses to implement mitigation activities effectively.



# Goals and Objectives Review and Update

## Goal 3: Provide for Emergency Services

3.1: Coordinate hazard mitigation activities with existing local emergency plans.

3.2: Identify and plan for acquiring any specific emergency services and equipment needed to improve response capabilities for specific hazards.

3.3: Review emergency traffic routes, making changes as needed, and educating the public as to the routes .

## Goal 4:

Support comprehensive county and local mitigation through the integration of hazard mitigation planning into related state, regional, county and local plans and programs.

4.1: Promote land use planning to encourage resilient and sustainable efforts throughout statewide and regional programs that address zoning, building codes, capital improvement programs, open space preservation, nature-based solutions, and storm water management regulations.

4.2: Continue to participate in state, regional and local programs and efforts that focus on practices that support or enhance resiliency.

4.3: Improve hazard data through participation in studies, research, and mapping to enhance information related to the impacts of hazards and related risks, vulnerability, and losses.

## Goal 5:

Encourage the development and implementation of long-term, cost-effective, and resilient mitigation projects to preserve or restore the functions of natural systems.

5.1: Encourage the use of green and natural infrastructure and nature based solutions.

5.2: Provide technical assistance to communities and stakeholders in the application and implementation of mitigation projects that preserve or restore natural systems.

5.3: Maintain and encourage ongoing relationships between state agencies and partners to play an active and vital role in preservation and restoration of vulnerable natural systems.

5.4: Promote climate change adaption strategies that protect against long-term effects on the environment.

## Goal 5: Address Long-Term Vulnerabilities from High Hazard Dams

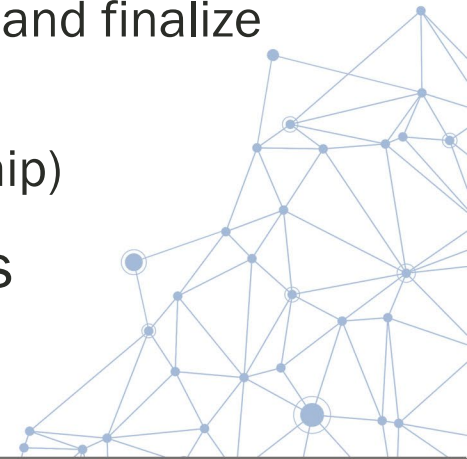
5.1: Ensure dam infrastructure is maintained

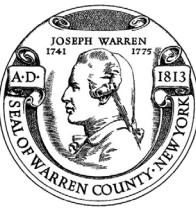




# Schedule

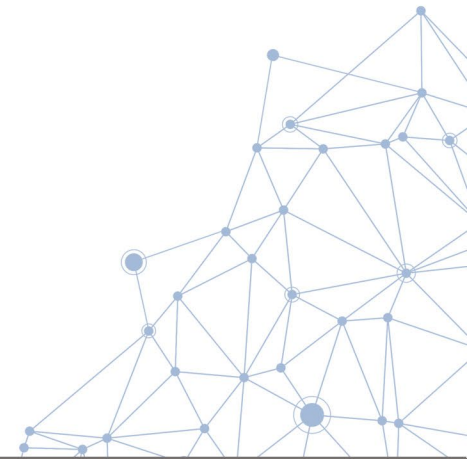
- Planning Process
  - Steering Committee Kick-Off – TODAY!
  - Planning Partnership Kick-Off – November 2<sup>nd</sup> at 9 am (Steering committee will be invited)
- Update Risk Assessment
  - Data collection is underway; confirm local critical facilities inventory by December 2023
  - Begin vulnerability assessment
  - Steering Committee Meeting: November, to identify hazards of concern for County and finalize goals
  - Risk Assessment Meetings: February (Steering Committee and Planning Partnership)
- Public Involvement Strategy – ongoing throughout the planning process

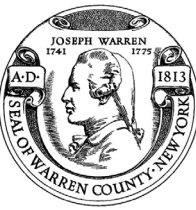




# Schedule

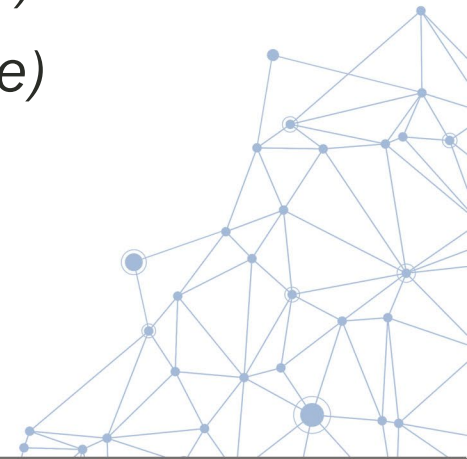
- Mitigation Strategy
  - Begin working with the municipalities in **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 2023**
- Draft Plan to Steering Committee in **May-June 2023** *(as sections are ready)*
- Public Review Period (30 days) – **June 2023**
- Final draft plan to NYSDHSES by June 2023 and FEMA by **August 2023**





# Next Steps – Key Dates

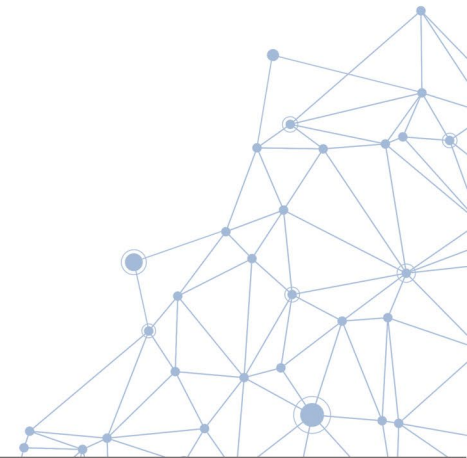
- Complete Hazards of Concern & Goals and Objectives worksheets and return by November 1<sup>st</sup>.
- Confirm access to OneDrive – *access to be provided in separate email*
- Planning Partnership Kick-Off\* (Steering Committee and Municipalities) on **November 2<sup>nd</sup>, 2023**
- Steering Committee Meeting\* – October 27<sup>th</sup>, 2022
- Steering Committee Risk Assessment Meeting – February, 2023 (*tentative*)
- Planning Partnership Risk Assessment Meeting – February, 2021(*tentative*)
- Mitigation Strategy Workshop – March 2023 (*tentative*)





# Next Steps

1. Attend Planning Partnership Meeting
  2. Determine Hazards of Concern to include in the HMP
  3. Strengths, Weaknesses, Obstacles and Opportunities (SWOO)
  4. Review Hazard Profiles
  5. Review Risk Assessment Results
  6. Identify Problems and Problem Areas
  7. Develop Mitigation Strategy
  8. Review Draft Plan
  9. Submit Draft Plan for NYSDHSES/FEMA Review
  10. Adopt FEMA-Approved Plan
  11. Implement Projects and Maintain the Plan
- ➡ Increase Resilience!



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #1 – AGENDA**  
**MEETING DATE/TIME: November 2, 2022 – 10:00 am**



Virtual: Microsoft Teams Meeting - ***Click here to join the meeting*** or use this link:

[https://teams.microsoft.com/l/meetup-](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MGE2NDNIYWYtYWU3Ny00NGU4LWJkMWQtNmY0NGRhOTNiMTQ0%40thread.v2/0?context=%7b%22id%22%3a%22a40fe4ba-abc7-48fe-8792-b43889936400%22%2c%22oid%22%3a%22e2c51125-ed2c-4397-a8d5-53494e2597a5%22%7d)

[join/19%3ameeting\\_MGE2NDNIYWYtYWU3Ny00NGU4LWJkMWQtNmY0NGRhOTNiMTQ0%40thread.v2/0?context=%7b%22id%22%3a%22a40fe4ba-abc7-48fe-8792-b43889936400%22%2c%22oid%22%3a%22e2c51125-ed2c-4397-a8d5-53494e2597a5%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MGE2NDNIYWYtYWU3Ny00NGU4LWJkMWQtNmY0NGRhOTNiMTQ0%40thread.v2/0?context=%7b%22id%22%3a%22a40fe4ba-abc7-48fe-8792-b43889936400%22%2c%22oid%22%3a%22e2c51125-ed2c-4397-a8d5-53494e2597a5%22%7d)

Dial in by phone (audio only), +1 518-300-1367,,776526083# United States, Albany, NY , Phone Conference ID: 776 526 083#

1. Welcome and Introductions
2. Benefits of Hazard Mitigation
3. Hazard Mitigation Planning Overview
4. Project Organization
5. Public and Stakeholder Outreach
6. In-Kind Services Tracking
7. Planning Partnership Responsibilities
8. Community Lifelines/Critical Facilities
9. Update Hazards of Concern and Risk Assessment
10. Goals and Objectives
11. Schedule
12. Questions/Next Steps/Wrap Up



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Purpose of Meeting:	Planning Partnership Meeting
Location of Meeting:	Hybrid In-person and Teleconference Teams Meeting
Date of Meeting:	November 2, 2022, 9:00 am – 10:05 am

Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ann Marie Mason	Warren County, Director Emergency Services
Ashley Rivers	Warren County OEM, Emergency Services Coordinator
Josh Westfall	Town of Bolton, Planner
Marion Eagan	Town of Chester, Planning and Zoning
Jeremy Little	Town of Chester, Zoning Administrator
Bill Norton	City of Glens Falls, Superintendent Water and Sewer
Michael N. Geraci	Town of Horicon, Supervisor
Danae Tucker	Town of Johnsbury, Bookkeeper
Fred Comstock	Town of Johnsbury, Highway Superintendent
Ernie Dunkley	Town of Johnsbury, Safety Officer
Mike Dunkley	Town of Johnsbury, Assistant Highway Superintendent
Laura Moore	Town of Queensbury, Land Use Planner
John O'Brien	Town of Queensbury, Director of Building and Code Enforcement
Mike Palmer	Town of Queensbury, Fire Marshal
Dave Duell	Town of Queensbury, Highway Superintendent
Deb Runyon	Town of Thurman, Supervisor
Dan Barusch	Town/Village Lake George, Planner
Rob Lanfear	Town/Village Lake George, Highway Department
Keith Lanfear	Town/Village Lake George, Superintendent Public Works
Eugene J. Merlino	Town of Lake Luzerne, Town Supervisor
Karen Putney	Town of Lake Luzerne, Zoning Enforcement Officer
James S. Hull	Town of Warrensburg, Code Enforcement Officer
Elizabeth O'Reilly	NYSDHSES, Planning Manager
Shelby Meyers	NYSDHSES, Planner
Paul Hoole	FEMA, Mitigation Planning
Cynthia Addonizio-Bianco	Tetra Tech, Inc.
Erika Corsi	Tetra Tech, Inc.



# Warren County Hazard Mitigation Plan Update Meeting Notes



Agenda Summary:		
Item No.	Description	Action item(s):
1	<b>Welcome and Opening Remarks</b> <ul style="list-style-type: none"> <li>Meeting started at 9:05 pm</li> <li>Cynthia Addonizio-Bianco, project manager from Tetra Tech (Tt), facilitated introductions, gave opening remarks providing an overview of the importance of this planning process and thanked participants for supporting the hazard mitigation update. Jim Lieberum, Director of Warren County Soil and Water Conservation District introduced the County team.</li> <li>Elizabeth O'Reilly of NYSDHSES indicated that NYSDHSES will provide support as needed throughout the mitigation planning process.</li> </ul>	N/A
2	<b>Project Overview</b> <ul style="list-style-type: none"> <li>Ms. Addonizio-Bianco provided the following information: <ul style="list-style-type: none"> <li>An overview of hazard mitigation, what it is and how it can provide increase resilience through the development of a FEMA-approved Hazard Mitigation Plan. She also noted the need to track time spent working on the plan outside of meetings through in-kind tracking to provide match for federal funding support for the planning effort. An online tracker will be sent out to all plan participants.</li> <li>An overview of the phases of the hazard mitigation planning process including description of the project organization: <ul style="list-style-type: none"> <li>Core Planning Team (CPT)</li> <li>Warren County Emergency Services</li> <li>Warren County Soil and Water Conservation District</li> <li>Tetra Tech</li> </ul> </li> <li>Steering Committee (SC) <ul style="list-style-type: none"> <li>Numerous County Departments, Major Businesses, Outside Agencies, municipal representatives</li> </ul> </li> <li><b>Planning Partnership (PP)</b> <ul style="list-style-type: none"> <li>All participating municipalities and Steering Committee members.</li> </ul> </li> <li>FEMA/NYSDHSES</li> <li>Stakeholders</li> </ul> </li> <li>Planning Partnership roles and responsibilities: <ul style="list-style-type: none"> <li>Provide guidance and leadership</li> <li>Identify hazards of concern</li> <li>Develop mitigation goals and objectives</li> </ul> </li> <li>Develop public and stakeholder outreach</li> <li>Assist with the development of their jurisdictional annex. Each municipality will be provided a version of their jurisdictional annex. The municipal mitigation team will edit and make changes to the annex as needed and return to Tt.</li> </ul>	<ul style="list-style-type: none"> <li>Critical facility inventory survey to be distributed by Tt to the County and municipal representatives.</li> </ul>



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes

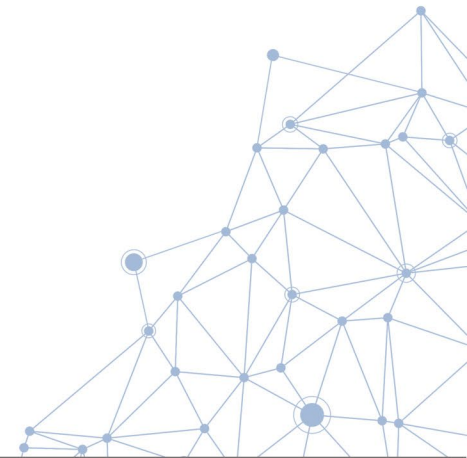
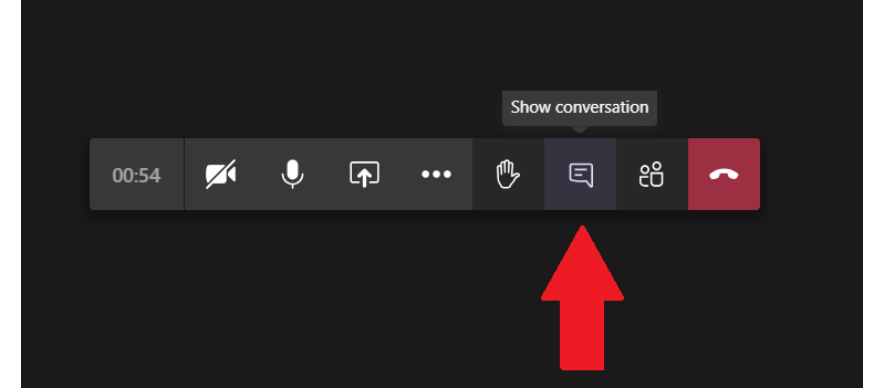


3	<b>Risk Assessment and Hazards of Concern</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco discussed the process of the risk assessment and reviewed the hazards of concern identified in the last HMP. These hazards of concern will need to be reviewed and updated as necessary.</li><li>One action is needed for every hazard of concern that impacts a municipality.</li></ul>	<ul style="list-style-type: none"><li>Planning Partnership to provide input to update Hazards of Concerns in associated worksheets.</li></ul>
4	<b>Goals and Objectives</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco introduced the goals and objectives from the last HMP.</li><li>Community lifelines and critical facilities were introduced from the previous HMP.</li><li>The jurisdictional representative should review the goals and objectives and the community lifelines to identify changes in their communities.</li></ul>	<ul style="list-style-type: none"><li>Planning Partnership to provide critical facilities inventory by December 9th using the survey sent via email</li><li>Tt to send critical facilities inventory survey</li></ul>
5	<b>Upcoming Meetings</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco reviewed upcoming meetings:<ul style="list-style-type: none"><li>Confirm critical facilities/lifeline inventory by December 9<sup>th</sup> 2022</li><li>Worksheet workshop – November 16<sup>th</sup>, 2022, at 10am</li><li>All Annex worksheets due November 23<sup>rd</sup>, 2022</li><li>Risk assessment meeting – February 2023</li></ul></li></ul>	<ul style="list-style-type: none"><li>Tt to send out jurisdictional annexes</li></ul>
6	<b>Next Steps</b> <ul style="list-style-type: none"><li>Determine Hazards of Concern to include in the HMP</li><li>Review Hazard Profiles</li><li>Review Risk Assessment Results</li><li>Identify Problems and Problem Areas</li><li>Develop Mitigation Strategy</li><li>Review Draft Plan</li><li>Submit Draft Plan for NYSDHSES/FEMA Review</li><li>Adopt FEMA-Approved Plan</li><li>Implement Projects and Maintain the Plan and Increase Resilience</li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 10:05 am.	

# Welcome!



- If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.
  - Bring your mouse to the lower part of the screen until a set of buttons appears. They may also be at the top of your screen.
  - Click “Show Conversation.”





# Warren County, New York Hazard Mitigation Plan – 2023 Update

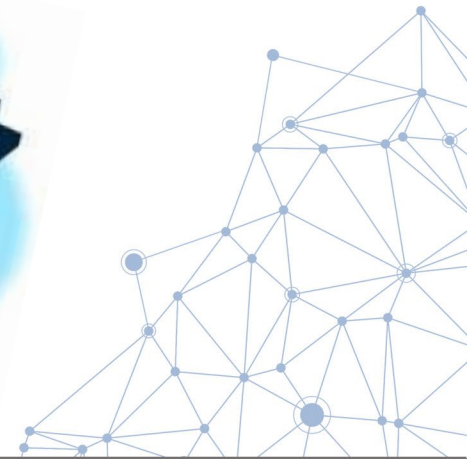
Planning Partnership Kick-Off Meeting | November 2, 2022  
9:00am





# Agenda

- Welcome and Introductions
- Benefits of Hazard Mitigation
- Hazard Mitigation Planning Overview
- Project Organization
- Public and Stakeholder Outreach
- In-Kind Services Tracking
- Planning Partnership Responsibilities
- Community Lifelines/Critical Facilities
- Update Hazards of Concern and Risk Assessment
- Goals and Objectives
- Schedule
- Questions/Next Steps/Wrap Up





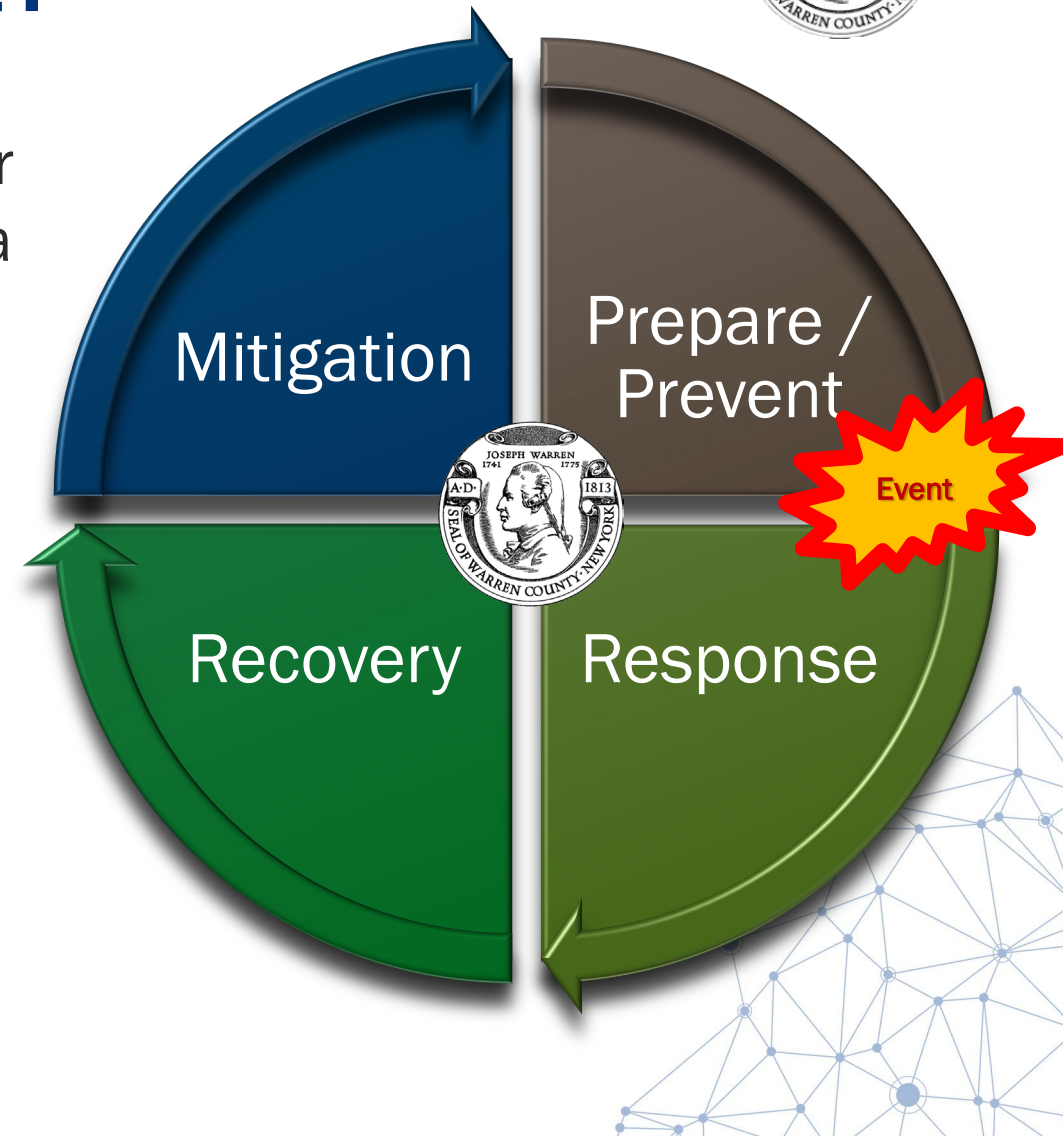
# Hazard Mitigation – What is it?

Mitigation is a sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event

-or-




Any action taken to reduce future disaster losses

“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).

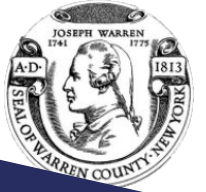


# Hazard Mitigation Works!

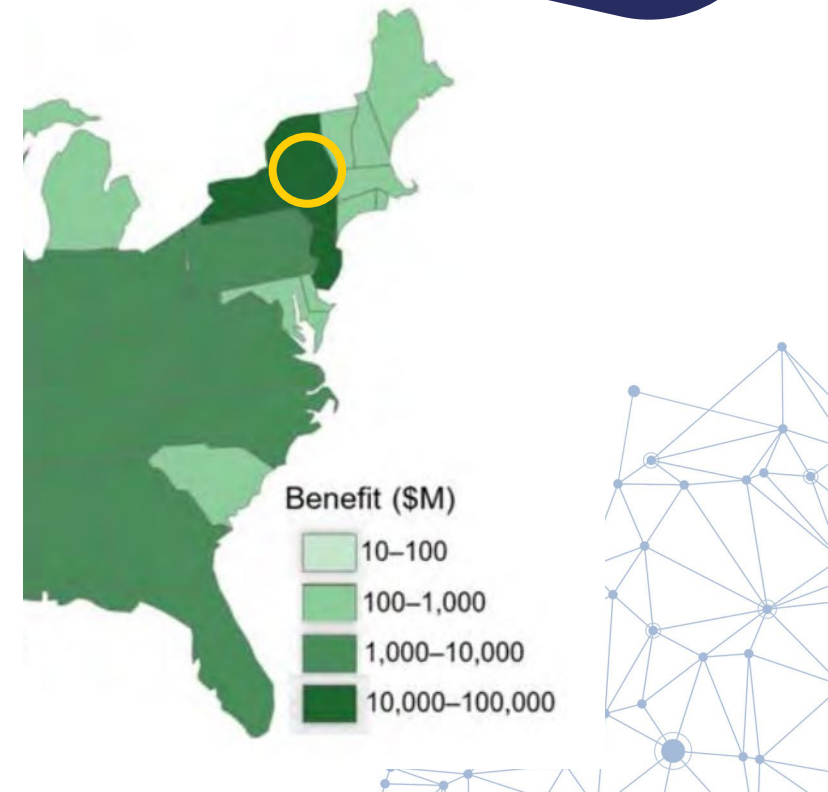
- According to the January 2019 National Institute of Building Sciences Natural Hazard Mitigation Saves: 2019 Report, federal mitigation grants save \$6 for every \$1 spent!

	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
<b>Overall Benefit-Cost Ratio</b>	<b>11:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>6:1</b>
<b>Cost (\$ billion)</b>	<b>\$1/year</b>	<b>\$4/year</b>	<b>\$520</b>	<b>\$0.6</b>	<b>\$27</b>
<b>Benefit (\$ billion)</b>	<b>\$13/year</b>	<b>\$16/year</b>	<b>\$2200</b>	<b>\$2.5</b>	<b>\$160</b>
 <b>Riverine Flood</b>	<b>6:1</b>	<b>5:1</b>	<b>6:1</b>	<b>8:1</b>	<b>7:1</b>
 <b>Hurricane Surge</b>	not applicable	<b>7:1</b>	not applicable	not applicable	not applicable
 <b>Wind</b>	<b>10:1</b>	<b>5:1</b>	<b>6:1</b>	<b>7:1</b>	<b>5:1</b>
 <b>Earthquake</b>	<b>12:1</b>	<b>4:1</b>	<b>13:1</b>	<b>3:1</b>	<b>3:1</b>
 <b>Wildland-Urban Interface Fire</b>	not applicable	<b>4:1</b>	<b>2:1</b>	not applicable	<b>3:1</b>

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Mitigation saves in every in state! New York State has benefited in over \$100 million from federal grants for flood, wind, earthquake, and fire mitigation.

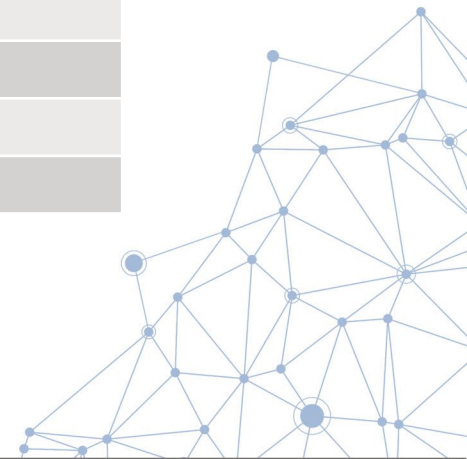


# Why Update?

- The mitigation plan update will:
  - Help the County prepare for and mitigate the effects of disasters
  - Continue to allow the County and participating partners to be eligible for pre- and post-disaster mitigation funding
  - Support CRS participation/rating of municipalities

Hazard	Losses (\$)
Blizzard	Losses not reported
Drought	Losses not reported
Excessive Temperature	Losses not reported
Flash Flood	\$22.36 million
Flood	\$6.24 million
Hail	\$13,000
Heavy Rain	Losses not reported
Heavy Snow	\$35,000
High Wind	\$731,000
Hurricane/Tropical Storm	Losses not reported
Lightning	\$77,000
Strong Wind	\$193,000
Thunderstorm Wind	\$10.62 million
Tornado/Funnel Cloud	\$252,500
Winter Storm	\$182,300
Winter Weather	\$1,000
<b>TOTAL</b>	<b>\$42.345 million</b>

Source: NOAA-NCEI 2022





# What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480



4 Flood



4 Hurricane



4 Severe Storm(s)



2 Biological



2 Other



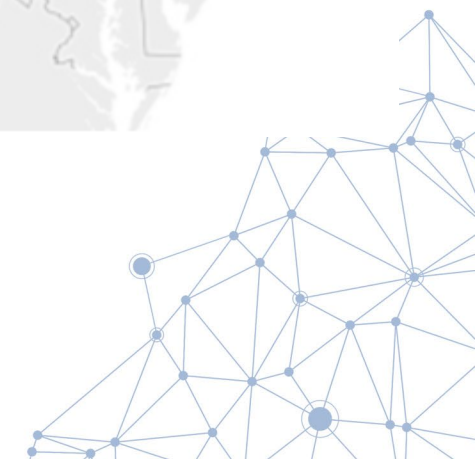
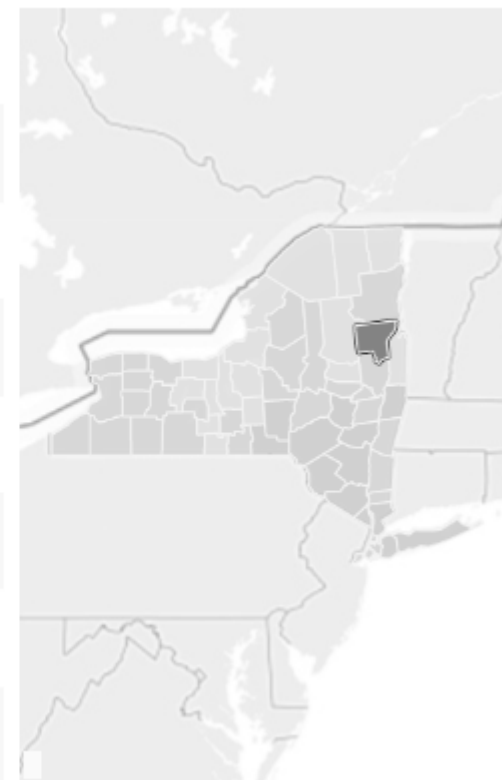
1 Earthquake



1 Fire

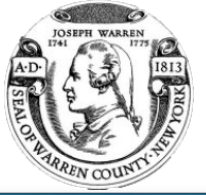


1 Snow



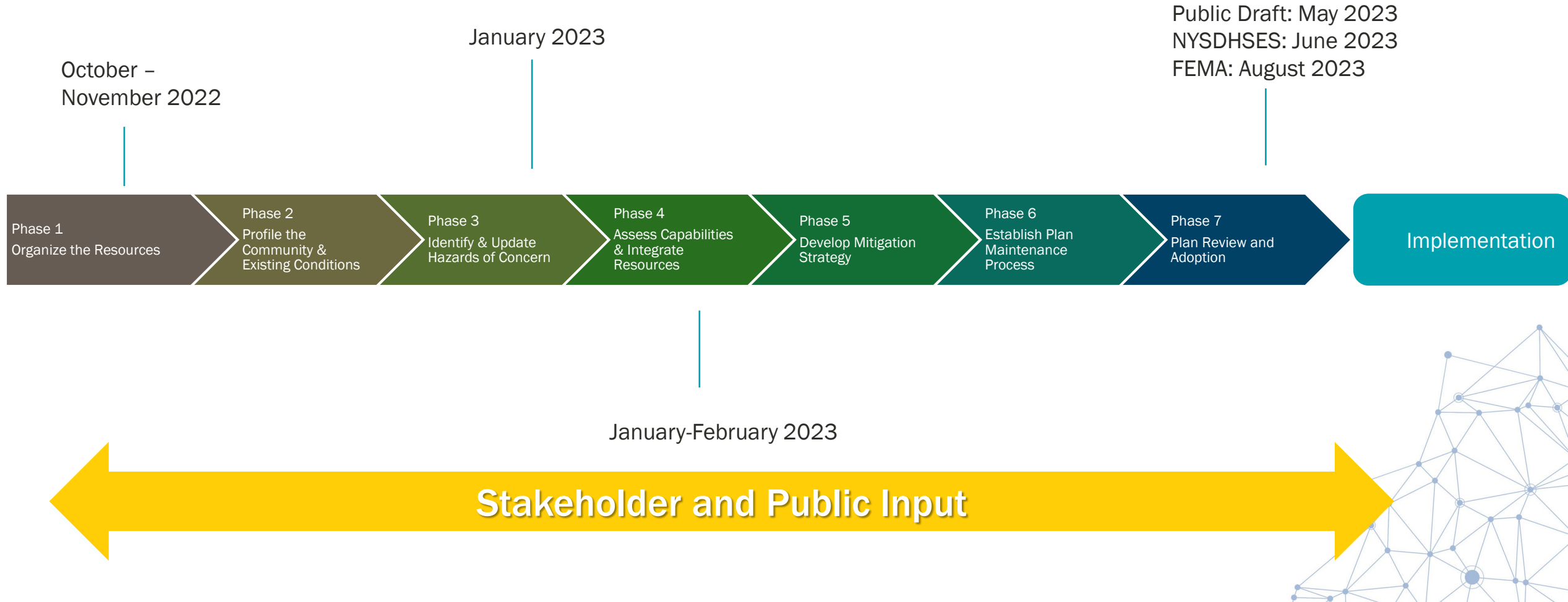
# What is our Vision?

*The **mission** of the Warren County Hazard Mitigation Plan is to create communities whose daily activities reflect a comprehensive **commitment** by government, business, non-profit organizations and the public to eliminate or **reduce risks** and adverse impacts from natural, technological and human-caused hazards.*

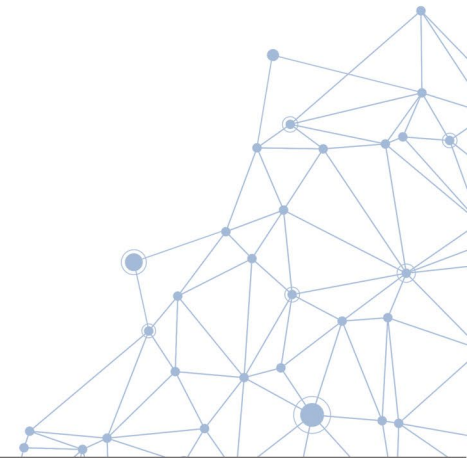




# Planning Process Overview



# Project Organization





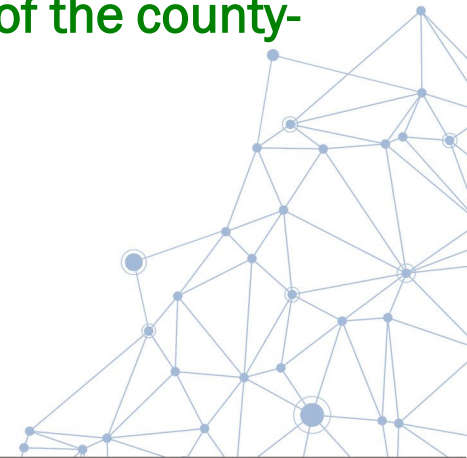
# Who is Leading the Planning Process?

## Steering Committee Members

Warren County Soil and Water Conservation District	Adirondack / Glens Falls Transportation Council
Warren County Office of Emergency Services	City of Glens Falls
Warren County Department of Planning and Community Development	Village of Lake George
Warren County Public Works	SUNY Adirondack
Town of Queensbury Planning Department	Glens Falls Hospital
	Finch Pryne
	Board of Supervisors

## Role

- ✓ Guide the Planning Partnership through the planning process
- ✓ Identify the natural hazards of concern
- ✓ Develop mitigation goals and objectives
- ✓ Develop public and stakeholder outreach strategy
- ✓ Support the development of the county-level mitigation strategy
- ✓ Review plan documents





# How are we Engaging the Public?

- HMP website underdevelopment – <https://www.warrencountynewyorkhmp.com>
- Social Media Blasts – content and graphics will be sent out
- Surveys – public, stakeholder, and neighbors
- Local announcements of HMP update – local papers, municipal newsletters, etc.
- Local public meetings
- Draft plan review
- Document each and every time this is done!

## Why conduct outreach?

- ✓ Informs and educates about hazards and risks
- ✓ Invites interested parties to contribute their views and ideas for mitigation
- ✓ Identifies conflicts and incorporates different perspectives and priorities early in the process
- ✓ Provides data and information that improves overall quality and accuracy of the plan
- ✓ Ensures transparency and builds trust
- ✓ Maximizes opportunities for implementation through greater consensus and acceptance

# How to Document your Public and Stakeholder Outreach and In-Kind Hours?



- Track hours spent working on the HMP (outside of meetings with Tetra Tech)
- Track type of outreach you provide to inform residents and stakeholders about the Hazard Mitigation Plan.
- A survey will be emailed to you your input.

Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Press Release	Countywide						Press release issued to several local newspapers

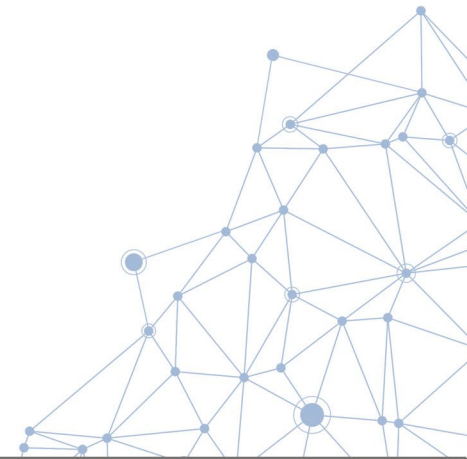


# What are the Benefits for Municipal Participation?

- All municipalities are encouraged to actively participate (and continue to be covered by the countywide HMP).

**Participating = you remain eligible for pre- and post-disaster mitigation funding!**

- FEMA has greatly expanded their scrutiny of ‘participation’ since your last plan update...

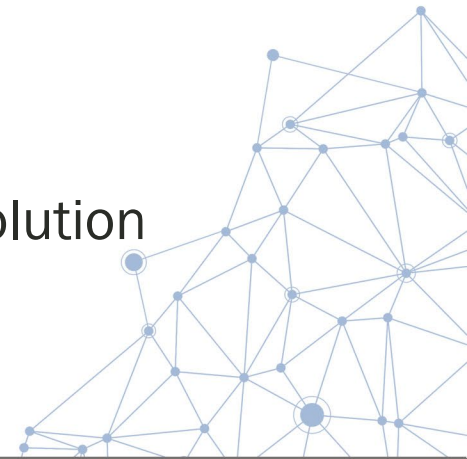






# How Do You Participate?

- Submit Letter of Intent to Participate (LOIP)
  - LOIPs are required from each municipality
  - It outlines expectations and responsibilities for participating jurisdictions and identifies points of contact
- Assist with the development of your jurisdictional annex
- Attend planning partnership meetings/workshops – like this one!
- Provide data and information in a timely manner
- Support public and stakeholder outreach in your jurisdiction
- Review and provide feedback on Draft and Final Plan documents
- Facilitate the adoption process – governing body must pass an Adoption Resolution
- Implement and Maintain the Plan



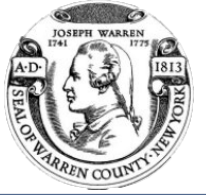


# Who Should be on Your Team?

If you not fully decided who should be on your municipal mitigation team, the following could provide you a better idea on who to invite:

- NFIP Floodplain Administrator
- Building Code Official
- Engineer
- Land Use Planner
- Clerk
- Mayor/Administrator/Supervisor
- Municipal CFO/Fiscal Representative
- Public Works Superintendent/Director
- Police/Fire Official





# List of Worksheets

- Worksheet A - Hazard Event History
- Worksheet B – Capability Assessment
- Worksheet C – National Flood Insurance Program (NFIP) Questionnaire
- Worksheet D – 2017 Mitigation Project Status (Action Plan) Review
- Worksheet E – Development, Building Permits (last 5 years)

	Jurisdiction has <u>this</u> ? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>				
<b>Building Code</b>			State and Local	
How has or will this be integrated with the HMP and how does this reduce risk?				
<b>Zoning/Land Use Code</b>			Local	
How has or will this be integrated with the HMP and how does this reduce risk?				
Consider the following:				
<ul style="list-style-type: none"><li>• Prior to zoning changes, or development permitting, does your jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use?</li><li>• Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains?</li><li>• Does it contain natural overlay zones that set conditions?</li><li>• Does the ordinance require developers to take additional actions to mitigate natural hazard risk?</li><li>• Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?</li></ul>				
<b>Subdivision Ordinance</b>			Local	
How has or will this be integrated with the HMP and how does this reduce risk?				
Consider the following:				
<ul style="list-style-type: none"><li>• Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?</li><li>• Do the regulations provide for conservation subdivisions or cluster subdivisions <u>in order to</u> conserve environmental resources?</li><li>• Do the regulations allow density transfers where hazard areas exist?</li></ul>				
<b>Site Plan Ordinance</b>			Local and County	
How has or will this be integrated with the HMP and how does this reduce risk?				
<b>Stormwater Management Ordinance</b>			Local	
How has or will this be integrated with the HMP and how does this reduce risk?				



# Update Annexes with Your Mitigation Team

- Attend the Worksheet Workshop to review each worksheet:
  - November 16 at 10 am
- Complete worksheets
  - Each worksheet has a suggested department lead
  - Critical asset review by December 9th
  - All worksheets due November 23rd





# Who Should Conduct Your Capability Assessment?

- Planning and Regulatory Capability
- Building Code
- Administrative and Technical Capability
- Fiscal Capability
- Education and Outreach
- Community Classifications
- Adaptive Capacity

This will be reflected in your municipal annex



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet B – Capability Assessment



Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to Cynthia Bianco (Tetra Tech) by November 23, 2022  
Email: [cynthia.bianco@tetratech.com](mailto:cynthia.bianco@tetratech.com)

Municipality: \_\_\_\_\_

Name and Title of  
Individual Completing  
Worksheet: \_\_\_\_\_

Who can assist with completing these tables: Municipal Planner, Clerk, Code Official, Administrator, Chief Fiscal Officer

## Planning and Regulatory Capability

Please complete the following table to summarize the regulatory tools that are available to your community, what is present in the jurisdiction, and code citation and date. For existing regulatory tools, note how it reduces risk to hazards or how it could be updated to better integrate hazard mitigation concepts to reduce risk.

Table 9.1-2. Planning, Legal, and Regulatory Capability and Integration

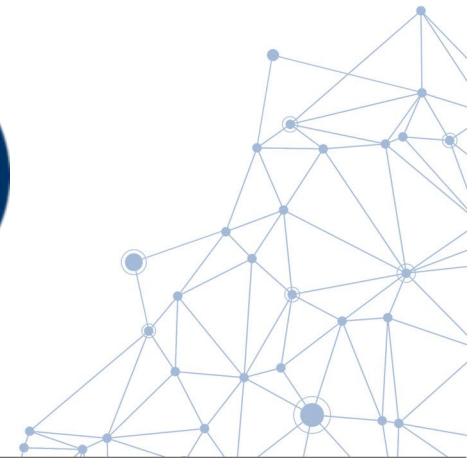
Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>			
<b>Building Code</b>		State and Local	
How has or will this be integrated with the HMP and how does this reduce risk?			
<b>Zoning/Land Use Code</b>		Local	
How has or will this be integrated with the HMP and how does this reduce risk?			
Consider the following:			
<ul style="list-style-type: none"> <li>Prior to zoning changes, or development permitting, does your jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use?</li> <li>Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains?</li> <li>Does it contain natural overlay zones that set conditions?</li> <li>Does the ordinance require developers to take additional actions to mitigate natural hazard risk?</li> <li>Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?</li> </ul>			
<b>Subdivision Ordinance</b>		Local	
How has or will this be integrated with the HMP and how does this reduce risk?			
Consider the following:			
<ul style="list-style-type: none"> <li>Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?</li> <li>Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?</li> <li>Do the regulations allow density transfers where hazard areas exist?</li> </ul>			
<b>Site Plan Ordinance</b>		Local and County	
How has or will this be integrated with the HMP and how does this reduce risk?			

# How to Update Municipal Community Lifelines?



- Review 2017 critical facility inventory to ensure complete using the Survey provided by email.
- Identify your lifelines

***Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security*



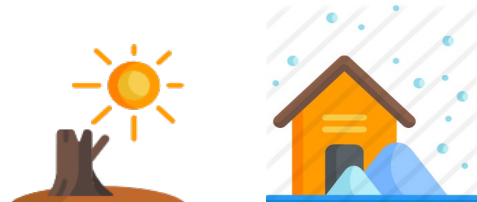




# 2017 Hazards of Concern

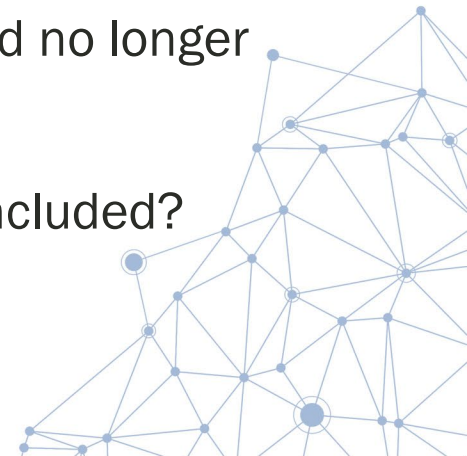
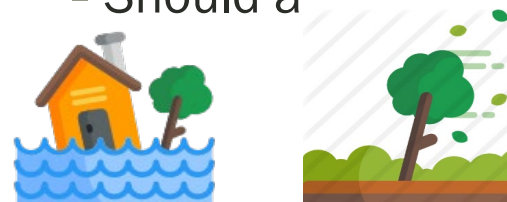
## Natural Hazard of Concern:

- Disease Outbreak
- Earthquake
- Flood (riverine, ice jam, flash)
- Infestation
- Landslide
- Severe Storm (windstorm, thunderstorms, hail, tornados)
- Severe Winter Storm (heavy snow, blizzards, ice storms)
- Wildfire



## Non-Natural Hazards of Concern:

- Cyber Security
- Haz-Mat
- In review...
  - Have additional hazards impacted the County since 2017?
  - Have hazard been mitigated and no longer cause damage?
  - Should hazards be regrouped?
  - Should additional hazards be included?



# Update Risk Assessment


- Update Assets
- Examine Previous Impacts
- Analyze Risks
- Review with Steering Committee
- Risk Assessment Meeting - open to the public





# Review Your Previous Mitigation Strategy

- Determine status of 2017 Mitigation Actions
- The updated mitigation strategy will build on this as well as additional identified issues
- What progress has been made on the 2017 HMP actions?
  - Completed?
    - If yes, describe funding source, funding amount, and details on the project and how it was completed.
  - No progress?
    - Describe why.
    - Is this project still a priority? If yes, we will include in the 2023 Update.
    - If no, we will remove.

 **WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Worksheet D - Mitigation Action Review**  
**MUNICIPALITY**

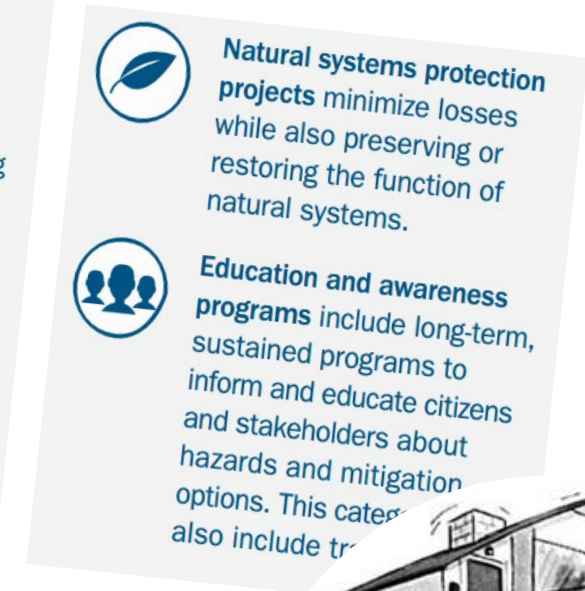
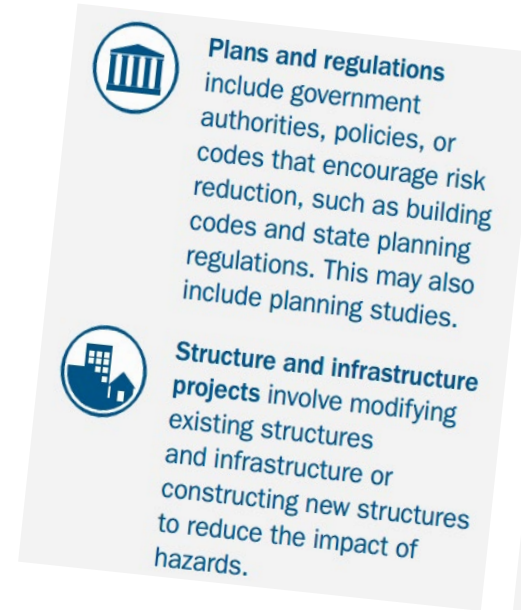
Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (If project status is complete)	1. Next Steps Project to be Included in 2023 HMP or Discontinue
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.
					Choose an item.	Cost Level of Protection Damages Avoided; Evidence of Success	1. Choose an item. 2. 3.

This will be included in your municipal annex



# New Mitigation Actions for the 2023 Update

- Opportunity to add new mitigation actions
- This includes all in-progress grant applications (HMGP generators, CDBG acquisitions, etc.)
- Tips for the 2023 update:
  - Quality NOT quantity
  - Specific not general
  - What can realistically be accomplished in 5 years?
  - Action for every hazard of concern

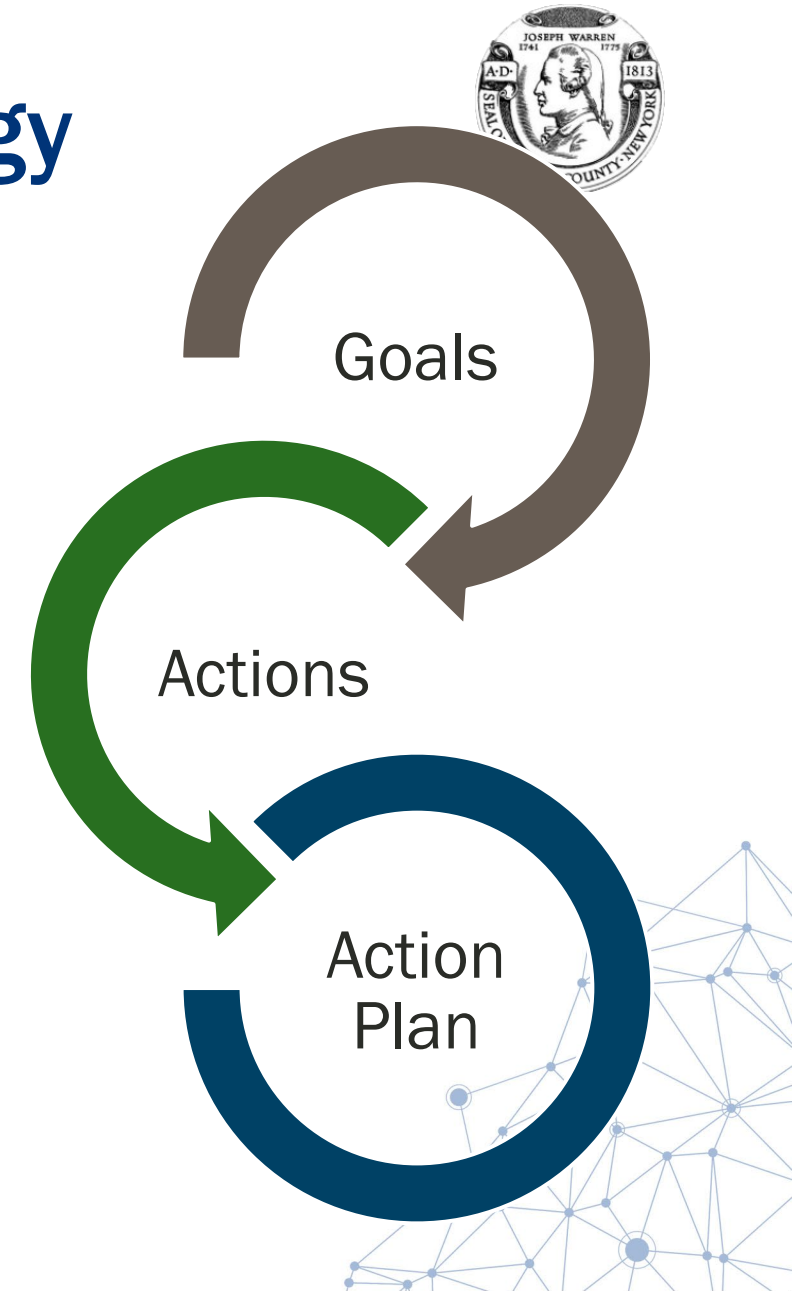


*"At the first sign of a flood, you just push this little button."*



# Connection to the Mitigation Strategy

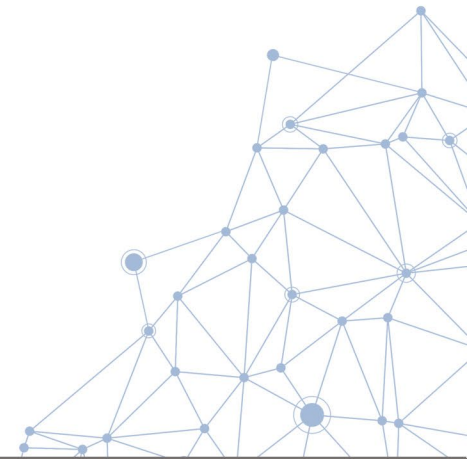
- Need a clear connection between vulnerability and proposed mitigation actions.
- Use the capability assessment to provide insight into challenges/opportunities for the mitigation strategy as well.
- Provide a factual basis for activities proposed in the mitigation strategy.





# What We Need From You

- Attend the upcoming worksheet workshop
  - Worksheet Workshop – November 16 at 10 am
- Review and submit your critical facilities by December 9th
- Complete and return your worksheets
- Start thinking about what new mitigation actions you would like to add to your mitigation strategy.



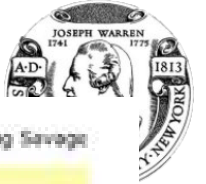


# Schedule

- Planning Process
  - Planning Partnership Kick-Off – TODAY!
  - Confirm critical facility/lifeline inventory by December 9th
  - Worksheets due November 23rd
  - Worksheet Workshop – November 16 at 10 am
  - Update Risk Assessment
  - Begin vulnerability assessment
  - Risk Assessment Meeting – February 2023
- Public Involvement Strategy – ongoing throughout the planning process

*Savage Chickens*


by Doug Savage



www.savagechickens.com



# Next Steps

- Determine Hazards of Concern to include in the HMP
- Review Hazard Profiles
- Review Risk Assessment Results
- Identify Problems and Problem Areas
- Develop Mitigation Strategy
- Review Draft Plan
- Submit Draft Plan for DHSES/FEMA Review
- Adopt FEMA-Approved Plan
- Implement Projects and Maintain the Plan  Increase Resilience!



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC, District Manager  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason, Emergency Services Director  
[masona@warrencountyny.gov](mailto:masona@warrencountyny.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Homework Workshop – AGENDA**  
**MEETING DATE/TIME: November 16, 2022 – 10:00 am**



*In-Person/Hybrid Meeting:*

Human Services Building  
3rd floor conference room  
1340 State Route 9, Warren, Lake George, NY

*Virtual: Microsoft Teams Meeting:*  
*Join on your computer or mobile app*

[Click here to join the meeting](#)

Meeting ID: 211 930 051 572

Passcode: 89z58L

Agenda Items

1. Welcome and Introductions
2. Benefits of Hazard Mitigation
3. Hazard Mitigation Planning Overview
4. Project Organization
5. Public and Stakeholder Outreach
6. In-Kind Services Tracking
7. Planning Partnership Responsibilities
8. Community Lifelines/Critical Facilities
9. Update Hazards of Concern and Risk Assessment
10. Goals and Objectives
11. Schedule
12. Questions/Next Steps/Wrap Up



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Purpose of Meeting:	Planning Partnership Meeting
Location of Meeting:	Hybrid In-person and Teleconference Teams Meeting
Date of Meeting:	November 16, 2022, 10:00 am – 11:00 am

Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ann Marie Mason	Warren County, Director Emergency Services
Ethan Gaddy	Warren County Planner/Climate Smart
Josh Westfall	Town of Bolton, Planner
Jennifer Ramsey	Warren County Office of Emergency Services
Jessica Leerkes	Town of Chester
Bill Norton	City of Glens Falls, Superintendent Water and Sewer
Michael N. Geraci	Town of Horicon, Supervisor
Danae Tucker	Town of Johnsbury, Bookkeeper
John Strough	Town of Queensbury
John O'Brien	Town of Queensbury, Director of Building and Code Enforcement
Dave Duell	Town of Queensbury, Highway Superintendent
Deb Runyon	Town of Thurman, Supervisor
Dan Barusch	Town/Village Lake George, Planner
Keith Lanfear	Town/Village Lake George, Superintendent Public Works
Eugene J. Merlino	Town of Lake Luzerne, Town Supervisor
Karen Putney	Town of Lake Luzerne, Zoning Enforcement Officer
Frank E. Thomas	Town of Stoney Creek, Supervisor
Elizabeth O'Reilly	NYSDHSES, Planning Manager
Paul Hoole	FEMA, Mitigation Planning
Cynthia Addonizio-Bianco	Tetra Tech, Inc. (Tt)





# Warren County Hazard Mitigation Plan Update Meeting Notes



**Agenda Summary:** The purpose of the meeting was to provide an overview of information needed to update the local information for the Warren County Hazard Mitigation Plan (HMP) update.

Item No.	Description	Action item(s):
1	<p><b>Overview/Agenda:</b></p> <p>Tetra Tech welcomed the attendees and provided an overview of the agenda which included the following topics:</p> <p>Benefits of hazard mitigation, Planning Partnership responsibilities, Worksheet review and data input, community lifelines and critical facilities, and next steps. Refer to the attached copy of the presentation for details.</p>	
2	<p>Discussion items:</p> <ul style="list-style-type: none"> <li>Worksheet information will be included in the community section or annex of the mitigation plan.</li> <li>Worksheet A: Hazard Event History - it is important to document local natural hazard events that have resulted in damages <i>not limited to named or declared events</i>. For example, if a community has experience localized flooding, note the date, location, and any damages or road closures. This information will help inform the development of projects to reduce future risk and damages.</li> <li>Worksheet B: Capability Assessment – Basic information such as whether or not the planning mechanism, code, or ordinance is in place. Additional information includes the adoption date of the item and a description of how it reduces risk or integrates hazard mitigation into the community activities.</li> <li>Worksheet C: NFIP Questionnaire – This should be completed by the community National Flood Insurance Program Administrator.</li> <li>Worksheet D: Action Review - This has been populated with the mitigation actions from the current plan. Information on the progress of the project is required (is it complete, in progress, no longer relevant?). Also indicate whether the project should be included in the plan update.</li> <li>Worksheet E: Building Permits - A listing of permits for new development since 2017 is required. This will provide an understanding of where development is occurring and if it is occurring in hazard areas. A description of the county permitting activities on behalf of local government will be included in the plan. A potential mitigation action may be to ensure that permits in floodplains are tracked going forward.</li> <li>Mr. Gaddy noted that it may be worthwhile to understand if the NYDEC Unit Management Process addresses elements of mitigation in state owned property management.</li> </ul>	<ul style="list-style-type: none"> <li>Tt to check HMP integration with NYDEC for Unit Management Process</li> </ul>
3	<p><b>Submittal date:</b></p> <p>All municipalities were requested to submit the completed worksheets to <a href="mailto:Cynthia.bianco@tetrattech.com">Cynthia.bianco@tetrattech.com</a> on or before November 23<sup>rd</sup>.</p>	<p>Municipalities to submit worksheets to Tt on or before 11/23/22.</p>



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



4	Questions/Support: Questions should be directed to Cynthia Bianco of Tetra Tech at <a href="mailto:Cynthia.bianco@tetrattech.com">Cynthia.bianco@tetrattech.com</a> or Jim Lieberum of Warren County Soil & Water Conservation district at <a href="mailto:jiml@warrenswcd.org">jiml@warrenswcd.org</a> .	<ul style="list-style-type: none"><li>• Tt to post recording on OneDrive and share the link.</li><li>• Tt to send Presentation to invitees</li></ul>
7	<b>Conclusion</b> - The meeting concluded at 10:55 am.	



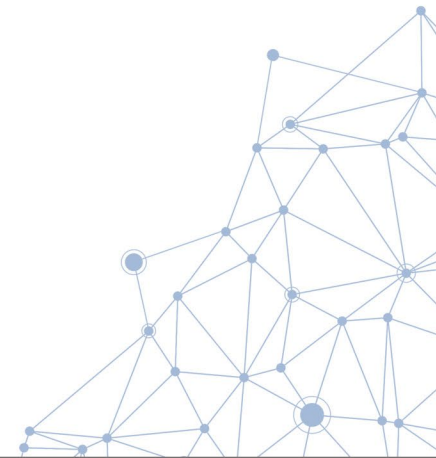
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Homework Workshop | November 16, 2022 10:00am

# Agenda



- 1 Welcome
- 2 Benefits of Hazard Mitigation
- 3 Hazard Mitigation Planning Overview
- 4 Planning Partnership Responsibilities
- 5 Worksheet Review/Data Input
- 6 Community Lifelines/Critical Facilities
- 7 Questions/Next Steps/Wrap Up





# This is the Benefit of Participating in the Plan

By participating AND adopting the hazard mitigation plan:

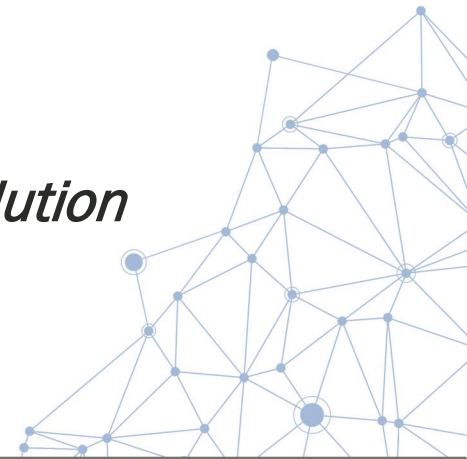
- 1.** Your community remains eligible for pre-disaster mitigation funding!
- 2.** Your plan will help reduce future damages in your community





# How Do You Participate?

- Submit Letter of Intent to Participate
  - If you haven't returned it yet, please do so ASAP!
- ***Provide information about your town or village.***  
(This will be included in your chapter of the plan.)
- Attend planning partnership meetings/workshops
- Provide data and information in a timely manner
- Support public and stakeholder outreach in your jurisdiction
- Review and provide feedback on Draft and Final Plan documents
- Facilitate the adoption process – ***governing body must pass an Adoption Resolution***
- Implement and maintain the Plan



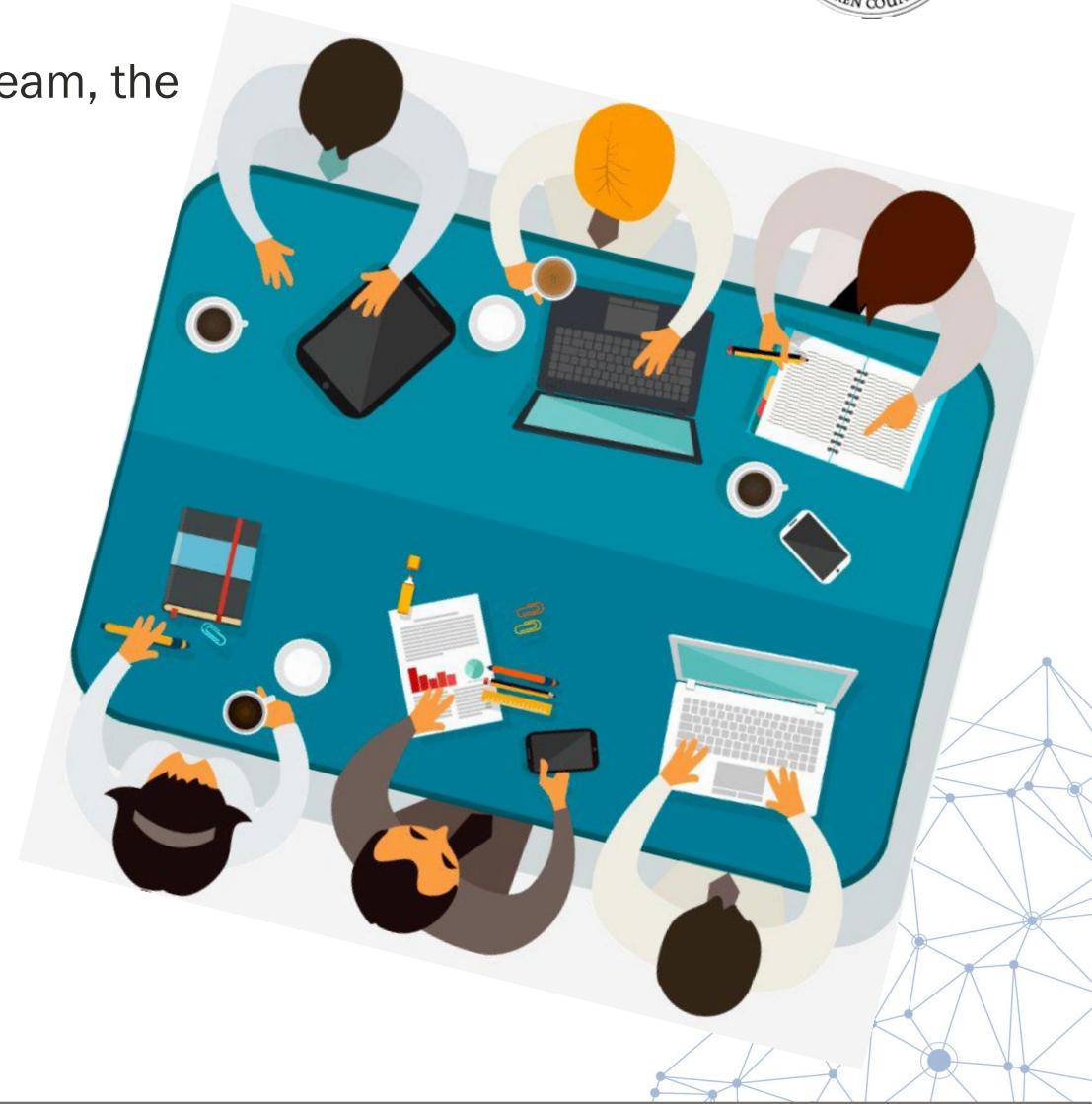




# Assemble Your Mitigation Team!

If you have not fully decided who should be on your municipal team, the following can provide you a better idea on who to invite:

- NFIP Floodplain Administrator
- Building Code Official
- Engineer
- Land Use Planner
- Clerk
- Mayor/Administrator
- Municipal CFO/Fiscal Representative
- Public Works Superintendent/Director
- Police/Fire Official



# What We Your Input!

- Tetra Tech has provided you with worksheets
- Information from the last plan has been pre-populated in your worksheets, as available.
- Your Mitigation Team is responsible for
  - providing updated information
  - reviewing the information from the 2017 plan.
- *This information will be included in your town or village annex*



SECTION 9.2. Town of Bolton

## SECTION 9.

### 9.2 TOWN OF BOLTON

This section presents the jurisdictional annex for the Town of Bolton that provides resources and information to assist public and private sectors to reduce losses from future hazard events. This annex is not guidance of what to do when a disaster occurs. Rather, this annex concentrates on actions to reduce or eliminate damage to property and people that can be implemented prior to a disaster. Information presented includes a general overview of the municipality, who in the TOWN participated in the planning process, an assessment of the Town of Bolton's risk and vulnerability, the different capabilities used in the TOWN, and an action plan that will be implemented to achieve a more resilient community.

#### 9.2.1 Hazard Mitigation Planning Team

The Town of Bolton identified the hazard mitigation plan (HMP) primary and alternate points of contact and developed this plan over the course of several months with input from many TOWN departments, including XXXX. The XXXX represented the community on the Warren County Hazard Mitigation Plan Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

The following table summarizes municipal officials that participated in the development of the annex and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Volume I, Section 3 (Planning Process) and Appendix C (Meeting Documentation).

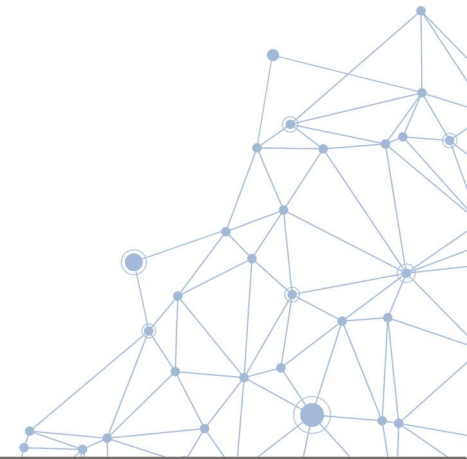
Table 9.1-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Joshua Westfall, AICP Address: 4949 Lake Shore Drive, Bolton Landing, NY 12814 Phone Number: 518-644-2893 Email: Westfall.J@Town.Bolton.NY.US	Name/Title: Richard Miller, PE Address: 4949 Lake Shore Drive, Bolton Landing, NY 12814 Phone Number: 518-644-2893 Email: Miller.R@Town.Bolton.NY.US
<b>NFIP Floodplain Administrator</b>	
Name/Title: Richard Miller, PE Address: 4949 Lake Shore Drive, Bolton Landing, NY 12814 Phone Number: 518-644-2893 Email: Miller.R@Town.Bolton.NY.US	
<b>Additional Contributors</b>	
Name/Title: Method of Participation: Name/Title:	

# Hazard Event History Specific to Your Town or Village



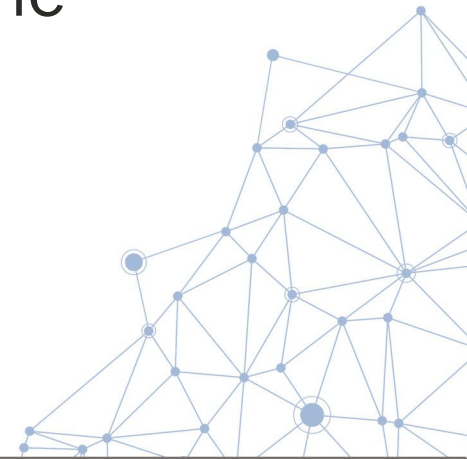
- Describe impactful hazard events that have occurred since 2017
  - When did the event occur?
  - What type of event was it?
  - What are the details of how the event unfolded?
  - How was the community impacted?
    - Damages
    - Closures
    - Injuries/deaths





# HAZARD EVENT HISTORY

- ✓ Fill out contact information.
- ✓ Provide a summary of damages/impacts to the listed events AND note other local hazard events that resulted in damages, closures, or other impacts.
- ✓ Identify other hazard events that have caused damage/losses in your community. Refer to FEMA project worksheets (PWs), overtime records, police/fire reports, repair costs (invoices), etc



# WORKSHEET A – HAZARD EVENT HISTORY



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet A – Hazard Event History

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to Cynthia Bianco (Tetra Tech) by November 23<sup>rd</sup>, 2022.  
Email: cynthia.bianco@tetratech.com

Municipality: Town of Bolton

Name and Title of  
Individual  
Completing  
Worksheet:

Warren County has frequently experienced natural hazard events. Please complete the table below to summarize specific loss and damages experienced during hazard events since the last hazard mitigation plan update (January 1, 2017). Information already populated in the table below is based on County-wide events that resulted in significant damages and losses.

Please update the table to provide a summary of local impacts to the listed events AND note other local hazard events that resulted in damages, closures, or other impacts.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
April 27-28, 2011	Severe Storms, Flooding, Tornadoes and Straight-Line Winds (DR-1993)	Yes	Flooding occurred along the Hudson River in Warren County from North River southward to the Saratoga County line. Numerous reports of flooding. The County had approximately \$676,000 in damages. Nearly two-thirds of the County was damaged. In the Town of Bolton, River Rd. and <del>Highway</del> Roads were closed from flooding. The Town brought in six loads of #4 fill to fix both roads. In addition, there was one washout on <del>Highway</del> Rd., which the Town used two loads of #4 fill to fix.	
May 27 – June 2, 2011	Flooding "Memorial Day Storm"	N/A	Flooding occurred in the County and there was severe damage along a thin line through the County (Stony Creek, Thurman, Warrensburg, <del>Highway</del> and Bolton) that resulted in \$13.125 million in damages. Extensive flood damage to transportation infrastructure occurred throughout the Town of Bolton, including Combs Road Bridge which was washed out. A 30' deep x 50' wide segment of Hendricks Road washed out. Snye Farm Road was completely washed out, along with sections of Trout Falls and <del>Highway</del> Roads. A 4" x 60' culvert on River Rd. was also washed out.	
August 27-29, 2011	Hurricane Irene (DR-4020)	Yes	There was severe wind and flooding damage throughout the County. Very little damage occurred in the Town of Bolton. A few trees came down. The Town Highway Crew worked 15 overtime hours. Highway and Parks Departments kept all the culverts cleaned out.	



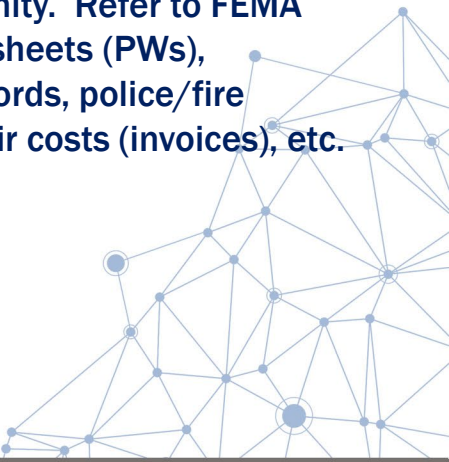
Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet A – Hazard Event History

May 29, 2012	Hail and Wind	N/A	Debris removal occurred in the County as a result of this event. A generator at a fire station, a patrol car, and the canopy of a patrol boat were all damaged. Very little damage occurred in the Town of Bolton. Clean up was needed for a few downed trees. Highway crews swept debris from roadways.	
October 29, 2012	Hurricane Sandy (EM-9351)	Yes	Heavy rain fell throughout the County. In the Town of Bolton, trees came down in Cotton Point. Highway crews swept debris from roadways.	
October 31 – November 1, 2019	Severe Storms, Straight-line winds, Flooding (DR-4472) "Halloween Storm"	Yes	A strengthening <del>low-pressure</del> system moving from Ohio to Lake Ontario drew anomalous warmth and moisture northward on Halloween, with temperatures surging into the 60s and 70s over eastern New York and western New England. Showers across the southern Adirondacks and Mohawk Valley became steadier and heavier during the evening ahead of a strong cold front as the low continued to strengthen. Strong winds aloft mixed down to the surface as an intense line of showers developed along the front resulting in sporadic wind damage and scattered power outages over eastern New York.	A large swath of rainfall totaling 2-5 inches, with isolated areas as high as 7 inches, occurred over the Mohawk Valley and southern Adirondacks, resulting in reports of flash flooding. The runoff caused rapid rises on area creeks and streams, with river gauges reaching record levels along the Mohawk River at Little Falls, the West Canada Creek at Hinkley and Kaat Bridge, and the Sacandaga River at Hope.
January 20, 2020	Covid-19 (EM-3434)	Yes	As of November 2022, Warren County has experienced over 20,000 positive cases of Covid-19	

Please identify other hazard events that have caused damage/losses in your community. Refer to FEMA project worksheets (PWs), overtime records, police/fire reports, repair costs (invoices), etc.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses

- ✓ Fill out contact information.
- ✓ Provide a summary of local impacts to the listed events AND note other local hazard events that resulted in damages, closures, or other impacts.
- ✓ Identify other hazard events that have caused damage/losses in your community. Refer to FEMA project worksheets (PWs), overtime records, police/fire reports, repair costs (invoices), etc.

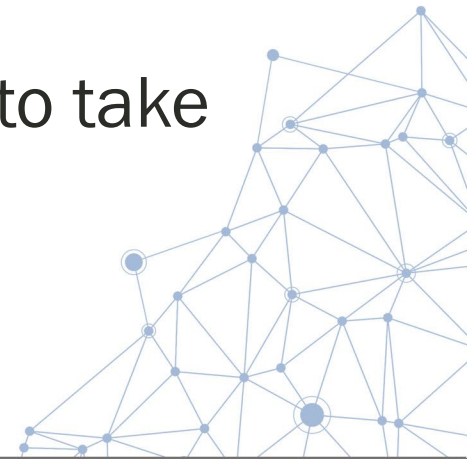






# Recent and Expected Future Development

- List the number of building permits for **NEW construction** issued since 2017
  - Do not include redevelopments or improvements
- List and describe recent **MAJOR DEVELOPMENT** (housing developments, hotels, commercial or industrial development, etc.) that has taken place since 2017
- List and describe **ANTICIPATED MAJOR DEVELOPMENT** likely to take place in the next 5 years.





# WORKSHEET E – RECENT DEVELOPMENT (BUILDING PERMITS)



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet E – Building Permits

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by November 23<sup>rd</sup>, 2022 to:  
Cynthia Bianco, Tetra Tech | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

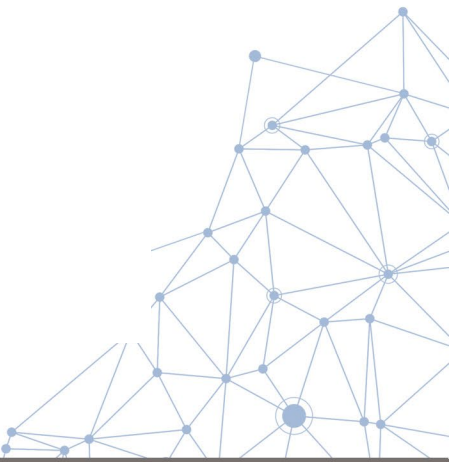
Municipality: Town of Bolton

Name and Title of Individual Completing Worksheet: \_\_\_\_\_

Who can assist with completing these tables: The Building Department, Planning Department, and NFIP Floodplain Administrator

Type of Development	2017		2018		2019		2020		2021		2022	
Number of Building Permits for New Construction Issued Since the Previous HMP* (within regulatory floodplain/ Outside regulatory floodplain)												
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single Family												
Multi-Family												
Other (commercial, mixed-use, etc.)												
Total New Construction Permits Issued												

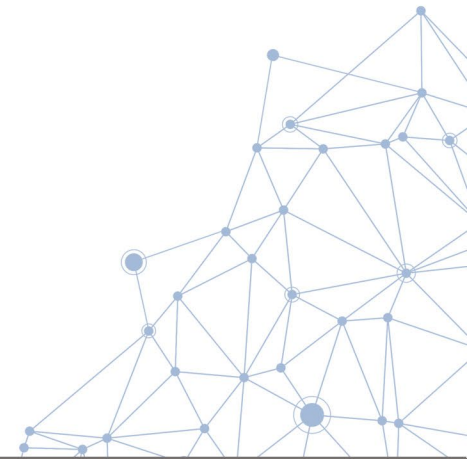
SFHA Special Flood Hazard Area (1% annual chance flood event)  
\* Only location-specific hazard zones or vulnerabilities identified.





# National Flood Insurance Program

- This section should worksheet to be filled Floodplain Administrator for your community.
- Answer the questions regarding NFIP participation and implementation of floodplain administration.
- Provide details where necessary



# WORKSHEET C – FLOODPLAIN ADMINISTRATION QUESTIONNAIRE



Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to  
Cynthia Bianco by November 23<sup>rd</sup>, 2022  
Email: [cynthia.bianco@tetratech.com](mailto:cynthia.bianco@tetratech.com)



Municipality: Town of Bolton

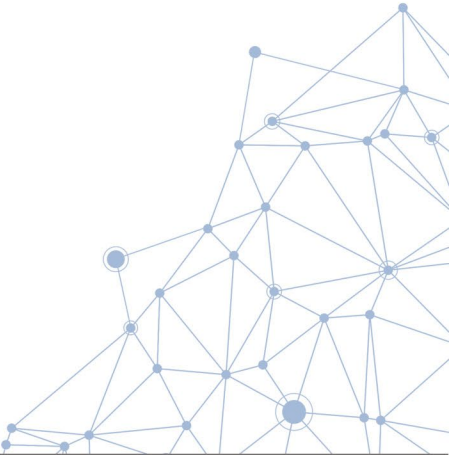
NFIP Floodplain Administrator Name/Title: \_\_\_\_\_



Who can assist with completing this table: NFIP Floodplain Administrator – as identified by role/title in your Flood Damage Prevention Ordinance.



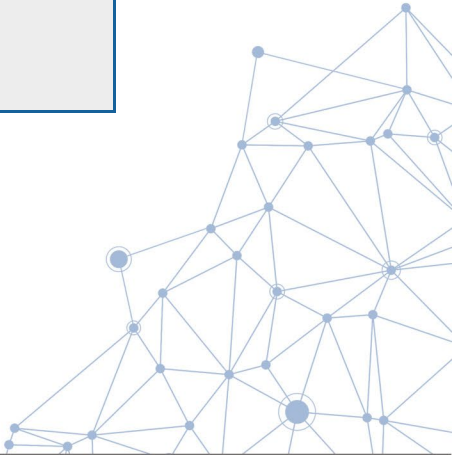
NFIP Topic	Comments
<b>Flood Vulnerability Summary</b>	
Describe areas prone to flooding in your jurisdiction. <ul style="list-style-type: none"><li>Do you maintain a list of properties that have been damaged by flooding?</li></ul>	No
Do you maintain a list of property owners interested in flood mitigation? <ul style="list-style-type: none"><li>How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?</li></ul>	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"><li>If so, state what projects are underway.</li></ul>	-
How do you make Substantial Damage determinations? <ul style="list-style-type: none"><li>How many were declared for recent flood events in your jurisdiction?</li></ul>	No
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? <ul style="list-style-type: none"><li>If there are mitigation properties, how were the projects funded?</li></ul>	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"><li>If not, state why.</li></ul>	



# WORKSHEET C – FLOODPLAIN ADMINISTRATION QUESTIONNAIRE



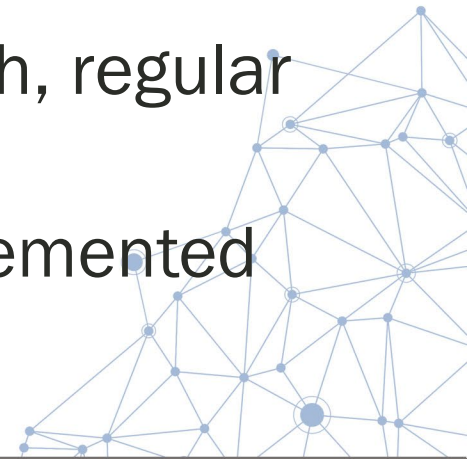
If not, state why.	
<b>NFIP Compliance</b>	
What local department is responsible for floodplain management?	
Are any certified floodplain managers on staff in your jurisdiction?	Yes – Floodplain Administrator
Do you have access to resources to determine possible future flooding conditions from climate change?	Unknown
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	





# Status of Previous HMP Mitigation Actions

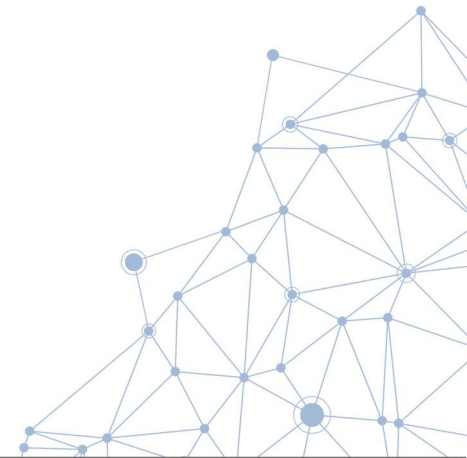
- Report on the status of previous mitigation actions from the 2017 plan.
  - **In Progress:** The action has been started but has not been completed to date.
  - **No Progress:** The action has not been started
  - **Ongoing Capability:** The action has been started and is now part of the municipality's regular or annual operations
    - Examples: Regular stormwater cleaning, annual outreach, regular trainings for staff
  - **Complete:** The action has been 100% completed and implemented





# Status of Previous HMP Mitigation Actions

- Indicate if this action should be included in the 2023
  - In progress actions should be carried over
  - If identified as an ongoing capability, we will include it in the integration section of the annex but not as a 2023 action
  - Completed actions will not be carried over as actions in the 2023 HMP update





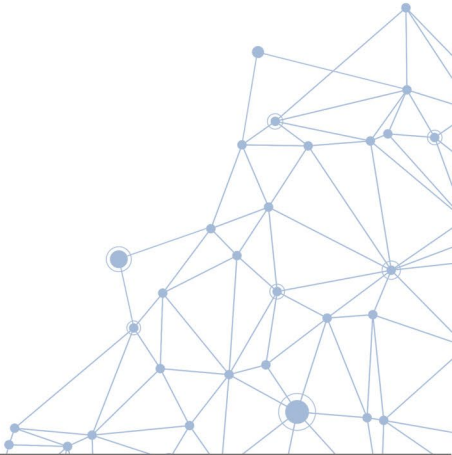
# WORKSHEET D – 2017 MITIGATION ACTION OR PROJECT REVIEW



## WARREN COUNTY HAZARD MITIGATION PLAN UPDATE Worksheet D - Mitigation Action Review Town of Bolton



Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)			Next Steps 1. Project to be included in 2023 HMP or Discontinue 2. If including action in the 2023 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	Damages Avoided; Evidence of Success	
1	Develop a Hamlet-wide Stormwater Drainage System plan for the Hamlet of Bolton	Flood		Planning, Town Board	Choose an item.				Choose an item.
2	Adopt and implement the Local Waterfront Revitalization Plan (draft released in <a href="#">July</a> , 2014).	All Hazards		Town Board	Choose an item.				Choose an item.
3	Edgecomb Pond Dam Auxiliary Spillway Development Project: Install an auxiliary spillway for the dam which provides water to hamlet (built-up) area. Drainage easements have been acquired in area where new spillway would be built.	Flood		Bolton Water District, Town Board	Choose an item.				Choose an item.
4	Edgecomb Pond Dam Upgrades: Make structural upgrades and improvements of the existing Edgecomb Pond Dam as called for by the upcoming structural evaluation. The Dam (owned by Bolton Water District) is in need of some improvements. The Town is in the process of contracting for a	Flood		Bolton Water District, Town Board	Choose an item.				Choose an item.





# Status of Previous Mitigation Actions

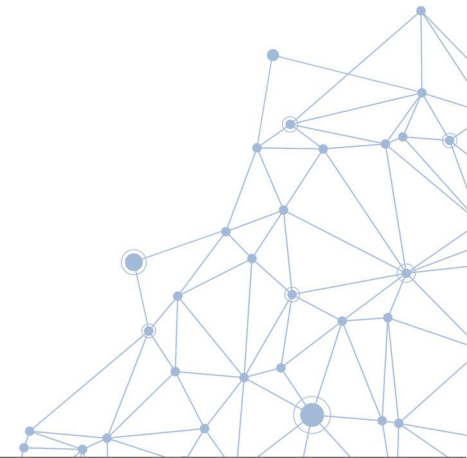
- List any mitigation actions or measures taken since the 2017 plan that were not part of the 2017 mitigation strategy
  - Did you install generators at critical facilities?
  - Upsize culverts or drainage pipes to reduce flooding?



## WARREN COUNTY HAZARD MITIGATION PLAN UPDATE Worksheet D - Mitigation Action Review Town of Bolton



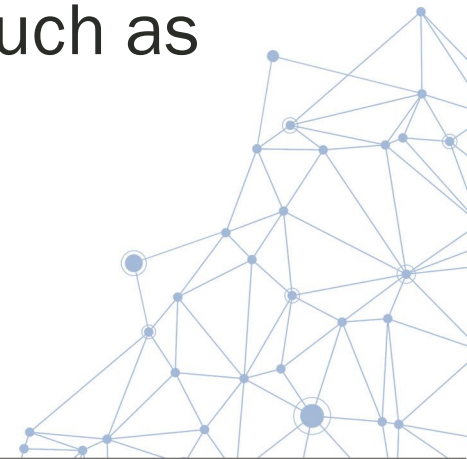
Have you completed, or are there any in-progress or proposed mitigation or resilience projects that are not included in the table above since 2017? If yes, please provide the project details, what the project is mitigating and who is implementing below.





# Identified Issues

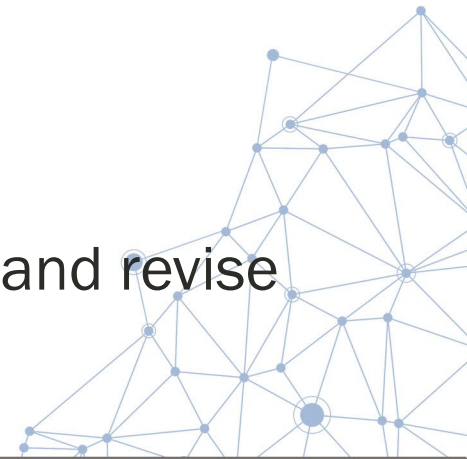
- Where are the problem areas in your community related to damages due to natural hazards?
  - What problems need solving?
  - What solutions need implementation?
  - What projects need funding?
- Tell us about floodprone locations outside of the floodplain such as stormwater/urban flooding areas
- Tell us about areas that experience damages.





# Planning, Legal, and Regulatory Capability

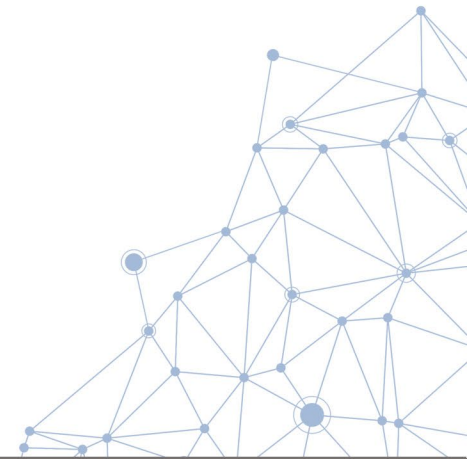
- This table reviews our codes, ordinances, & requirements; planning documents; and response/recovery planning
- Indicate if you have the plan/ordinance/requirement
- Indicate if it already integrates hazard mitigation
  - Tetra Tech has reviewed a majority of your plans, codes and ordinances and updated this section. Please review and revise accordingly.
- Describe the plan/ordinance/requirement
  - Who is in charge of implementation?
  - When was it adopted/updated?
  - How does it integrate hazard mitigation/emergency response?
    - Again, Tetra Tech addressed this during our review. Please review and revise accordingly.





# Hazard Mitigation Planning Team

- Update contact information if necessary
  - Primary Point of Contact
  - Alternate Point of Contact
  - NFIP Floodplain Administrator
- **Remember**, this is a public document so your contact information will also be public.



# WORKSHEET B – CAPABILITY ASSESSMENT



Hazard Mitigation Plan 2023 Update  
WARREN COUNTY, NY  
Worksheet B – Capability Assessment

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version to Cynthia Bianco (Tetra Tech) by November 23, 2022  
Email: [cynthia.bianco@tetratech.com](mailto:cynthia.bianco@tetratech.com)



Municipality: Town of Bolton  
Name and Title of  
Individual Completing  
Worksheet: \_\_\_\_\_

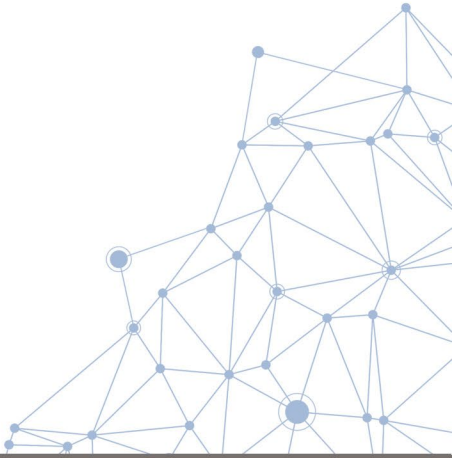
Who can assist with completing these tables: Municipal Planner, Clerk, Code Official, Administrator, Chief Fiscal Officer

## Planning and Regulatory Capability

Please complete the following table to summarize the regulatory tools that are available to your community, what is present in the jurisdiction, and code citation and date. For existing regulatory tools, note how it reduces risk to hazards or how it could be updated to better integrate hazard mitigation concepts to reduce risk.

Table 9.1-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>				
<b>Building Code</b>	Yes	NYS Property Maintenance Code	State and Local	Town Building Inspector
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> The Town of Bolton adopted the New York State Property Maintenance Code in December 2021.				
<b>Zoning/Land Use Code</b>	Yes	Chapter 200 – Zoning	Local	Zoning and Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i> Zoning Ordinance is in place to promote the health, safety, and general welfare of the community and to protect the property values and aesthetics of the community by channeling and directing growth and by regulating and restricting the height, number of stories and size of buildings and other structures, the percentage of lot that may be occupied, the size of yard, courts and other open spaces, the density of population and the location and use of buildings, structures and land for trade, industry, residence and other purposes, to the maximum extent permissible within the proper exercise of the police power as delegated by the Town Law.  Consider the following: <ul style="list-style-type: none"><li>• Prior to zoning changes, or development permitting, does your jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use?</li><li>• Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains?</li><li>• Does it contain natural overlay zones that set conditions?</li><li>• Does the ordinance require developers to take additional actions to mitigate natural hazard risk?</li><li>• Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?</li></ul>				
<b>Subdivision Ordinance</b>	Yes	Chapter 150 – Subdivision of Land	Local	Zoning and Planning
<i>How has or will this be integrated with the HMP and how does this reduce risk?</i>				





# Brainstorm New Mitigation Actions for the 2023 HMP Update

- Opportunity to add new mitigation actions
- This includes all in-progress grant applications (HMGP generators, CDBG acquisitions, etc.)
- Tips for the 2023 update:
  - One action for each hazard of concern
  - Quality NOT quantity
  - Specific not general
  - What can realistically be accomplished in 5 years?



Plans and regulations include government authorities, policies, or codes that encourage risk reduction, such as building codes and state planning regulations. This may also include planning studies.



Structure and infrastructure projects involve modifying existing structures and infrastructure or constructing new structures to reduce the impact of hazards.



Natural systems protection projects minimize losses while also preserving or restoring the function of natural systems.



Education and awareness programs include long-term, sustained programs to inform and educate citizens and stakeholders about hazards and mitigation options. This category could also include training.



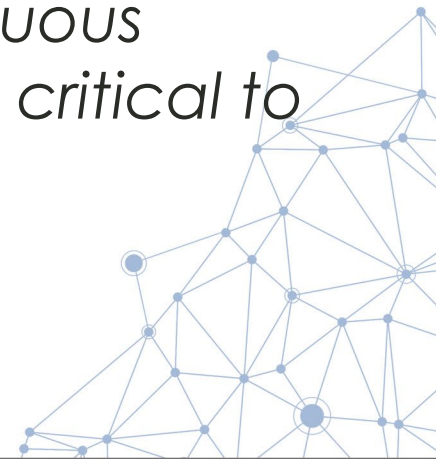
*"At the first sign of a flood, you just push this little button."*





# Critical Facilities and Lifelines

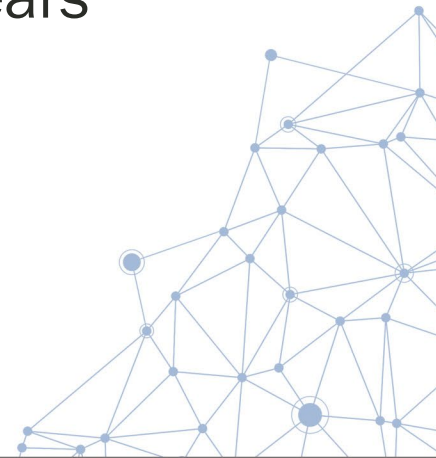
- ✓ **Critical Facilities** are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard
  - ✓ Include essential facilities to ensure a full recovery following the occurrence of a hazard event, transportation systems, lifeline utility systems, high-potential loss facilities, and hazardous material facilities.
- ✓ **Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security





# Critical Facilities and Lifelines

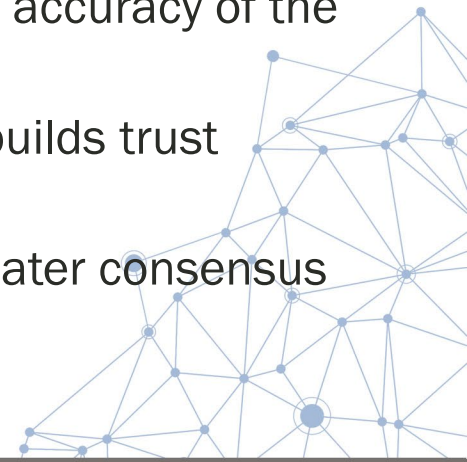
- Tetra Tech will send out the Critical Facilities list to your community for your review – we push back the deadline as necessary (originally October 14<sup>th</sup>)
- Ensure the list is complete
  - Add new critical facilities that have been built/established in the last 5 years
  - Omit critical facilities that have been decommissioned in the last 5 years





# We Need YOU Engaged and Involved!


- *Update your Municipal webpage and link to County's HMP webpage at <https://www.warrencountynewyorkhmp.com>*
  - Social Media Blasts – Tetra Tech will provide you with content and graphics
  - Local Announcements of HMP Update – local papers, newsletters, etc.
  - Local public meetings
  - Draft Plan Review
  - Document *each and every time* you share and engage!
- **Why conduct outreach?**
    - Informs and educates about hazards and risks
    - Invites interested parties to contribute their views and ideas for mitigation
    - Identifies conflicts and incorporates different perspectives and priorities early in the process
    - Provides data and information that improves overall quality and accuracy of the plan
    - Ensures transparency and builds trust
    - Maximizes opportunities for implementation through greater consensus and acceptance





# Remember to Document Your In-Kind Services!



 **Warren County HMP - In-Kind Tracker**

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco (cynthia.bianco@tetratech.com | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

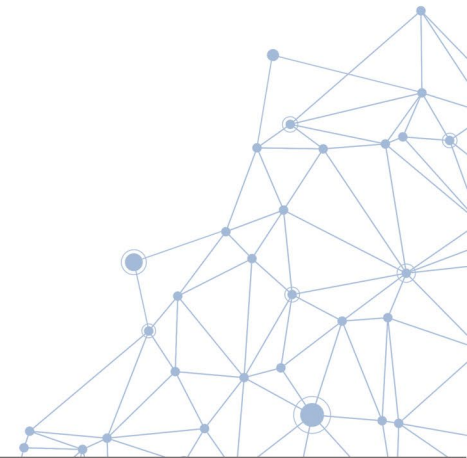
Please document your time spent working on the HMP:

Date	<input type="text"/>
# Hours	<input type="text"/>
Task Description	<input type="text"/>
Comments	<input type="text"/>

Please document your time spent working on the HMP:

Date	<input type="text"/>
# Hours	<input type="text"/>

- Use the on-line survey to document your in-kind hours worked on the hazard mitigation plan:  
<https://www.surveymonkey.com/r/WarrenNYHMPInKind>



# Schedule

- Planning Process
  - Confirm critical facility/lifeline inventory by December 9th
  - Worksheets due November 23rd
  - Worksheet Workshop – today!
  - Update Risk Assessment
  - Begin vulnerability assessment
  - Risk Assessment Meeting – February 2023
- Public Involvement Strategy – ongoing throughout the planning process
  - Mitigation Strategy
    - Mitigation Strategy Workshop
    - Draft Plan to Steering Committee by May 2023
  - Final draft plan to NYSDHSES and FEMA by August 2023



## Savage Chickens

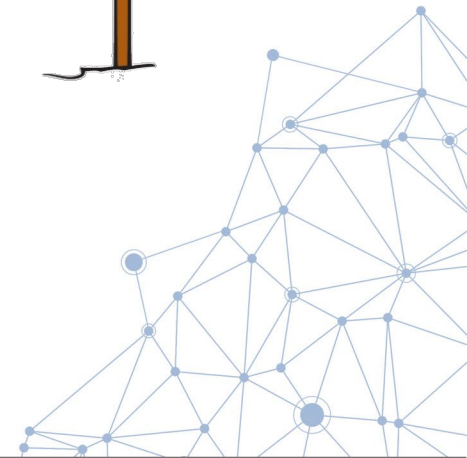
by Doug Savage





# Next Steps

- COMPLETE THE WORKSHEETS
  - Use Tetra Tech to answer any questions you may have!
- Review Risk Assessment Results
- Identify Problems and Problem Areas
- Develop Mitigation Strategy
- Review Draft Plan
- Submit Draft Plan for NYSDHSES/FEMA Review
- Adopt FEMA-Approved Plan
- Implement Projects and Maintain the Plan ➡ Increase Resilience!



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC, District Manager  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason, Emergency Services Director  
[masona@warrencountyny.gov](mailto:masona@warrencountyny.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #2 – AGENDA**  
**MEETING DATE/TIME: December 14, 2022 – 10:00 am**



Remote – MS Teams Link [Click here to join the meeting](#) (preferred for screen sharing)

Remote – Dial-in by phone (audio only) - [+1 518-300-1367,,503640440#](#) United States, Albany; Phone Conference ID: 503 640 440#

- Welcome
- Committee Responsibilities
- Progress Report
- Public and Stakeholder Outreach
- Data Collection - Plans and Reports
- Critical Facilities and Lifelines Review
- Confirmation of Hazards of Concern
- Goals and Objectives Updates
- SWOO (Strengths, Weaknesses, Obstacles, Opportunities)
- In-Kind Services Tracking
- Schedule
- Next Steps/ Questions/ Wrap Up



# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Teleconference Teams Meeting
Date of Meeting:	December 14, 2022, 10:00 am

## Attendees:

Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ethan Gaddy	Warren County Planning Department, CSC
Sandy LeBarron	Finch Pruyn, Director of Environmental Health, and Safety
Tammie DeLorenzo	Warren County Administrators Office
James Schrammel	City of Glens Falls, Fire Chief
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Don Lehman	Warren County Public Information Officer
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to confirm Hazards of Concern, Update Mission Statement, Goals and Objectives, and facilitate a SWOO.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation. The process is on track for plan submittal to FEMA in August 2023. Tetra Tech will begin the vulnerability analysis once the final municipal critical facility input is received from the local jurisdictions. Steering committee responsibilities include guiding the planning process and confirming the hazards of concern to include in the plan as well as the updated goals and objectives. GIS data collection is complete with support from the County GIS staff. The steering committee was provided with a list of plans gathered to date and requested to provide any additional relevant plans.</li> </ul>	Committee to review the list of plans collected to date and provide any additional relevant plans.
2	<b>Outreach</b> <ul style="list-style-type: none"> <li>The HMP website is now live at <a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a> and public outreach materials are available for distribution. All communities in the county have confirmed their intent to participate in the planning process.</li> <li>The county sent out a press release this month and a couple of local weekly newspapers published articles regarding the mitigation plan and provided access to the public survey.</li> </ul>	<ul style="list-style-type: none"> <li>Tt to provide a social media package to municipalities to enable further online outreach.</li> <li>Tt to contact Warren County (WC) Chamber of Commerce for business email distribution lists.</li> </ul>



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>One citizen has contacted Warren County Soil &amp; Water Conservation District (WCSWCD) to discuss concerns related to hazard mitigation and will meet with Mr. Lieberum to discuss.</li><li>Tt requested email lists to support the stakeholder outreach and distribution of surveys to agencies including health services, police, fire, EMS, etc. WC Emergency Services, Glens Falls Hospital will provide available information. Tt to contact the Chamber of Commerce to distribute surveys to county businesses.</li></ul>	
3	<b>Hazards of Concern</b> <ul style="list-style-type: none"><li>The committee confirmed that the following hazard of concern pose significant risk to the county and its communities:<ul style="list-style-type: none"><li>Disease Outbreak (including Covid-19, influenza, and tick-borne illnesses)</li><li>Earthquake</li><li>Extreme Temperatures</li><li>Flood</li><li>High Hazard Potential Dams</li><li>Infestation</li><li>Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)</li><li>Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)</li><li>Wildfire</li></ul></li></ul> <p>These hazards will be profiled for the plan to provide a basis for the vulnerability assessment and the development of mitigation actions.</p>	
4	<b>Goals and Objectives</b> <ul style="list-style-type: none"><li>Ms. Addonizio-Bianco shared the goals and objectives from the last HMP noting updates to include changes identified in the last committee meeting as well as additional edits to align with current priorities. During the discussion additional edits were made and are available in the attached document. The updated mission statement, goals and objectives will guide the plan update.</li></ul>	
5	<b>Strengths, Weaknesses, Obstacles, and Opportunities (SWOO)</b> <ul style="list-style-type: none"><li>Tt provided an overview of the purpose of the SWOO which is to review the hazards of concern to identify areas that the county and communities do well and can improve upon, and to further understand obstacles to implementing policy, actions, and projects to mitigate the effects of the hazards – all with the intent of identifying actions or projects to support resilience. The committee reviewed examples related to the flood hazard and participated in a discussion of county-specific issues. The committee members were requested to access and respond to the SWOO survey to document their input. Attached is the SWOO survey input received as of the date of this meeting.</li></ul>	<ul style="list-style-type: none"><li>The committee is requested to provide input to the SWOO survey to assist in identifying problem areas and mitigation actions.</li></ul>
6	<b>Upcoming Meetings</b>	





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>• Dates for the following meetings will be confirmed and shared with the committee in January:<ul style="list-style-type: none"><li>○ Risk Assessment Meeting – February 2023</li><li>○ Planning Partnership Risk Assessment Meeting – February 2023 (tentative)</li><li>○ Mitigation Strategy Workshop – March 2023</li></ul></li></ul>	
7	<b>Next Steps</b> <ul style="list-style-type: none"><li>• Provide input via Strengths, Weaknesses, Obstacles and Opportunities (SWOO) survey</li><li>• Review Hazard Profiles</li><li>• Review Risk Assessment Results</li><li>• Identify Problems and Problem Areas</li><li>• Develop Mitigation Strategy</li><li>• Review Draft Plan</li><li>• Submit Draft Plan for NYSDHSES/FEMA Review</li><li>• Adopt FEMA-Approved Plan</li><li>• Implement Projects and Maintain the Plan and Increase Resilience</li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 11:25 am.	

# Warren County, New York Hazard Mitigation Plan – 2023 Update

**Steering Committee #2 Meeting | December 14, 2022 | 10:00 – 11:30 AM**

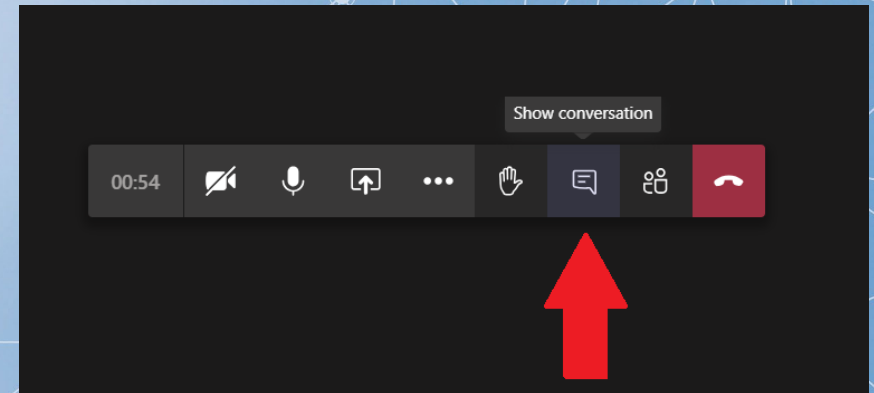
## ***WELCOME!***

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

Bring your mouse to the lower part of the screen until a set of buttons appears. They may also be at the top of your screen.

Click “Show Conversation” and type in your information.

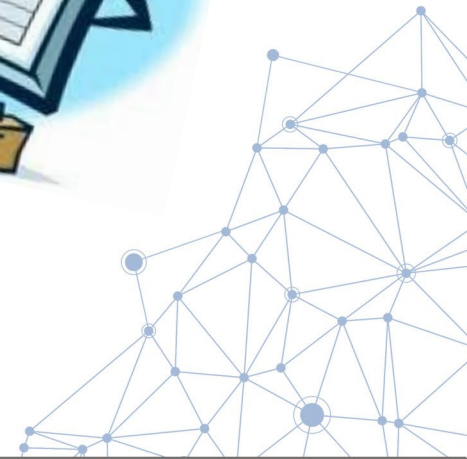
This will assist in our attendance documentation.





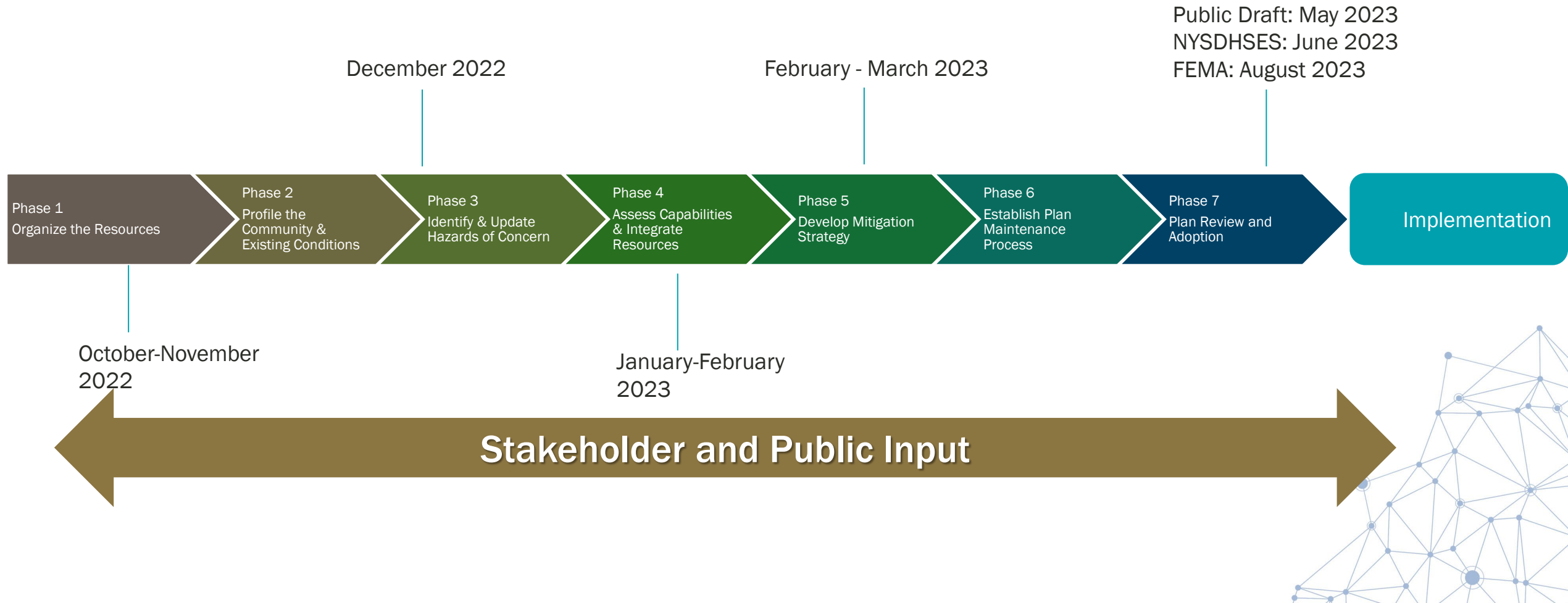
# Agenda

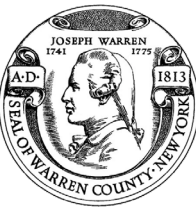
- Welcome
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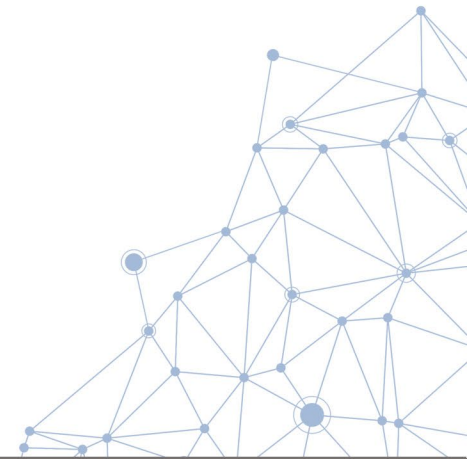
# Where are we in the Process?

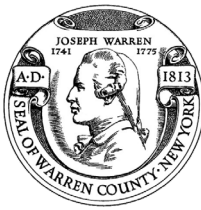




# Steering Committee Responsibilities

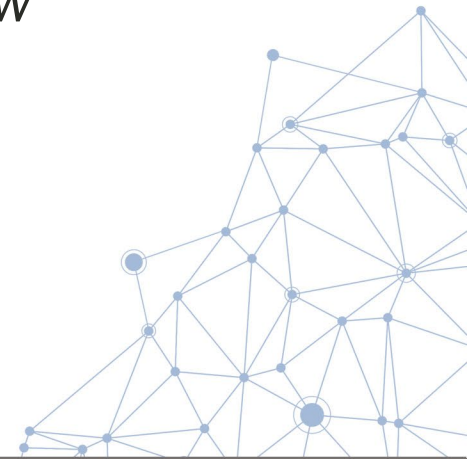
- ✓ Guide the Planning Partnership through the planning process
- ✓ Identify the natural hazards of concern
- ✓ Develop mitigation goals and objectives
- ✓ Develop public and stakeholder outreach strategy
- ✓ Support the development of the county-level mitigation strategy
- ✓ Review plan documents





# Progress

- Requested NFIP Data
- GIS Data Collection - *Complete*
- Critical Facility Survey for Municipal Input – *In progress*
- Review of Hazards of Concern/Input by Steering Committee – *Today*
- HMP website, HMP Fact Sheet, Citizen Survey, Agency Surveys - *Complete*
- County-Level/Regional Plan Collection – *For Steering Committee Review*
- Planning Partnership Participation – 100%



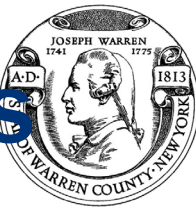




# Data Collection Status

Jurisdiction	Worksheet A - Hazard Event History	Worksheet B - Capability Assessment	Worksheet C - NFIP	Worksheet D - Action Review	Worksheet E - Building Permits
Warren County	X	X	N/A	X	X
Town of Bolton	X	X	X	X	
Town of Chester	X	X	X	X	X
City of Glens Falls					
Town of Hague	X	X	X	X	X
Town of Horicon					
Town of Johnsbury	X	X	X	X	X
Town of Lake George	X	X	X	X	X
Village of Lake George	X	X	X	X	X
Town of Lake Luzerne	X	X	X	X	X
Town of Queensbury	X	X	X	X	X
Town of Stony Creek	X	X	X	X	X
Town of Thurman	X	X	X	X	X
Town of Warrensburg	X	X	X	X	X

# Relevant County and Regional Plans and Studies



Name of Plan/Document	Date of Plan	Jurisdiction
Excessive Heat Plan	2022	Countywide
Schroon Lake Watershed Management Plan Addendum	2019	Chester (T)
Lake Champlain Watershed Roadside Erosion Assessment	-	Bolton (T), Hague (T), Lake George (T), Queensbury (T)
Upper Hudson River Watershed Management Plan	2020	Countywide
Friends Lake Watershed Assessment	2017	Chester (T)
LC Nonpoint Source Pollution Watershed Assessment and Management Plan	2018	Countywide
LG HAB Plan 2022 Update	2022	Lake George (T), Bolton (T)
Loon Lake Watershed Report	2021	Loon Lake, Chester (T)
Warren County - Dam Risk into Local HMG Plans	2021	Countywide

- *Summary matrix including local plans sent to committee for review .*



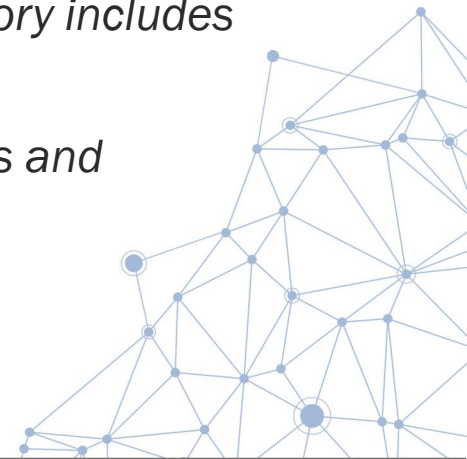
# Critical Facilities and Community Lifelines

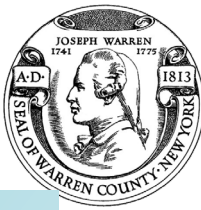
- Municipalities to review the updated critical facility inventory to ensure complete
- Critical facility survey distributed to communities on 12/8 with input due on or before 12/21/22.

***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 lifelines 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 includes police, fire, EMS, schools/colleges, shelters, senior facilities, and medical facilities.*

***Lifelines** provide indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security*



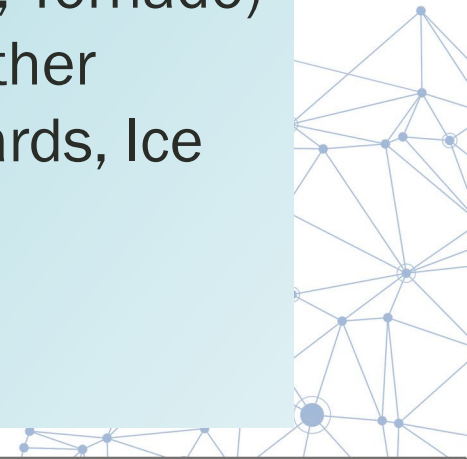


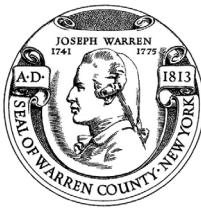
# Identifying Hazards of Concern

- The 2017 plan included:
  - Disease Outbreak (Influenza, Ebola, Zika)
  - Earthquake
  - Flood
  - Infestation
  - **Landslide**
  - Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
  - Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
  - Wildfire
- In review...
  - Have additional hazards impacted the County since 2017?
  - Have hazard been mitigated and no longer cause damage?
  - Should hazards be regrouped to minimize number or required actions?
  - Should additional hazards be included?

## 2023 Hazards to Consider

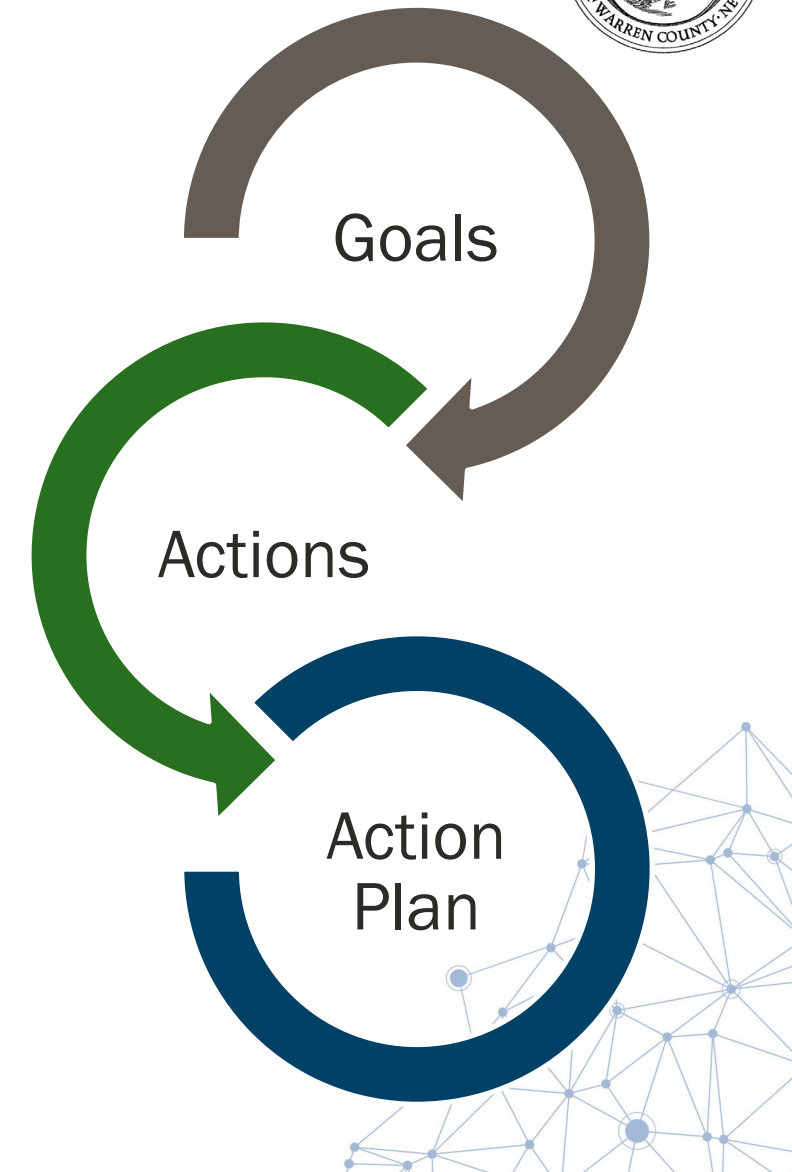
- **Disease Outbreak**
- Earthquake
- Extreme Temperatures
- Flood
- High Hazard Potential Dams
- Infestation
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire

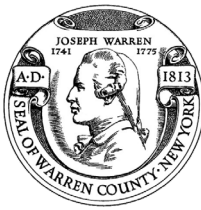




# Mitigation Strategy

- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce risk from hazards?
- Action Plan
  - How will the actions be prioritized and implemented?



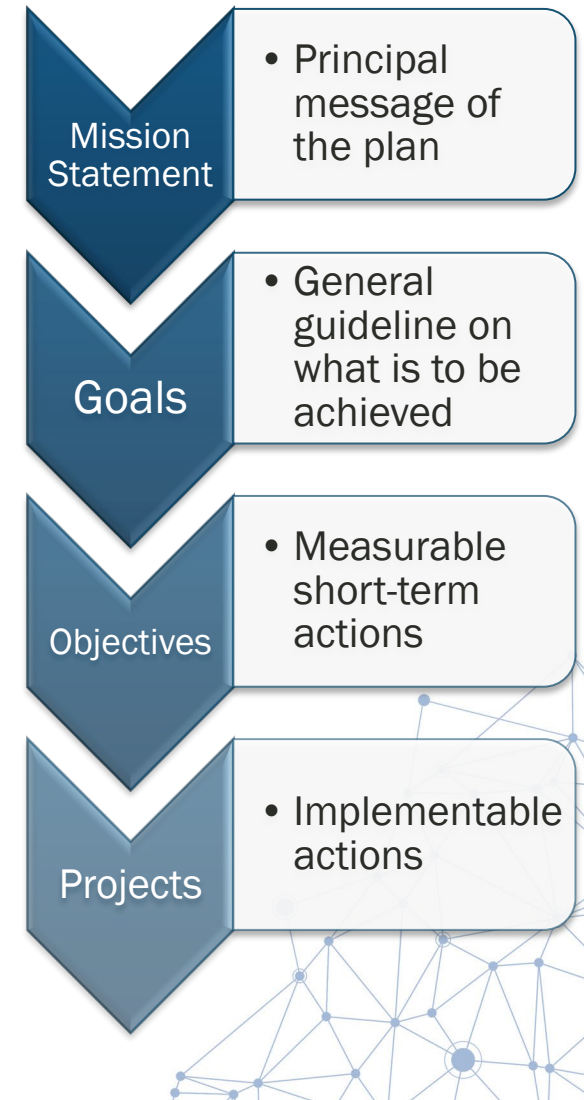


# Update Mission Statement?

As part the of the 2017 update process, the Steering Committee reviewed the mission statement and elected to maintain it without edit or amendment, as noted below. At this time, the committee is requested to review the Mission Statement to update to align with current County, state, and local policy. The committee is requested to consider adding the concept of equity and inclusiveness of socially vulnerable populations to the mission statement and the goals and objectives as well as additional adjustments to align with count, state, and local policy.

## *HMP Mission Statement*

*To create communities whose daily activities reflect a comprehensive commitment by government, business, non-profit organizations, **socially vulnerable populations** and the public to eliminate or reduce risks and adverse impacts from natural, **technological** and human-caused hazards .*







# Goals and Objectives Review and Update

Goal	Objective
<u>Goal 1:</u>  Protect Life and Property.	1.1: Introduce mitigation and adaptation activities that will make homes, businesses and critical facilities and infrastructure more hazard resistant and to increase resilience.
	1.2: In areas vulnerable to hazards, encourage businesses and homeowners to take preventive actions when possible and in an equitable manner.
	1.3: Periodically review existing building codes, safety procedures, municipal and county ordinances to update recent standards for building protection.
	1.4: Immediately enforce existing building codes, zoning ordinances, and floodplain development review and permitting within the jurisdictions.
	1.5: Encourage owners of home and businesses and renters to purchase appropriate insurance coverage for potential damages from hazards.
<u>Goal 2:</u>  Increase Public Awareness	2.1: Continue developing and integrating education and outreach programs in an effort to enhance public awareness of the hazards, and availability of information on specific activities for individuals in anticipation of a hazard event .
	2.2: Provide information on current government programs and funding resources to assist with mitigation and resilience.
	2.3: Strengthen communication and cooperation between public agencies, citizens, non-profit groups, and businesses to implement mitigation activities effectively.



# Goals and Objectives Review and Update

Goal	Objective
<u>Goal 3:</u> Provide for Emergency Services	3.1: Coordinate hazard mitigation activities with existing local emergency plans.
	3.2: Identify and plan for acquiring any specific emergency services and equipment needed to improve response capabilities for specific hazards.
	3.3: Review emergency traffic routes, making changes as needed, and educating the public as to the routes <b>including use of mass notification systems and real-time storm and problem area reporting.</b>
<u>Goal 4:</u>  Support comprehensive county and local mitigation through the integration of hazard mitigation planning into related state, regional, county and local plans and programs.	4.1: Promote land use planning to encourage resilient and sustainable efforts throughout statewide and regional programs that address zoning, building codes, capital improvement programs, open space preservation, nature-based solutions, and storm water management regulations. <b>Encourage integration of mitigation via review and update of local planning documents to be consistent with and relevant to the Hazard Mitigation Plan.</b>
	4.2: Continue to participate in state, regional and local programs and efforts that focus on practices that support or enhance resiliency.
	4.3: Improve hazard data through participation in studies, research, and mapping to enhance information related to the impacts of hazards and related risks, vulnerability, and losses.



# Goals and Objectives Review and Update

Goal	Objective
<u>Goal 5:</u>  Encourage the development and implementation of long-term, cost-effective, and resilient mitigation projects to preserve or restore the functions of natural systems.	5.1: Encourage the use of green and natural infrastructure, <b>low impact development, and</b> nature-based solutions.
	5.2: Provide technical assistance to communities and stakeholders in the application and implementation of mitigation projects that preserve or restore natural systems.
	5.3: Maintain and encourage ongoing relationships between state agencies and partners to play an active and vital role in preservation and restoration of vulnerable natural systems.
	5.4: Promote climate change adaption strategies that protect against long-term effects on the environment <b>and incorporate into a county-wide climate action plan.</b>
<u>Goal 6:</u>  <b>Address Long-Term Vulnerabilities from High Hazard Dams</b>	<b>6.1: Ensure dam infrastructure is maintained</b>
	<b>6.2: Ensure Emergency Action Plans are developed and updated</b>
	<b>6.3: Support the identification and access to funding to repair/replace dams</b>



# Public and Stakeholder Outreach

- HMP website is LIVE!

<https://www.warrencountynewyorkhmp.com>




- Social Media
- Stakeholder Survey
- Public Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey

**NORTH COUNTRY**

## Input needed on natural disasters in Warren County

by: Jay Petreaula  
Posted: Dec 9, 2022 / 11:54 AM EST  
Updated: Dec 9, 2022 / 12:03 PM EST

Severe damage to the driveway of Fairview Association, along Lake

SHARE    ...

WARREN COUNTY, N.Y. (NEWS10) – It's important to know and understand what potential hazards could come with where one lives, and what different weather conditions can bring to those areas. Warren County is looking for public input as it makes updates to its plan to curb natural disaster danger for county residents.

[Get the latest news, weather, sports and community events delivered right to your inbox!](#)

The county's Multi-Jurisdictional Hazard Mitigation Plan is up for revision – and a survey gives residents a chance to weigh in on it. The plan is a document that can be used by the county to reduce the impact and damage from natural disasters, especially targeted at prevention and

[NY Weather](#) [Traffic](#) [Watch Live News](#) [Sports](#) [Jobs](#)

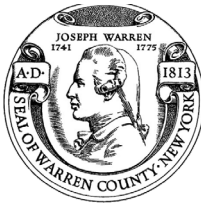
"Public participation and feedback are a vital part of the hazard mitigation planning process," said Warren County Emergency Services Director Ann Marie Mason. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."

The survey asks for residents to report what types of natural disasters they have seen and experienced in Warren County over the last decade, such as flooding, drought and climate change impacts. It also seeks information such as concern for future disasters, and how residents get their disaster information.

[ARPA lets Glens Falls Hospital's crisis unit grow](#)

The Hazard Mitigation Plan is updated every five years. The plan is used for communities to make risk-based decisions that can lead to fewer lives being lost, or less property being damaged, in the event of a disaster. The process going forward will also involve voices from nonprofits, community partners and the private sector. The plan will analyze how best to protect essential community facilities, transportation systems, lifeline utilities and hazardous material facilities.

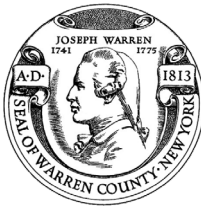




# Strengths, Weaknesses, Obstacles, and Opportunities (SWOO)

*The purpose of the SWOO is to identify mitigation strategies and capabilities that will meet the goals and objectives of the plan update. It is also used to develop potential mitigation actions for the participating jurisdictions.*

- Strengths – what we do well
- Weaknesses – what could we do better
- Obstacles – things that stand in the way, and either prevents you from doing something or something that need to be overcome
- Opportunities – used to develop mitigation strategies



# SWOO EXERCISE

## Strengths, Weaknesses, Obstacles and Opportunities

Thinking about hazards of concern and any new hazards for this update...what are some strengths, weaknesses, obstacles and opportunities the County has for each? Complete the form.

*Here are some examples to help brainstorm:*



Hazard: Flood	
S	Minimal exposure to flood risk
W	Silt and debris buildup in streams can lead to localized flooding
Ob	Funding for culvert and catch basin maintenance
Opps	Installing stream gages

Hazard: Severe Storms	
S	Tree trimming programs are in place
W	Aging infrastructure; lack of underground utilities
Ob	Cost to retrofit existing utility infrastructure
Opps	Underground utilities; enhance public outreach program

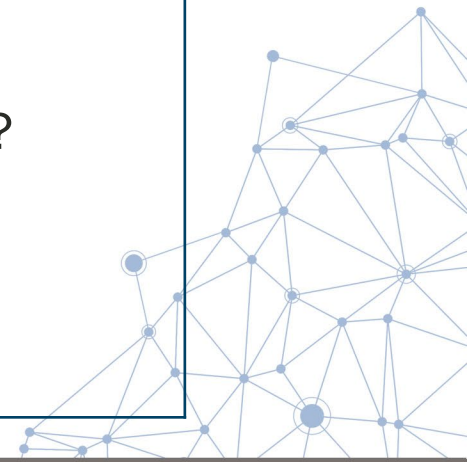
Hazard: Severe Winter Storm	
S	Municipalities have the resources and experience to deal with winter weather
W	Aging equipment
Ob	Funding; limited staff for prolonged events
Opps	Shared services

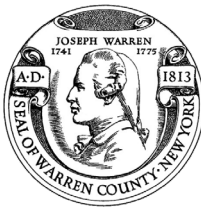




# 2020 SW00 Discussion/Example

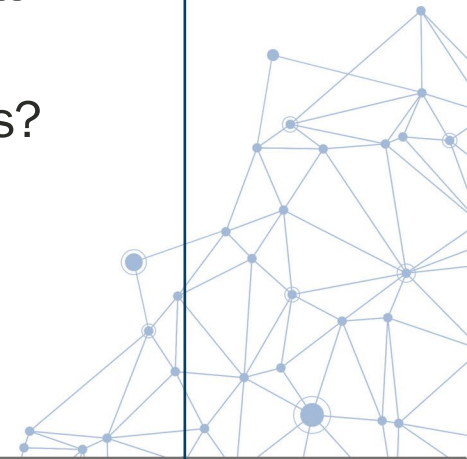
Flood	
Strengths	Weaknesses
<p>What do the County/Communities do well in terms of:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>	<p>What can the County/Communities do better or what are identified gaps in terms of:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>



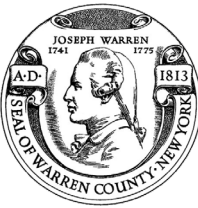


# 2020 SW00 Discussion/Example

Flood	
Obstacles	Opportunities
<p>What is preventing the County/Communities to implement:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>	<p>What can the County/Communities implement terms of:</p> <ul style="list-style-type: none"><li>➤ Plans and Regulations<ul style="list-style-type: none"><li>➤ Codes, Ordinances, Planning Studies, Comprehensive Plans, Adaptation and Resiliency Plans</li></ul></li><li>➤ Structure and Infrastructure Projects</li><li>➤ Natural Systems Protection</li><li>➤ Education and Awareness Programs?</li><li>➤ Preparedness</li><li>➤ Others?</li></ul>

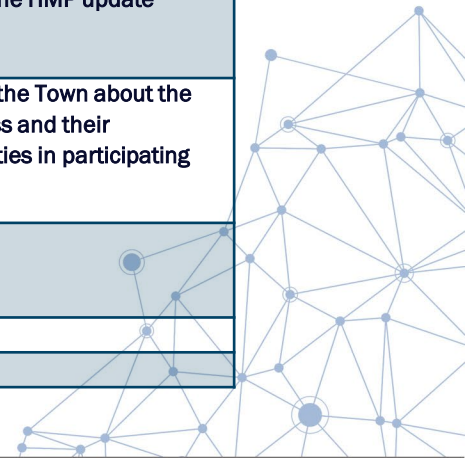


# In-Kind Services



- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at jim1@warrenswcd.org

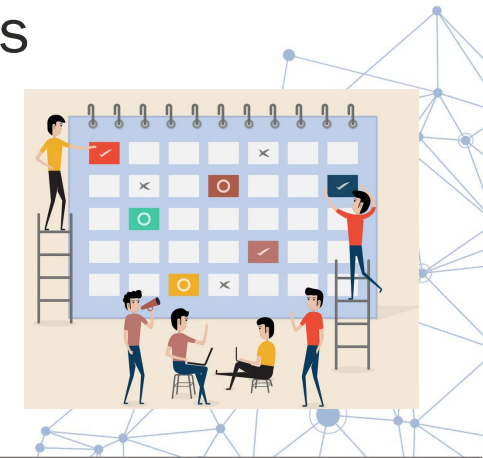
Name of Team Member: _____							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes – sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	

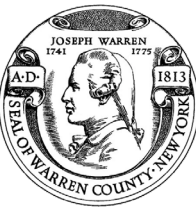




# Schedule

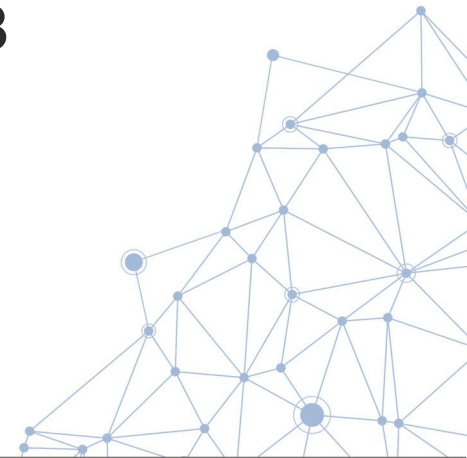
- Planning Process
  - Steering Committee #2 to identify hazards of concern for County and finalize goals– TODAY!
- Update Risk Assessment
  - Data collection is underway; confirm local critical facilities inventory by December 21, 2022
  - Begin vulnerability assessment
  - Risk Assessment Meetings: February (Steering Committee and Planning Partnership)
- Public Involvement Strategy – ongoing throughout the planning process





# Schedule

- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 2023**
- Draft Plan to Steering Committee in **May-June 2023** *(as sections are ready)*
- Public Review Period (30 days) – **June 2023**
- Final draft plan to NYSDHSES by June 2023 and FEMA by **August 2023**



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!



**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #3 – AGENDA**  
**MEETING DATE/TIME: February 10, 2023 – 10:00 am**



- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up





# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	February 8, 2023, 10:00 am

## Attendees:

Ann Marie Mason	Director, Warren County Office of Emergency Services
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ethan Gaddy	Warren County Planning Department, CSC
Aaron Frankenfeld	Director, Adirondack/Glens Falls Transportation Council
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Dan Barusch	Town/Village Lake George, Planner
Ashley Rivers	Warren County Office of Emergency Services
John Gibb	Contingency Management Consulting Group
Jennifer Ramsey	Warren County Office of Emergency Services
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to provide a project status update and the preliminary county level hazards of concern relative risk rankings; to obtain input or adjustments of the rankings to incorporate local data.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation.</li> <li>The process continues to be on track for plan submittal to FEMA in August 2023.</li> <li>The majority of data to support the hazard mitigation plan (HMP) development has been received, with the receipt of the National Flood Insurance Program (NFIP) data pending processing by FEMA.</li> <li>The table of contents and draft sections of the plan are being posted as available on the project Teams site to enable steering committee members to access and review to enable input prior to sharing the drafts with the public. Tt requested the steering committee to review the documents and provide comments via 'track changes'.</li> </ul>	
2	<b>In-Kind Services Tracking/Outreach</b> <ul style="list-style-type: none"> <li>Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information</li> </ul>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<p>to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</p> <ul style="list-style-type: none"><li>• The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>• Surveys to target the public, neighboring counties, agencies, and businesses have been distributed and will be used to provide additional input to the plan to support the identification of mitigation actions.</li></ul>	
3	<p><b>Risk Assessment Overview</b></p> <ul style="list-style-type: none"><li>• It reviewed the methodology to calculate the relative risk of the county's identified hazards of concern and shared the preliminary risk rankings. The ranks of Low, Medium, and High for each hazard will serve as a guide in identifying impactful mitigation actions to reduce damages and increase resilience. After review and adjustment by the core group, the preliminary county level ranks are as follows:<ul style="list-style-type: none"><li>○ Disease Outbreak (including Covid-19, influenza, and tick-borne illnesses) - <b>Medium</b></li><li>○ Earthquake - <b>Medium</b></li><li>○ Extreme Temperatures - <b>Medium</b></li><li>○ Flood - <b>High</b></li><li>○ Dams Failure - <b>High</b></li><li>○ Infestation - <b>Medium</b></li><li>○ Severe Storm (Windstorm, Thunderstorm, Hail, Tornado) – <b>High</b></li><li>○ Severe Winter Storm (Heavy Snow, Blizzards, Ice Storms) - <b>High</b></li><li>○ Wildfire - <b>High</b></li></ul></li></ul> <p>The county ranks indicate the highest municipal risk rather than the calculated regional risk. The Steering Committee was tasked to review the information provided in the presentation (see attached) to provide any additional input to revisit and potentially further adjust the rankings.</p> <p>Discussion included clarification that vulnerability assessment included only projected damages to general building stock and not potential infrastructure damages which are not modeled in Hazus-MH. These damages are an example of why the rankings should be adjusted, in particular, the flood ranking as it should include the risk posed by unmapped, localized flood areas evidenced by washouts and culvert failures. Capturing these floodprone areas was suggested as county and local level mitigation actions and could be documented in part using the ReadyWarren app.</p> <p>The public sharing of dam inundation areas was also discussed and will be addressed by Emergency Services staff.</p>	<p>Steering Committee members to email any input regarding adjusted risk ranking on or before 2/14/23.</p> <p>Emergency Services to review the level of detail provided to the public regarding dam inundation areas.</p> <p>Emergency Services, County GIS and SWCD to consider options to collect and map localized flood areas.</p>



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>These rankings will be presented to the Planning Partnership during a meeting on February 15<sup>th</sup>.</li></ul>	
6	<b>Upcoming Meetings</b> <ul style="list-style-type: none"><li>Planning Partnership Risk Assessment Meeting – February 15, 2023 <i>(Optional for Steering Committee members not affiliated with a municipality.)</i></li><li>Mitigation Strategy Workshop – March 15, 2023 <i>(Optional for Steering Committee members not affiliated with a municipality.)</i></li></ul>	
7	<b>Next Steps</b> <ul style="list-style-type: none"><li>Update Risk Assessment including adjustments as noted by Steering Committee</li><li>Present to planning partners</li><li>Populate adjusted results municipal annexes</li><li>Planning Partnership Risk Assessment Meeting: February 15, 2023</li><li>Continue to engage the public</li><li>Begin working with the municipalities to develop mitigation strategy/actions: <b>February 2023</b></li><li>Mitigation Strategy Workshop with FEMA and NYSDHSES – <b>March 15, 2023</b></li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 11:15 am.	



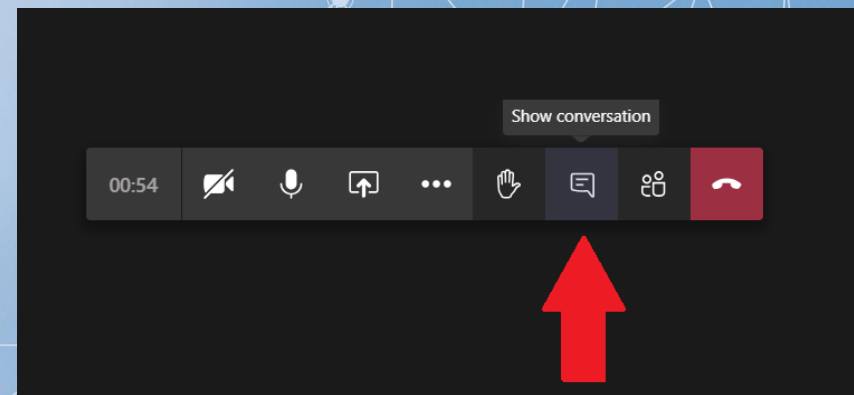
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Steering Committee #3 Meeting | February 10, 2023 | 10:00 – 11:30 AM

## ***WELCOME!***

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*

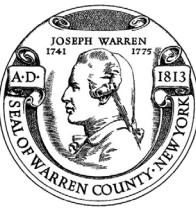




# Agenda

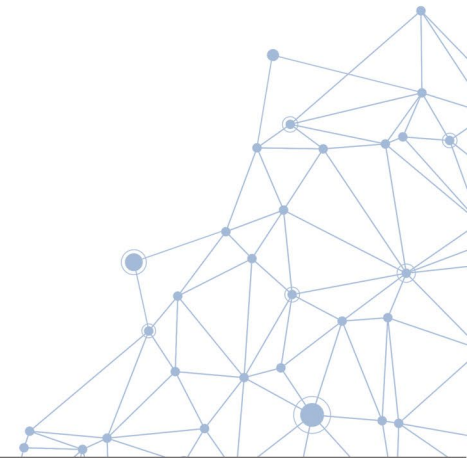
- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up

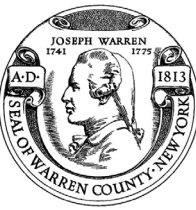




# Project Schedule Review

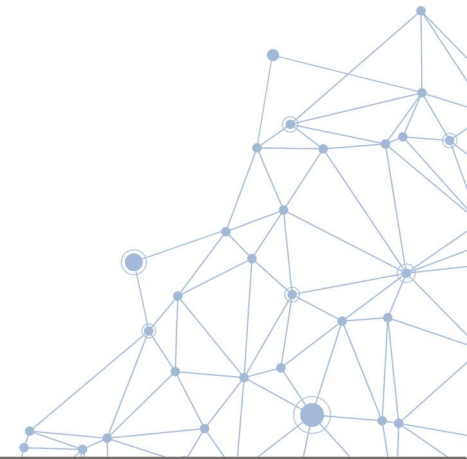
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ❑ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ❑ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ❑ | May 2023                | Review draft plan                                    |
| ❑ | July/August 2023        | Submit plan to NYSDHSES and FEMA                     |





# Progress

- Requested NFIP Data – *Data pending*
- GIS Data Collection - *Complete*
- Critical Facility Survey for Municipal Input – *Complete*
- HMP website, HMP Fact Sheet, Citizen Survey, Agency Surveys - *Complete*
- County-Level/Regional Plan Collection – *Complete*
- Planning Partnership Participation – 100%





# Document Review on Sharepoint

- Access for document review
- Review in “desktop app” in track changes

OneDrive interface showing the 'Warren County (NY) HMP' folder. The 'Steering Committee' folder is circled in green, with a blue arrow pointing to it.

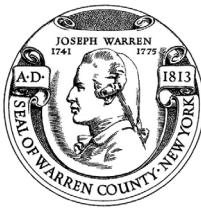
Name	Modified	Modified By	File size	Sharing
GIS	November 14, 2022	frankenfelds@warrencoun	4 items	Shared
Letters of Intent to Participate	September 16, 2022	Bianco, Cynthia	14 items	Shared
Outreach Materials	November 30, 2022	Bianco, Cynthia	10 items	Shared
<b>Steering Committee</b>	January 24	Bianco, Cynthia	1 item	Shared
Survey				
SWCD				

OneDrive interface showing the 'Documents for Review' folder. The file '5.2 - HOC ID\_Warren\_rev.docx' is circled in green, with a blue arrow pointing to it.

Name	Modified	Modified By	File size
Old	January 31	Bianco, Cynthia	6 items
Warren_TOC.docx	January 25	Bianco, Cynthia	205 KB
<b>5.2 - HOC ID_Warren_rev.docx</b>	6 days ago	Bianco, Cynthia	422 KB
Section 1-Introduction_rev.docx	6 days ago	Bianco, Cynthia	1.05 MB
Section 2-Plan Adoption.docx	January 25	masona@warrencountyny	360 KB
Section 5.1_Methodology_rev.docx	6 days ago	Bianco, Cynthia	517 KB

OneDrive interface showing the 'Steering Committee' folder. The 'Documents for Review' folder is circled in green, with a blue arrow pointing to it.


Name	Modified	Modified By	File size	Sharing
<b>Documents for Review</b>	January 24	Bianco, Cynthia	6 items	Shared



# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at jim1@warrenswcd.org

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/ Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes – sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco (cynthia.bianco@tetrattech.com | 973.630.8044).

\* Name

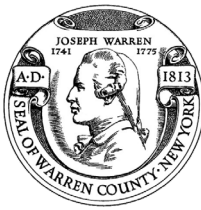
\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

# Hours



# Public and Stakeholder Outreach

- HMP website is LIVE!

<https://www.warrencountynynewyorkhmp.com>

- Social Media
- Public Survey
- Stakeholder Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey

The screenshot shows the homepage of the Warren County Hazard Mitigation Plan 2023 Update website. The header is dark blue with the Warren County seal and the title 'WARREN COUNTY HAZARD MITIGATION PLAN 2023 UPDATE'. Below the header is a navigation menu with links: Home, About, What is Mitigation, Meetings, Calendar, Explore the Plan, and Additional Information. The main content area has a white background. It starts with the title 'Warren County Hazard Mitigation Plan 2023 Update' and a welcome message. It then describes the project's goal: to save lives and property by reducing hazard vulnerability. A call to action box on the right says 'WARREN COUNTY HAZARD MITIGATION PLAN UPDATE LIVE OR WORK IN THE COUNTY? WE NEED YOUR HELP!' with icons for Grants & Funding, Plan & Prepare, and Mitigate, and a link 'CLICK HERE TO TAKE THE PUBLIC SURVEY'. Another call to action box on the left says 'WARREN COUNTY HAZARD MITIGATION PLAN UPDATE REPRESENT AN ORGANIZATION OR GROUP THAT WORKS IN THE COUNTY? WE NEED YOUR HELP!' with icons for a school, fire station, hospital, police, and city hall, and a link 'CLICK HERE TO TAKE THE SURVEY'. Below this, it explains that public participation is vital and that the HMP Steering Committee has developed a survey. It also mentions that questions or comments can be sent via a form. At the bottom, there is a section for 'Events in February 2023' with a calendar navigation bar showing 'February 2023' and 'Go' button.



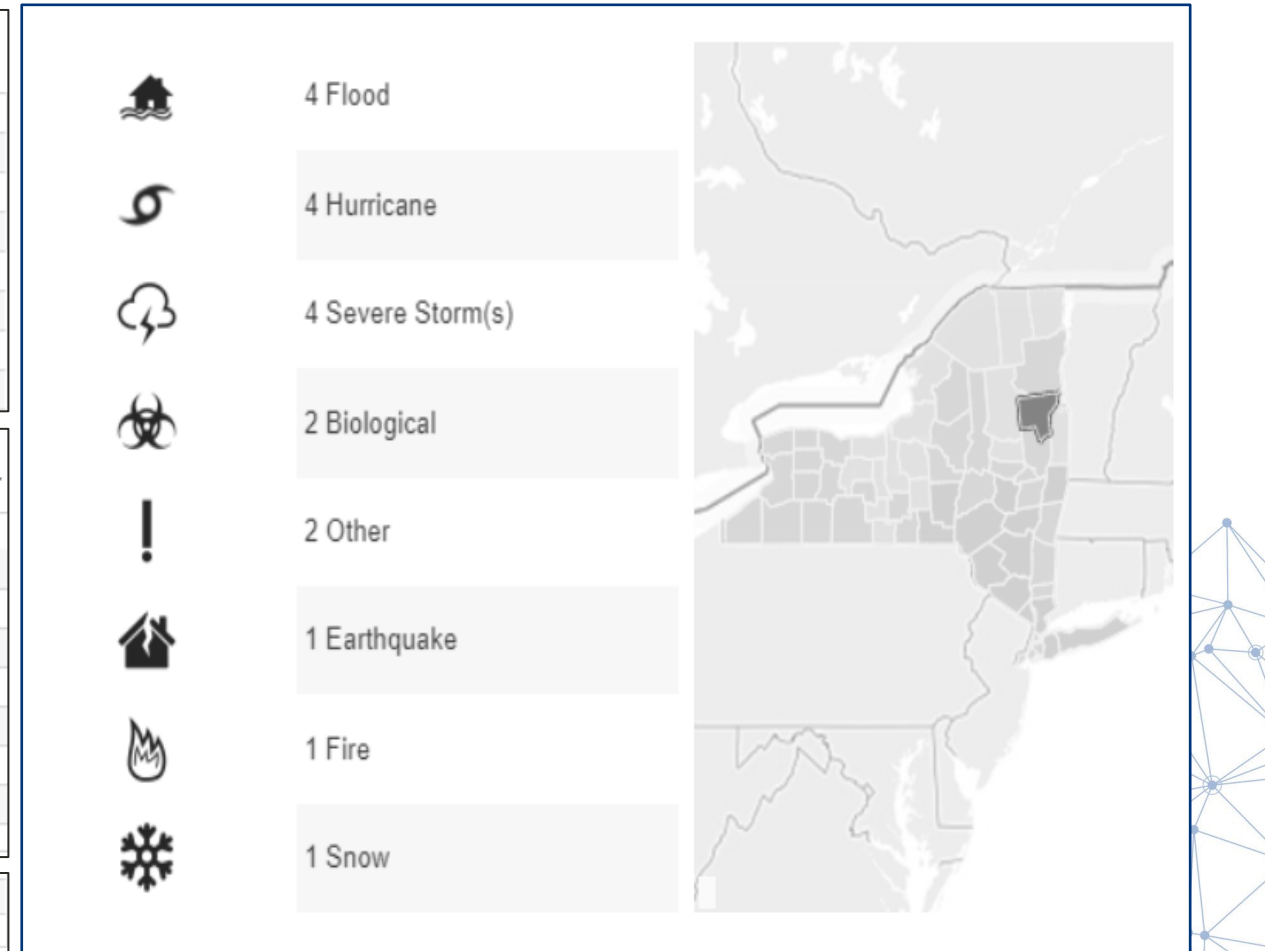


# Hazard Mitigation – What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480





# 2023 HMP Hazards of Concern

- Disease Outbreak
- Earthquake
- Extreme Temperatures
- Flood
- High Hazard Potential Dams
- Infestation
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire



# What is Risk?

## ✓ Hazard

- Source of potential danger or adverse condition

## ✓ Exposure

- Manmade or natural features that are exposed to the hazard

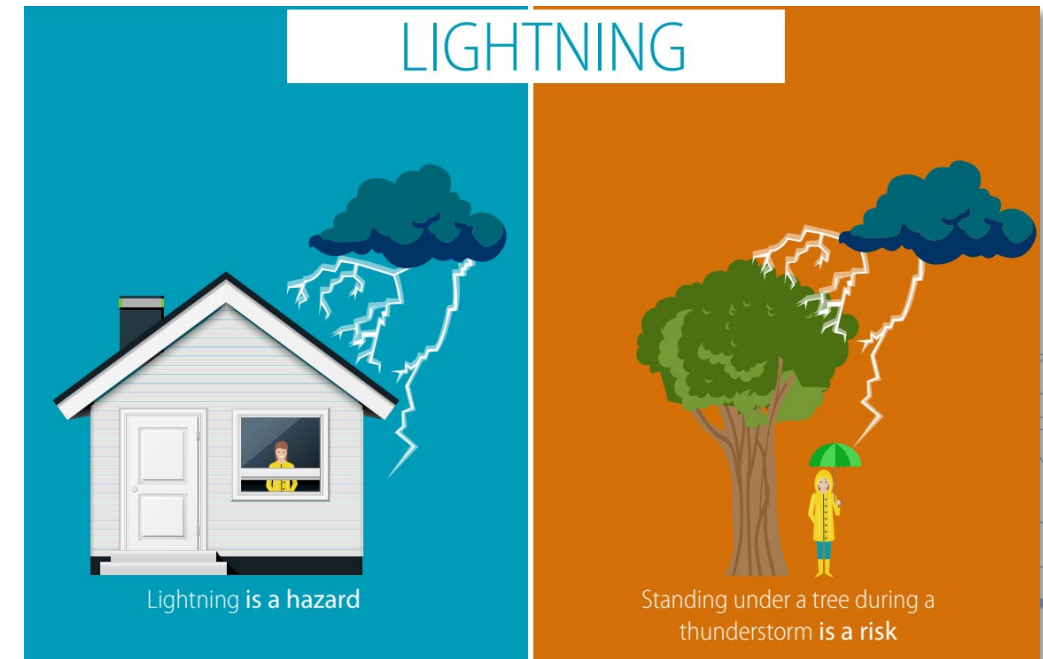
## ✓ Vulnerability

- Damage susceptibility of the exposed features

## ✓ Adaptive Capacity (or capability)

- Plans/policies
- Response/recovery
- Financial resources

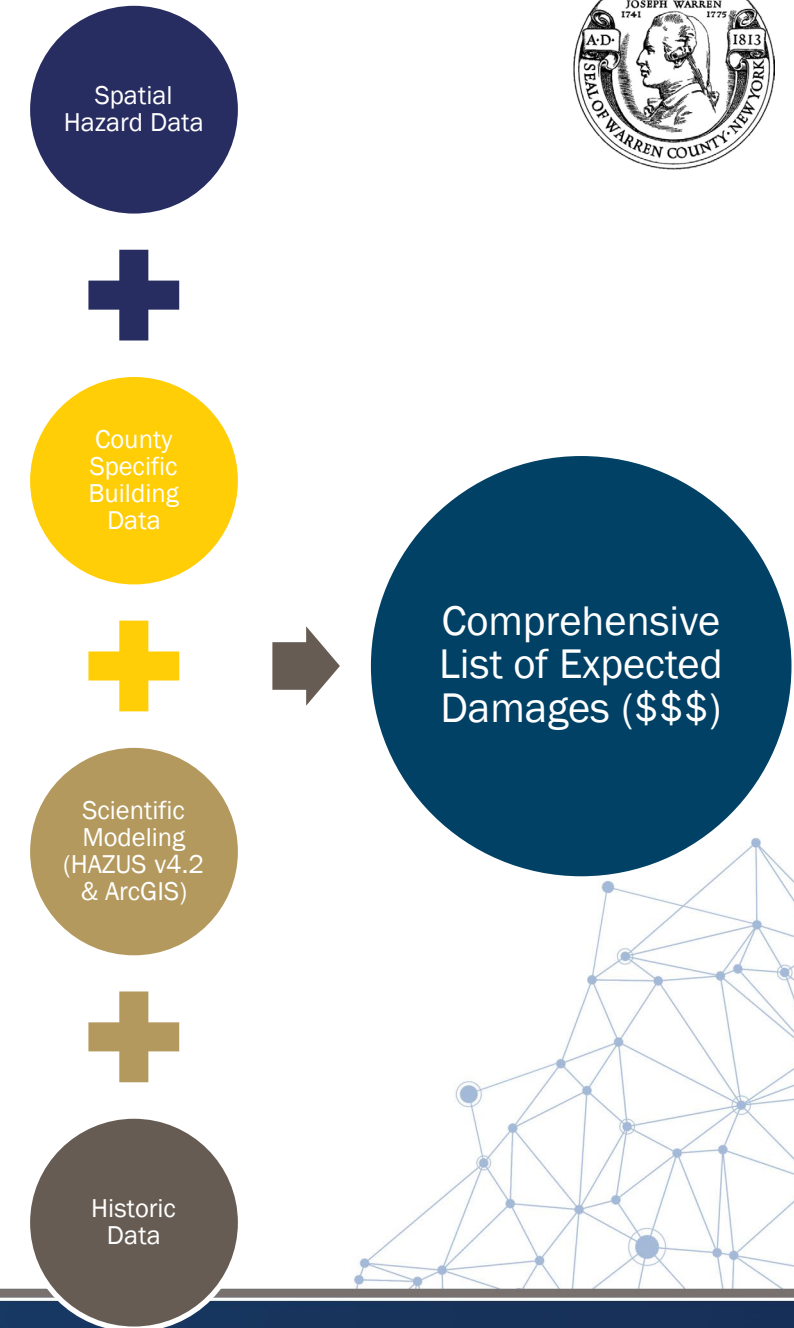
## ✓ Climate Change





# Purpose of the Risk Assessment

- To get a better understanding of the risks you face
- Initial results based on available data
- Quantitative data (population/structures exposed, structural damages within hazard zones) used when available
- Qualitative community input (such as unmapped flood areas) integrated to adjust results
- Local community input to adjust relative rankings

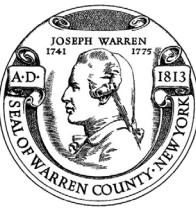




# Preliminary Hazard Ranking

How are the rankings calculated?

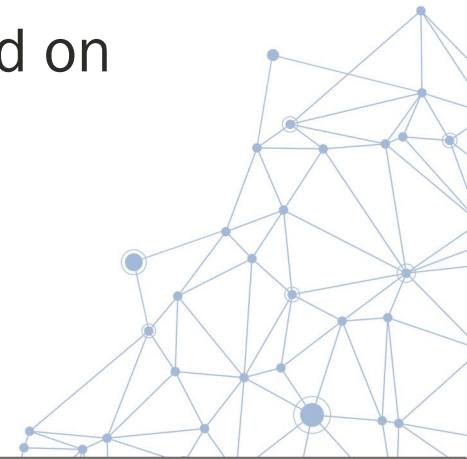




# Preliminary Hazard Ranking Methodology

Hazard Ranking is determined by quantitative and qualitative factors including:

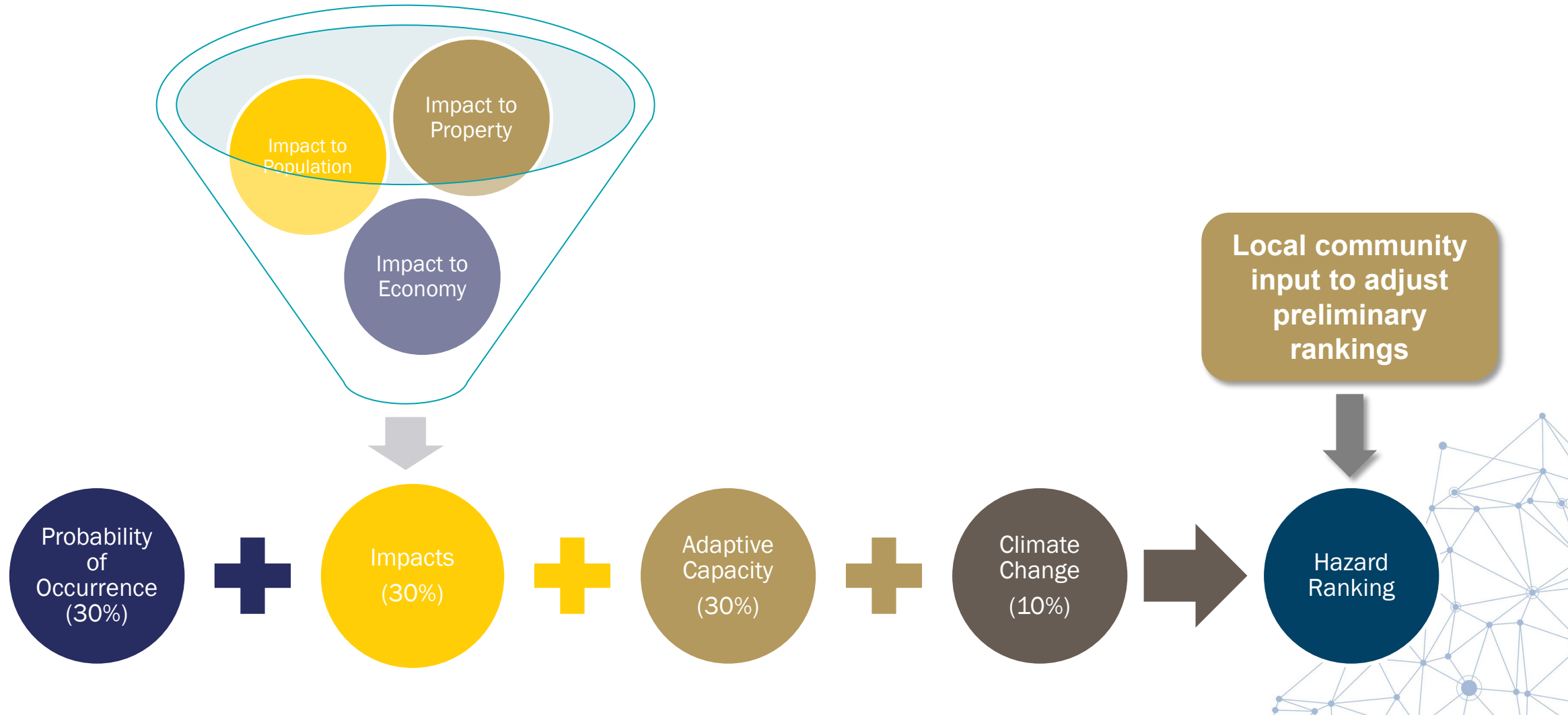
- The calculated probability of a hazard occurring based on historical data
- *Impacts to people, property, and the economy* based on GIS data and analysis of exposure.
- The degree to which climate change will affect future occurrences based on best available data.
- Capability- the ability of your community to respond to the hazard based on ordinances, mitigation strategies and procedures, and readiness.







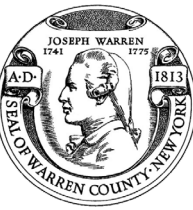
# Hazard Ranking Formula



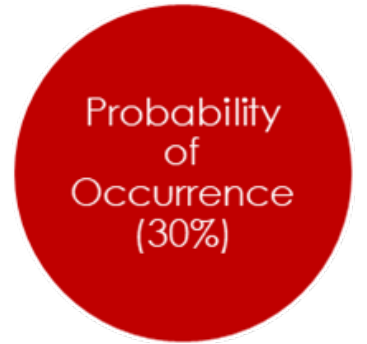
# Ranking the Hazards of Concern

What information plays a role in determining the risk rankings?

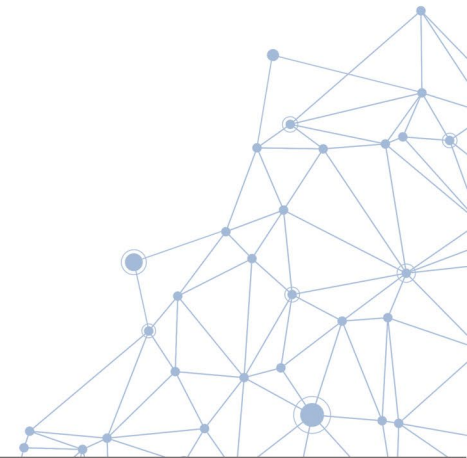




# Probability Of Occurrence



- **Unlikely**
  - Not likely to occur or less than 1% annual chance of occurring
- **Rare**
  - Between 1 and 10% annual chance of occurring
- **Occasional**
  - Between 10 and 100% annual chance of occurring
- **Frequent**
  - 100% chance occurring; occurs multiple times a year





# Hazard Ranking Input

## Impact on Population – Function of population exposed

- ✓ Low – 14% or less population exposed
- ✓ Medium – 15%-29% population exposed
- ✓ High – 30%+ population exposed

## Impact on property – Function of structures exposed

- ✓ Low – 14% or less structures exposed
- ✓ Medium – 15%-29% structures exposed
- ✓ High – 30%+ structures exposed

## Impact on economy – Function of damages to building stock

- ✓ Low – 9% or less loss estimate of total replacement cost
- ✓ Medium – 10%-19% loss estimate of total replacement cost
- ✓ High – 19%+ loss estimate of total replacement cost

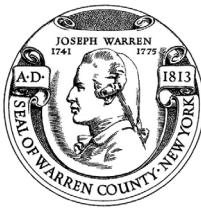
## Capability – Function of level of planning, policies, enforcement

- ✓ Weak – outdated policies; limited to no deployable resources; limited capabilities to respond; long recovery
- ✓ Moderate – minimum requirements; mitigation strategies identified but not implemented; moderate county capabilities
- ✓ Strong – exceed requirements; mitigation/protective measures in place; county/jurisdiction has ability to recover quickly because resources are readily available, and capabilities are high

## Climate Change – Function of climate predictions

- ✓ Low - No local data is available; modeling projects are uncertain on whether there is increased future risk; confidence level is low (inconclusive evidence)
- ✓ Medium - Studies and modeling projections indicate a potential for exacerbated conditions due to climate change
- ✓ High - Studies and modeling projections indicate exacerbated conditions/increased future risk due to climate change



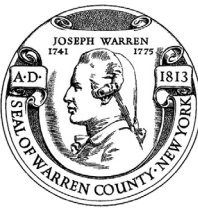


# Preliminary Overall Risk Ranking

Hazard of Concern	2021 CEPA Ranking	2023 Calculated Risk Ranking	2017 Risk Ranking	2023 Adjusted Ranking
Earthquake	Low	Low	High	Medium
Extreme Temperature	-	Medium	-	Medium
Flood	Very High	Low	Medium	High
Severe Storm	Medium	High	High	High
Severe Winter Storm	High	High	High	High
Wildfire	Medium	High	High	High
Infestation	-	Medium	Medium	Medium
Dam Failure	-	High	-	High
Disease Outbreak/Pandemic	Medium	Low	Medium	Medium

\* Potential adjustments

# Municipal Level Risk Ranking (Preliminary)



Hazard Ranking									
Municipality	Earthquake	Extreme Temps	Flood	Severe Storm	Severe Winter Storm	Wildfire	Infestation	Dam Failure	Disease Outbreak
Bolton (T)	Low	Medium	Low	High	High	Medium	Medium	High	Medium
Chester (T)	Low	Medium	Low	High	High	Low	Medium	High	Low
Glens Falls (C)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Hague (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Horicon (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Johnsburg (T)	Low	Medium	Low	High	High	Low	Medium	High	Medium
Lake George (T)	Low	Medium	Low	High	High	High	Medium	Medium	Medium
Lake George (V)	Low	Medium	Low	High	High	High	Medium	Low	Low
Lake Luzerne (T)	Medium	Medium	Low	High	High	Medium	Medium	Medium	Low
Queensbury (T)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Stony Creek (T)	Medium	Low	Low	High	High	Low	Medium	Medium	Low
Thurman (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Warrensburg (T)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Warren County	Medium	Medium	Low	High	High	High	Medium	High	Low

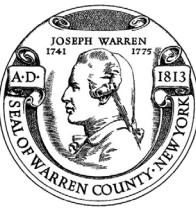
\* To be adjusted





# Sample Risk Analysis Input (Flood)

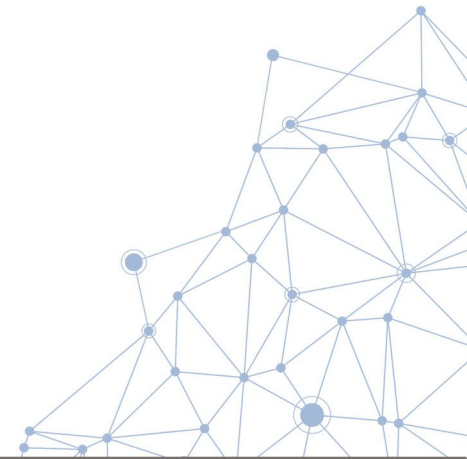
Warren County Municipality	Probability		Impact on Population				
	Impact	Index	Population (2020 Decennial)	1-Percent Annual Chance Flood Event Population Exposed	Percent Population Exposed (1-Percent Annual Chance Flood Event)	Impact	Numeric Value x3
Bolton (T)	Frequent	3	2,012	132	6.5%	L	3
Chester (T)	Frequent	3	3,086	262	8.5%	L	3
Glens Falls (C)	Frequent	3	14,830	0	0.0%	L	3
Hague (T)	Frequent	3	633	45	7.1%	L	3
Horicon (T)	Frequent	3	1,471	77	5.2%	L	3
Johnsburg (T)	Frequent	3	2,143	49	2.3%	L	3
Lake George (T)	Frequent	3	2,494	65	2.6%	L	3
Lake George (V)	Frequent	3	1,008	2	0.2%	L	3
Lake Luzerne (T)	Frequent	3	3,079	200	6.5%	L	3
Queensbury (T)	Frequent	3	29,169	376	1.3%	L	3
Stony Creek (T)	Frequent	3	758	23	3.0%	L	3
Thurman (T)	Frequent	3	1,095	8	0.7%	L	3
Warrensburg (T)	Frequent	3	3,959	147	3.7%	L	3
Warren County	Frequent	3	65,737	1,385	2.1%	L	3



# Earthquake

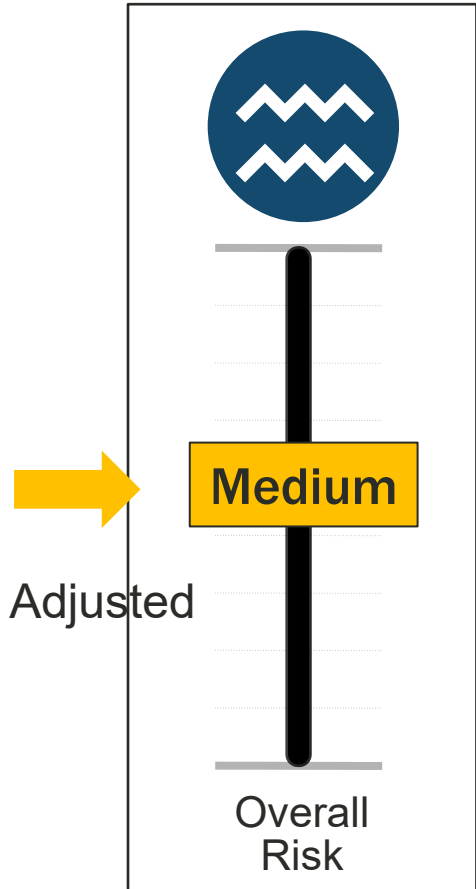
- Number of Events
  - 189 earthquakes epicentered in NYS with 4 epicentered in Warren County, per 2015 NYS HMP, between 1973 and 2014
  - Faults are located within the County
  - Individual Assistance (IA) declared for EMA declarations DR-1415 in Warren County (5/16/2002)
  - Impacts
    - 2 earthquake scenarios: 500-yr and 2500-yr events
    - People and structures located in areas with soils more susceptible to earthquakes

Warren County  
Ranking  
**MEDIUM**





# Countywide Preliminary Risk Ranking: Earthquake



**Probability of Occurrence: Rare**



**Impact on Population: Medium**

65.6% of population is exposed and vulnerable (NEHRP D & E soils)



**Impact on Property: High**

48.7% of County building stock is exposed and vulnerable (NEHRP D & E soils)



**Impact on Economy: Low**

\$1.9% of Structural Replacement Cost Value damaged



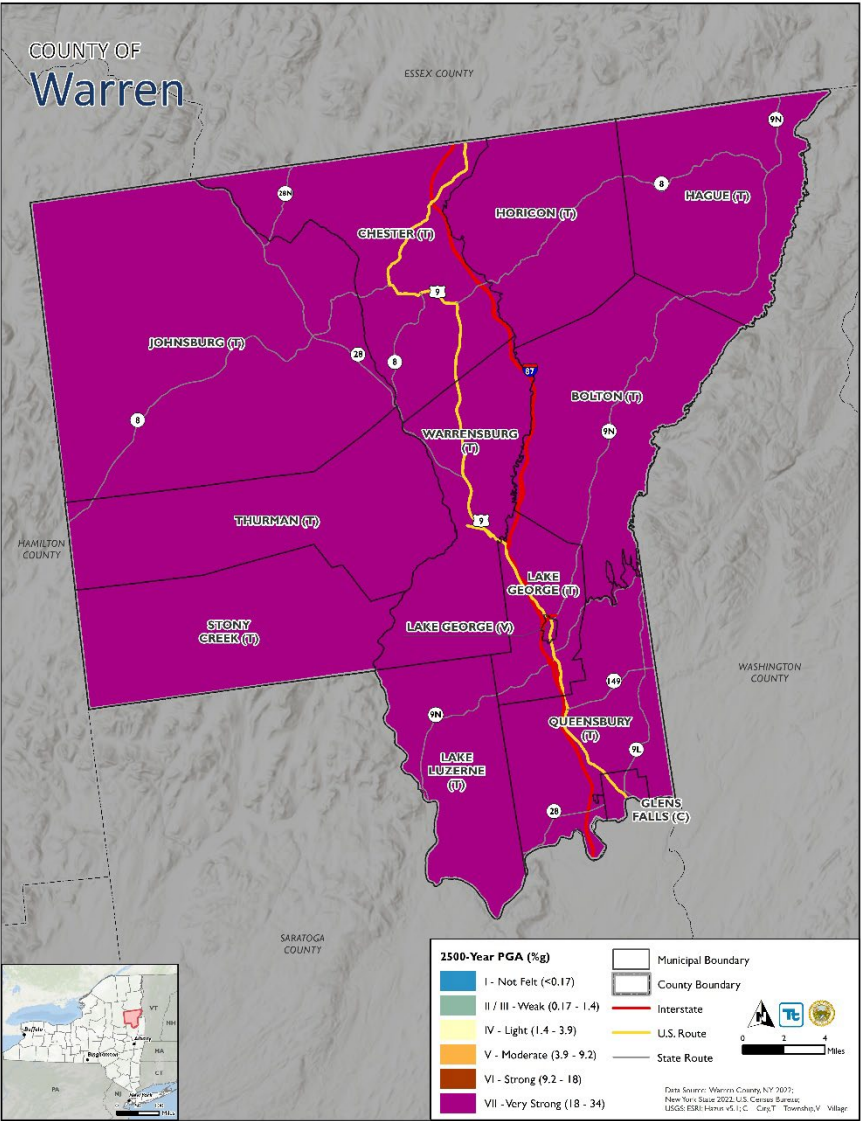
**Adaptive Capacity: Medium for all municipalities**



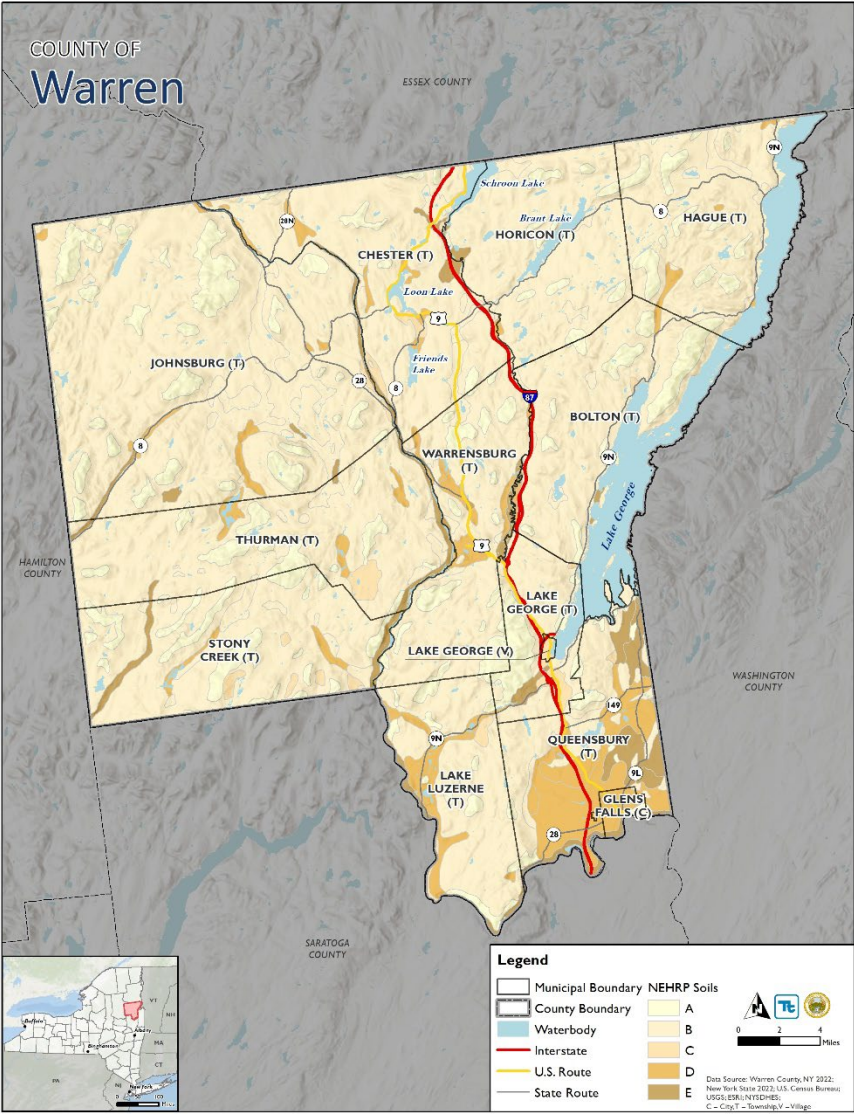
**Climate Change: Low for all municipalities**



# Peak Ground Acceleration



# NEHRP Soil Class



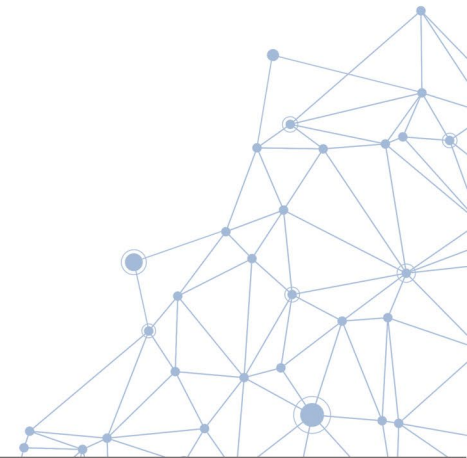




# Flood

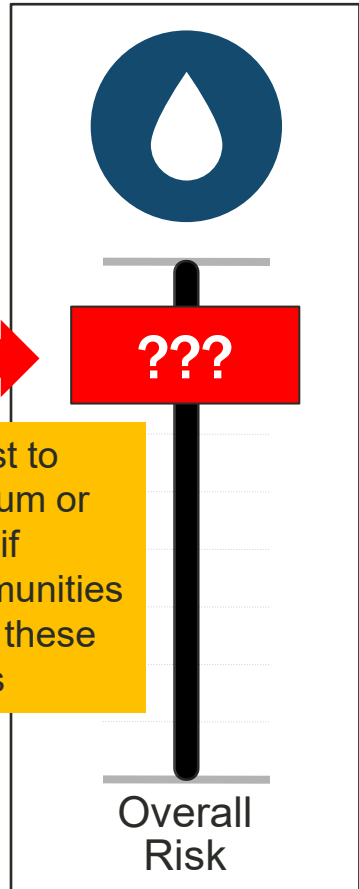
- Previous Events
  - Riverine, flash, and stormwater flooding
    - Between 2000 and 2022, Warren County included in 2 FEMA flood-related declarations.
      - FEMA-DR-1993 (Severe Storms Tornadoes, Winds and Flooding) – April 26, 2011
      - FEMA-DR-4129 (Severe Storms, and Flooding) – July 2013
- Exposure
  - People and property located in the 1% annual chance flood area

Warren County  
Ranking  
**LOW**





# Countywide Preliminary Risk Ranking: Flood



**Probability of Occurrence: Frequent**



**Impact on Population: Low**

1,385 people (2.1% of the population) in the SFHA



**Impact on Property: Low**

1,252 buildings (3.1% of total County buildings) in the SFHA; 1 Rep Loss



**Impact on Economy: Low**

\$721 M Replacement Cost Value (RCV) (3% of County total RCV) located in the Regulatory Floodplain



**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**

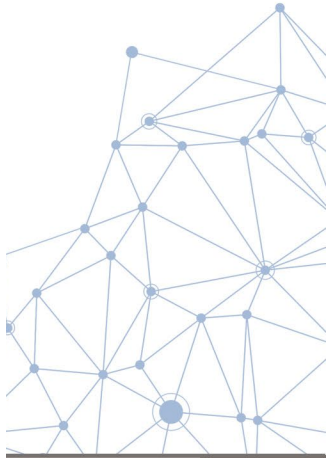
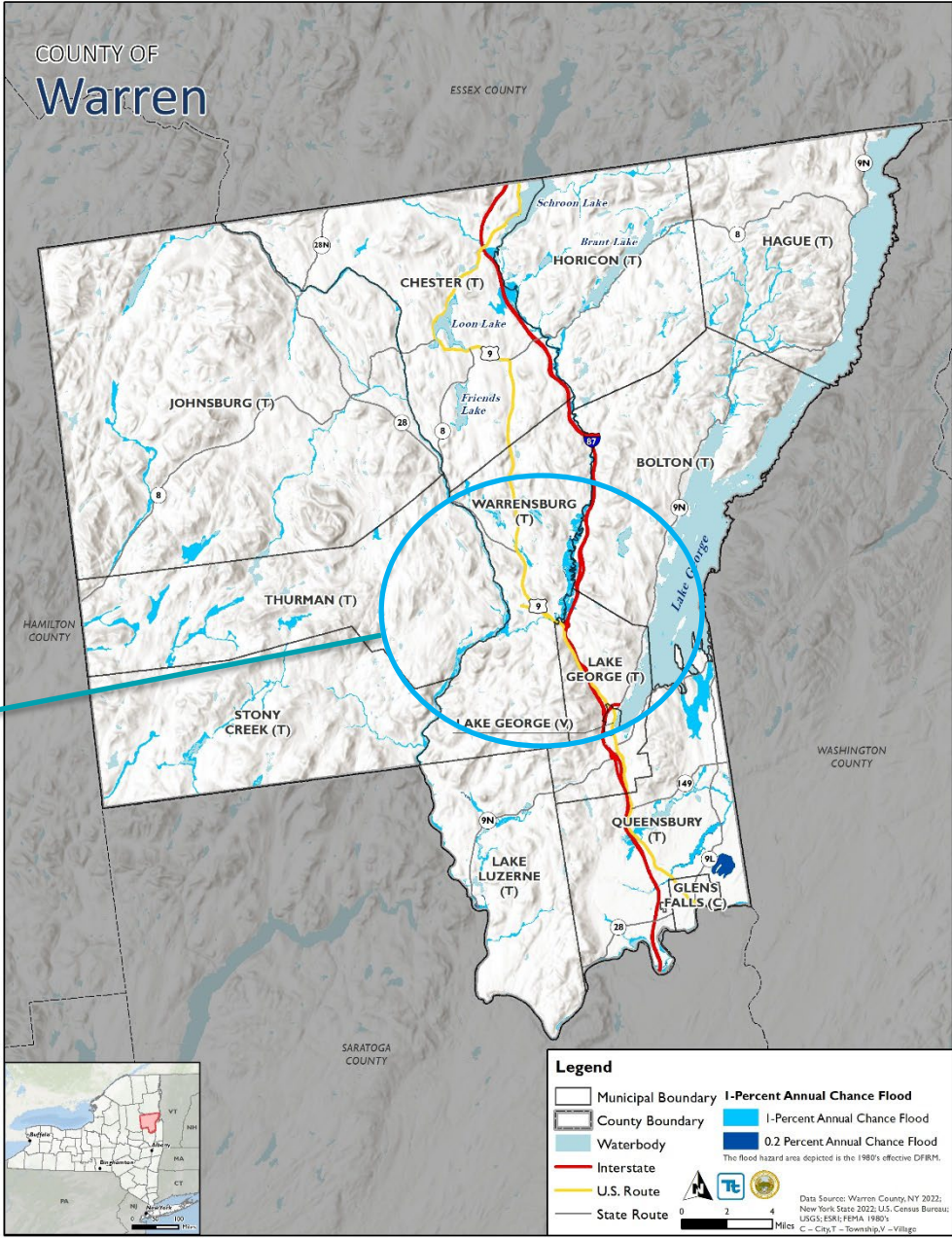
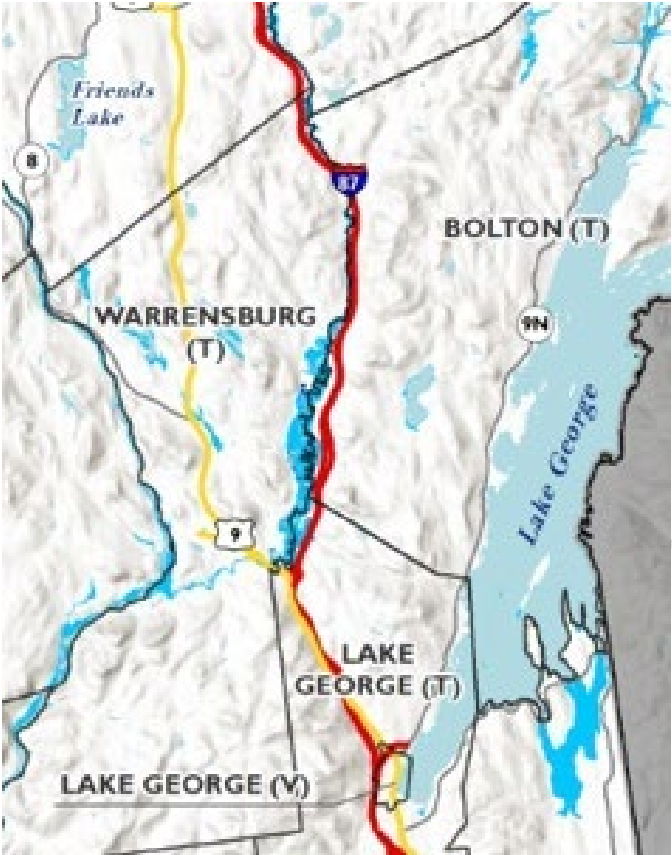
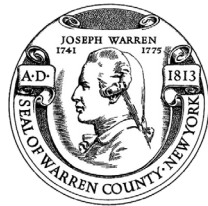




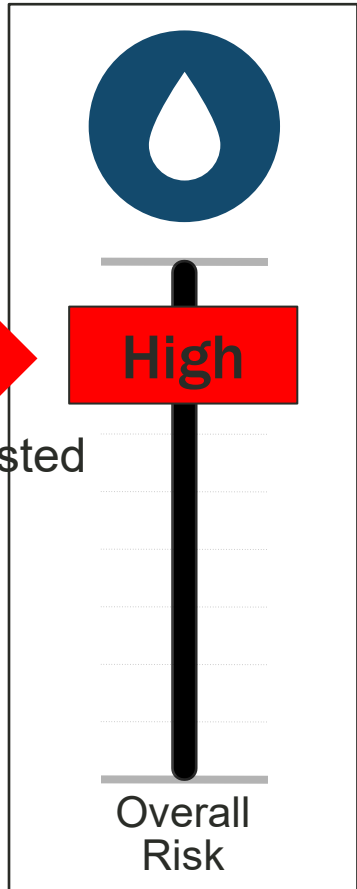
# 2023 vs. 2017 Rankings (Flood)

Warren County Municipality	IMPACT ON POPULATION	IMPACT ON PROPERTY	IMPACT ON ECONOMY	RISK RANKING	RISK RANKING
	Percent Population Exposed (1-Percent Annual Chance Flood Event)	Percent of Total Buildings in 1% Flood Area	Percent of Total GBS RCV	2023 Estimated	2017
Bolton (T)	6.5%	6.6%	6.5%	Low	Medium
Chester (T)	8.5%	8.2%	7.6%	Low	Medium
Glens Falls (C)	0.0%	0.1%	1.0%	Low	Medium
Hague (T)	7.1%	7.0%	3.2%	Low	Medium
Horicon (T)	5.2%	5.2%	7.2%	Low	Medium
Johnsburg (T)	2.3%	2.4%	3.8%	Low	Medium
Lake George (T)	2.6%	2.5%	1.0%	Low	Medium
Lake George (V)	0.2%	1.1%	1.2%	Low	Medium
Lake Luzerne (T)	6.5%	6.3%	3.6%	Low	Medium
Queensbury (T)	1.3%	1.4%	2.1%	Low	Medium
Stony Creek (T)	3.0%	3.2%	3.8%	Low	Medium
Thurman (T)	0.7%	0.8%	0.5%	Low	Medium
Warrensburg (T)	3.7%	3.9%	2.7%	Low	High
Warren County	2.1%	3.1%	3.0%	Low	Medium

# Flood Hazard Areas



# Countywide Preliminary Risk Ranking: Dam Failure



Probability of Occurrence: Rare



Impact on Population: High

216 people in inundation areas



Impact on Property: High

254 buildings (0.6% of total County buildings) located in inundation areas



Impact on Economy: High

\$130 M Replacement Cost Value (RCV) (0.5% of County total RCV) in inundation areas



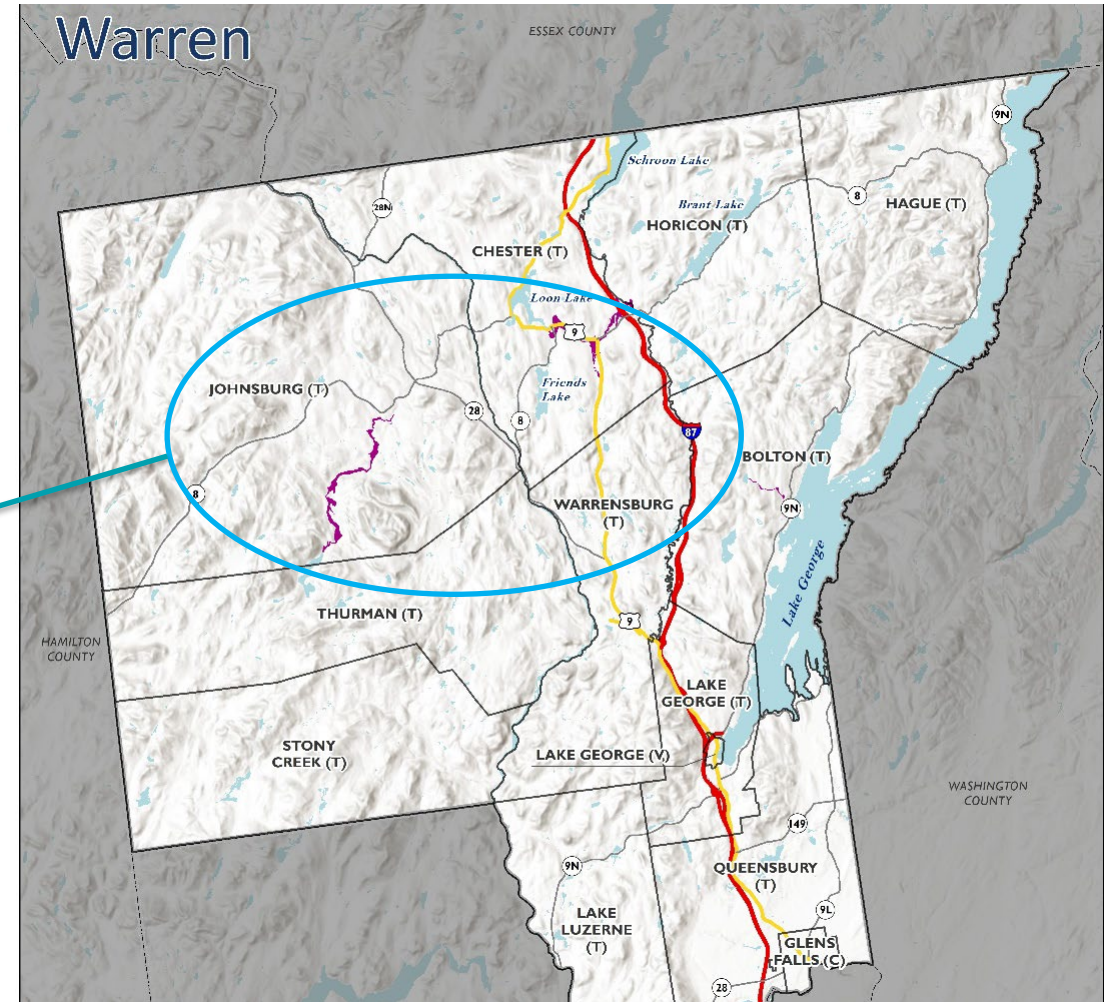
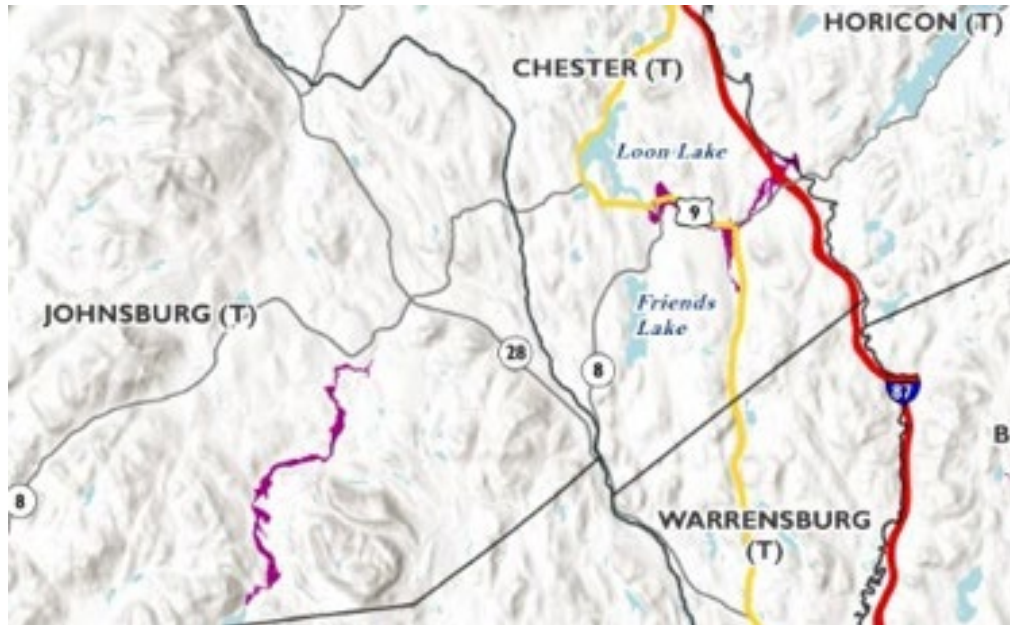
Adaptive Capacity: Medium for all municipalities



Climate Change: High for all municipalities



# Dam Inundation Areas





# Severe Storm

- Previous Events

- Hazard includes lightning, hail, and windstorms
- FEMA-DR-4472 (Severe Storms, Straight-line Winds and Flooding) – October 2019
- Between 2016 and 2022, Warren County was included in 1 FEMA severe storm-related declaration.
- According to the NOAA, 5 tornado events took place in Warren County between 1950 and 2022

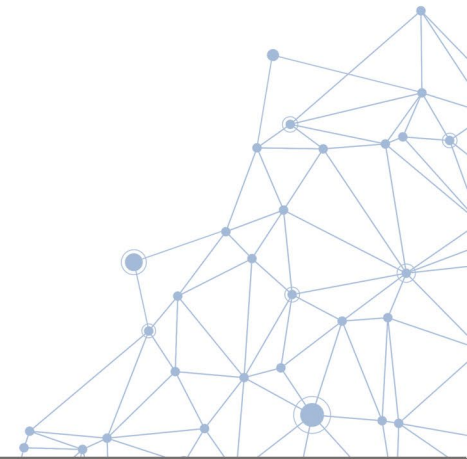
Warren County  
Ranking  
**HIGH**

- Exposure

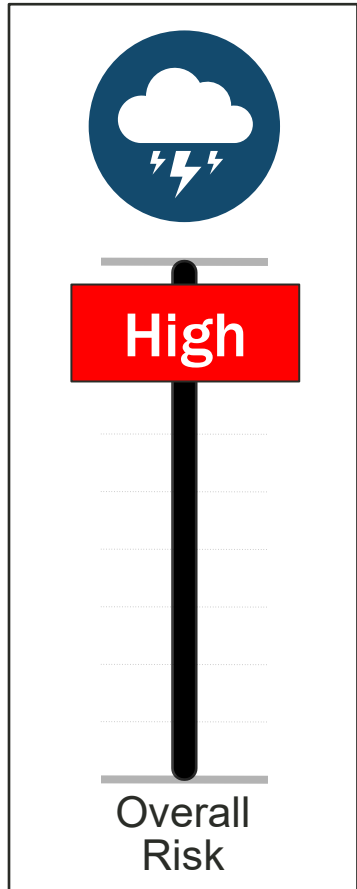
- Population and property exposed to 100-year peak wind gusts (Tropical Storm-39 to 73 mph) and 500-year (Tropical Storm speeds)
- All people and property exposed and vulnerable

- Potential Impacts

- Power outages
- Critical facility and infrastructure damage



# Countywide Preliminary Risk Ranking: Severe Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable



**Impact on Economy: Low**

\$4.8 M (less than 1%) general building stock loss for a 500-year event



**Adaptive Capacity: High for all municipalities**



**Climate Change: High for all municipalities**



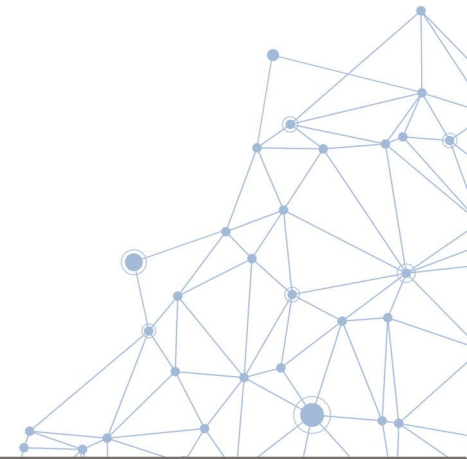


# Wildfire

- Previous Events

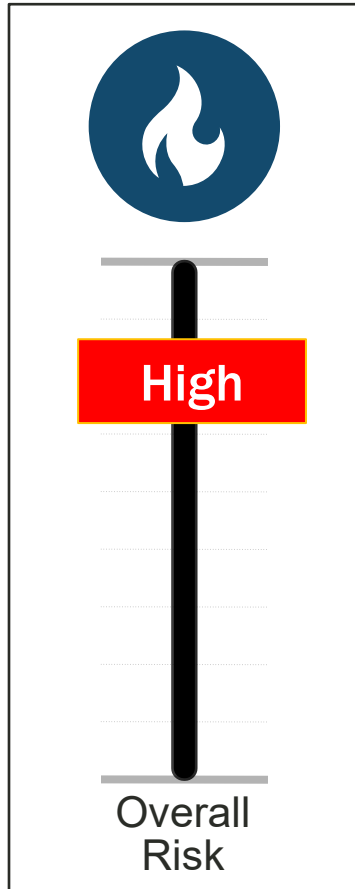
- The NYS HMP identified wildfire as a hazard of concern for New York State, however the daily probability of a wildfire event for the state is .09 percent.
- Warren County was included in one FEMA fire declaration; however, it was a manmade terrorist attack.
- According to the 2020 Warren County CEPA, the wildfire hazard is ranked medium.
- Exposure
  - People and property located in Wildfire Urban Interface WUI.

Warren County  
Ranking  
**HIGH**





# Countywide Preliminary Risk Ranking: Wildfire



**Probability of Occurrence: Occasional**



**Impact on Population: High**

44.4% of population exposed to the WUI Interface



**Impact on Property: High**

14,488 buildings (35.9 % of County total) exposed to WUI Interface



**Impact on Economy: High**

\$8.6M in RCV 35.4% of County total) exposed to WUI Interface

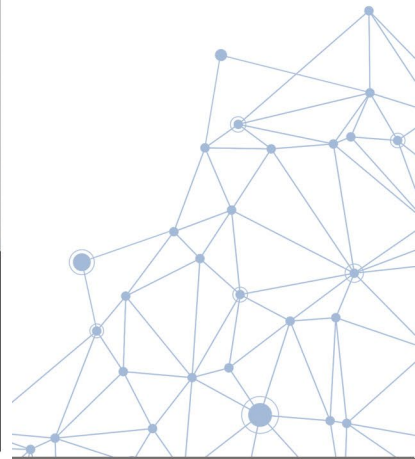
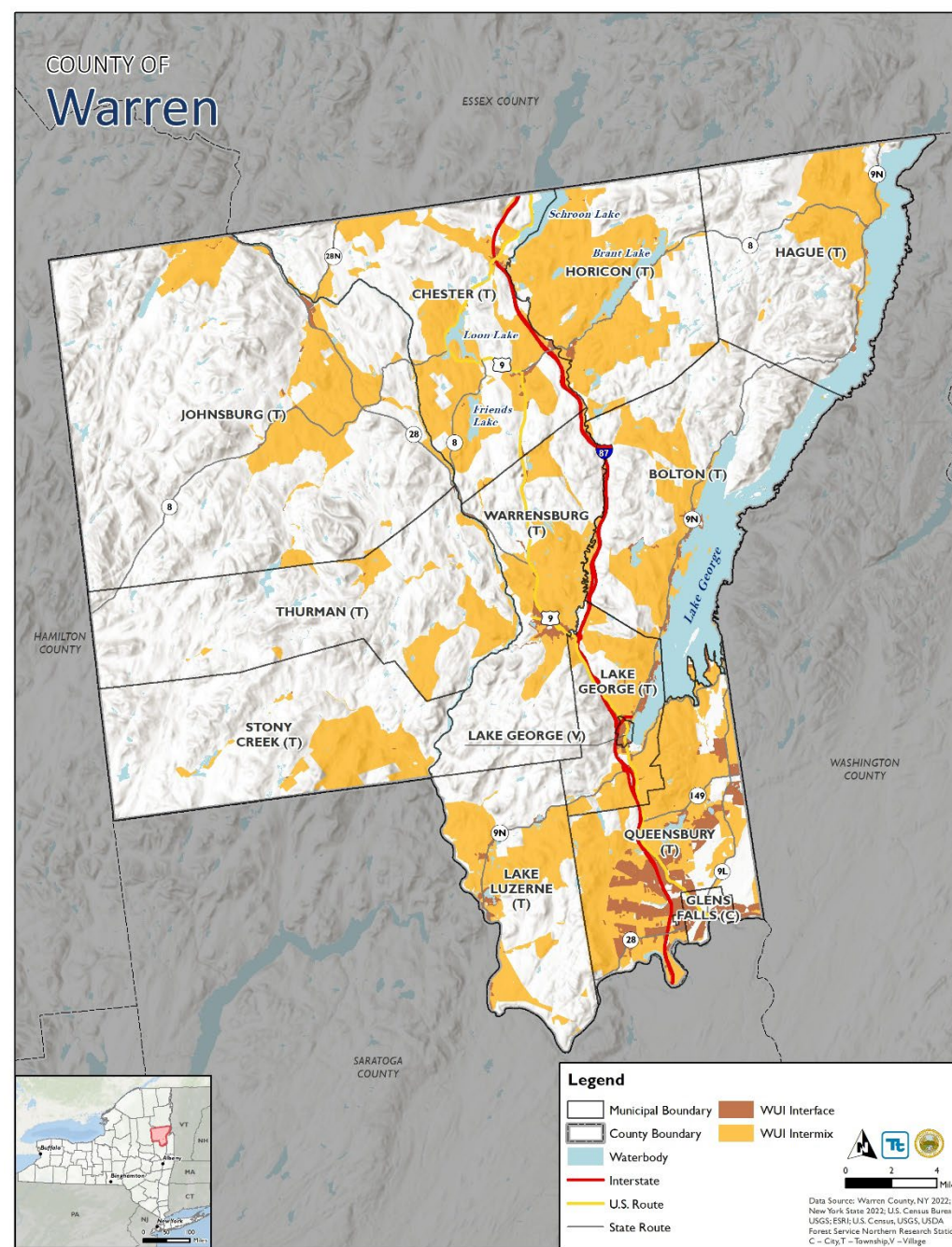
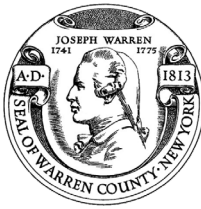


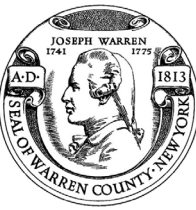
**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**

# Wildland Urban Interface/ Intermix Area

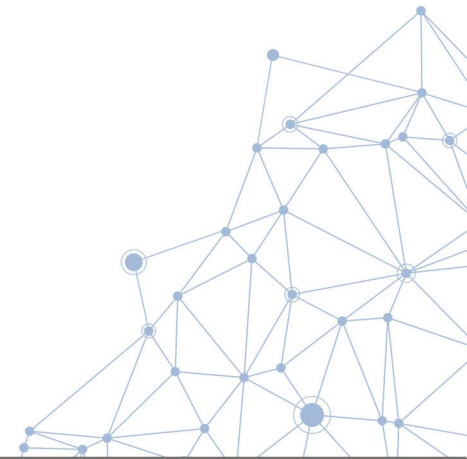


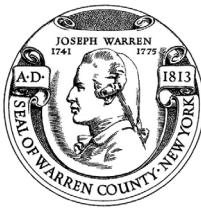


# Severe Winter Storm

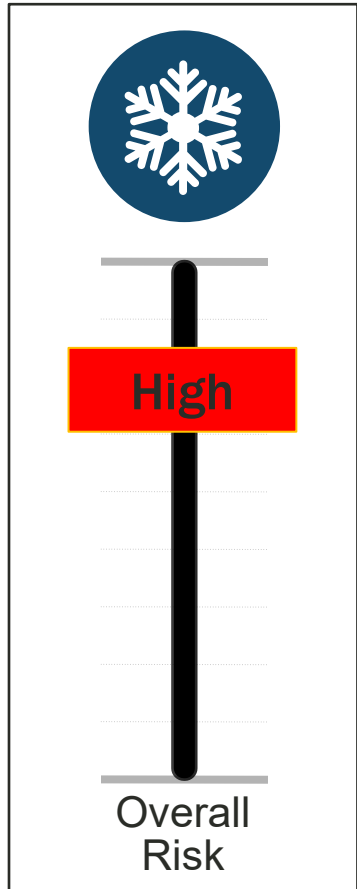
- Hazard includes heavy snow, blizzards, ice storms
- Previous Events
  - FEMA included Warren County in one winter storm-related disaster declaration
    - FEMA-EM-3107 (Severe Blizzard) – March 1993
- Exposure
  - All people and property exposed and vulnerable
- Potential Impacts
  - Power outages
  - Critical facility and infrastructure damage
  - Transportation interruptions/accidents

Warren County  
Ranking  
**HIGH**





# Countywide Preliminary Risk Ranking: Severe Winter Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable; however, impacts are minimal



**Impact on Economy: Low**

\$1.2M (5%) potential losses to building stock



**Adaptive Capacity: High for all municipalities**



**Climate Change: Medium for all municipalities**



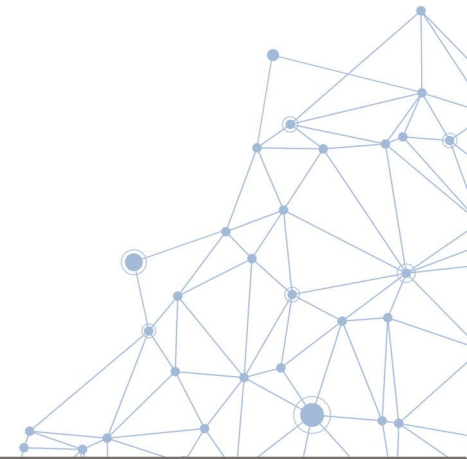


# Disease Outbreak/Pandemic

- Previous Events

- According to the 2020 Warren County CEPA, the pandemic hazard is ranked medium.
- The County has been impacted by the COVID-19 pandemic (DR-4480).
- The County has been impacted by various diseases (COVID-19, West Nile Virus, Lyme disease)
- Exposure
  - Entire County is exposed and vulnerable; however, not occurring multiple times a year with significant impacts
  - Severe events can lead to staffing and bed shortages in hospitals

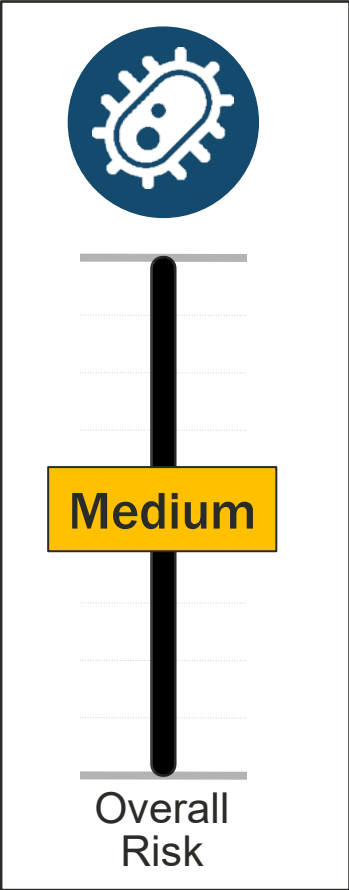
Warren County  
Ranking  
**MEDIUM**







# Countywide Preliminary Risk Ranking: Disease Outbreak



Probability of Occurrence: Occasional



Impact on Population: Medium

(14,754 County residents are 65+ years and 2,850 >5 years (26.8 % of County population)



Impact on Property: Low



Impact on Economy: Medium



Adaptive Capacity: Medium for all municipalities



Climate Change: Medium for all municipalities

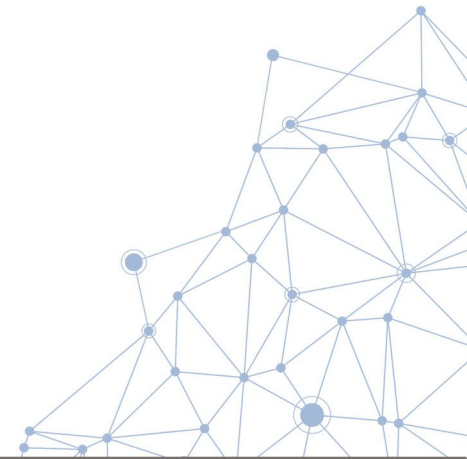




# Extreme Temperature

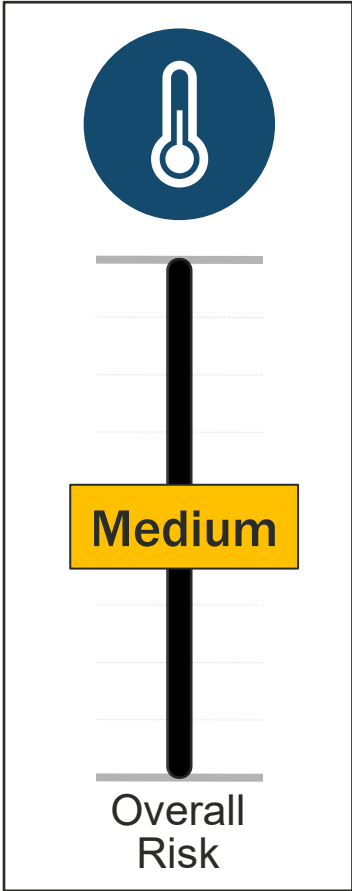
- Previous Events
  - Hot and cold events
- Exposure
  - Entire County is vulnerable
  - Increased vulnerability to populations at higher risk (65+ / <5 years old)
- Potential impacts:
  - Increased wildfire/brush fire risk
  - Impacts to agriculture/farms
  - Long-periods of warm temperatures can lead to drought conditions







Warren County  
Ranking  
**MEDIUM**

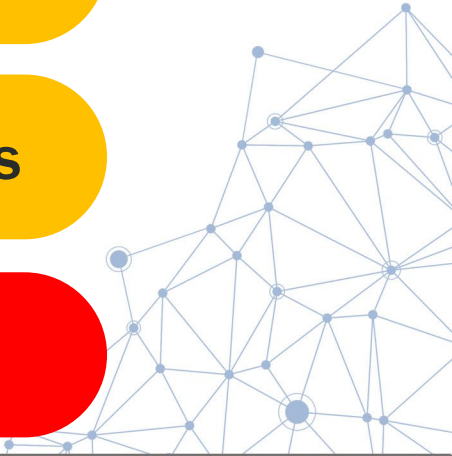




# Countywide Preliminary Risk Ranking: Extreme Temps



-  **Probability of Occurrence: Occasional**
-  **Impact on Population: Medium**  
17,604 County residents are 65+ years old or >5 years (26.8% of County population)
-  **Impact on Property: Low**
-  **Impact on Economy: Medium**
-  **Adaptive Capacity: Medium for all municipalities**
-  **Climate Change: High for all municipalities**





# Infestation and Invasive Species

- Previous Events

- Beaver Dam Failure, March 2022
- Hemlock Woolly Adelgid, Lake George, 2017
- Emerald Ash Borer (EAB), Shroon River, 2022

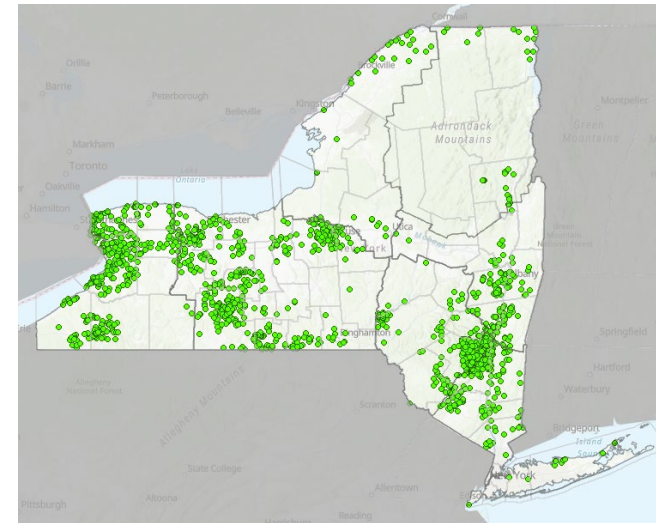
- Exposure

- Entire County is vulnerable

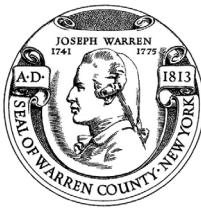
- Potential impacts:

- Soil destabilization
- Increased wildfire risk
- Impacts to agriculture/farms

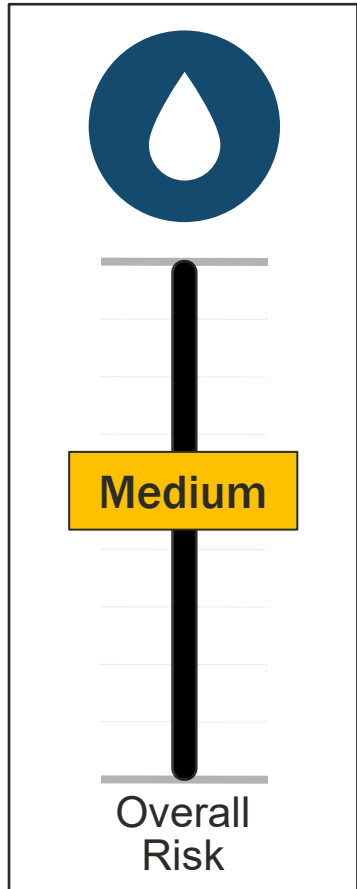
Warren County  
Ranking  
**MEDIUM**



EAB – Source: New York Invasive Species Network 2019



# Countywide Preliminary Risk Ranking: Infestation



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**



**Impact on Property: Medium**



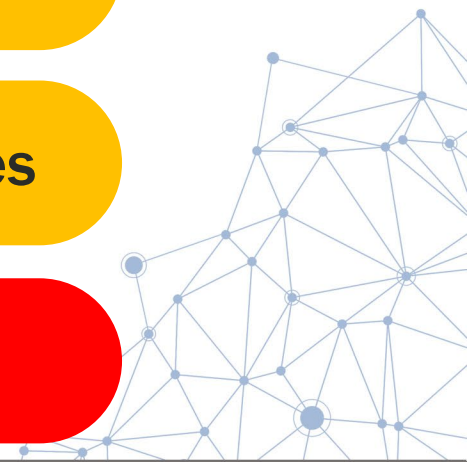
**Impact on Economy: Medium**

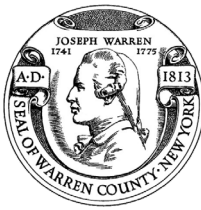


**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**





# Next Steps

- Update Risk Assessment
  - Prepare results to present to planning partners
  - Populate adjusted results municipal annexes
  - Planning Partnership Risk Assessment Meeting: February 15, 2023
  - Public Involvement Strategy – ongoing throughout the planning process
- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 15, 2023**





# Questions?



## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #3 – AGENDA**  
**MEETING DATE/TIME: February 15, 2023 – 10:00 am**



- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up



# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Planning Partnership Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	February 15, 2023, 10:00 am

## Attendees:

Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Jessica Leerkes*	Engineer, Town of Chester
Dan Barusch*	Town/Village Lake George, Planner
Dave Duell*	Town of Queensbury Highway Superintendent
Mark DeMers	Deputy Highway Superintendent
Craig Leggett*	Supervisor, Town of Chester
Debra Runyan*	Town of Thurman Supervisor
Tammie DeLorenzo*	Assistant to the County Administrator, Warren County
Michael Geraci*	Supervisor, Town of Horicon
Frank E. Thomas*	Supervisor, Town of Stoney Creek
Khristopher Kassay	Town of Lake Luzerne
Erin Putney	Town of Lake Luzerne, Zoning Officer
Laura Moore*	Planner, Town of Queensbury
Westfall, Josh*	Planner, Town of Bolton
James Hull	Code Enforcement Officer, Town of Warrensburg
Mike Dunkley	Deputy Highway Superintendent, Town of Johnsbury
Ernie Dunkley	Safety Officer, Town of Johnsbury
Keith Lanfear	Superintendent of Public Works, Village of Lake George
William Norton	Superintendent, Water & Sewer, City of Glens Falls
John Strough	Supervisor, Town of Queensbury
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to provide a project status update and the preliminary municipal level hazards of concern relative risk rankings; to prepare the Planning Partners to review municipal rankings and adjust as necessary to take into account local data or undocumented issues.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation.</li> <li>Warren County (Jim Lieberum, Warren County Soil &amp; Water Conservation District) provided an overview of the importance of the plan in identifying projects to reduce risk and encouraged municipal</li> </ul>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<p>teams supporting the plan to include public works, fire department, emergency management, and law enforcement staff to provide information on past events and problem areas to support the development mitigation projects.</p> <ul style="list-style-type: none"><li>• The process continues to be on track for plan submittal to FEMA in August 2023.</li><li>• The majority of data to support the hazard mitigation plan (HMP) development has been received, with the receipt of the National Flood Insurance Program (NFIP) data pending processing by FEMA.</li></ul>	
2	<p>In-Kind Services Tracking/Outreach</p> <ul style="list-style-type: none"><li>• Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li><li>• Warren County reminded municipalities to submit documentation of in-kind hours to support the obligations related to the planning grant funding.</li><li>• The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>• Surveys to target the public, neighboring counties, agencies, and businesses have been distributed and will be used to provide additional input to the plan to support the identification of mitigation actions.</li></ul>	<p>Action: All staff to submit documentation of hours spent supporting the mitigation planning process, including hours spent to provide data, review documents, provide updates to communities.</p>
3	<p><b>Risk Assessment Overview</b></p> <ul style="list-style-type: none"><li>• Tt reviewed the methodology to calculate the relative risk of the county's identified hazards of concern and shared the preliminary risk rankings. The ranks of Low, Medium, and High for each hazard will serve as a guide in identifying impactful mitigation actions to reduce damages and increase resilience. After review and adjustment by the core group, the preliminary county level ranks are as follows:<ul style="list-style-type: none"><li>○ Disease Outbreak (including Covid-19, influenza, and tick-borne illnesses) - <b>Medium</b></li><li>○ Earthquake - <b>Medium</b></li><li>○ Extreme Temperatures - <b>Medium</b></li><li>○ Flood - <b>High</b></li><li>○ Dams Failure - <b>High</b></li><li>○ Infestation - <b>Medium</b></li><li>○ Severe Storm (Windstorm, Thunderstorm, Hail, Tornado) – <b>High</b></li><li>○ Severe Winter Storm (Heavy Snow, Blizzards, Ice Storms) - <b>High</b></li><li>○ Wildfire - <b>High</b></li></ul></li></ul> <p>The county ranks indicate the highest municipal risk rather than the calculated regional risk. The Steering Committee was tasked to review the information provided in the presentation (see attached) to provide</p>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<p>any additional input to revisit and potentially further adjust the rankings.</p> <p>Discussion included clarification that vulnerability assessment included only projected damages to general building stock and not potential infrastructure damages which are not modeled in Hazus-MH. These damages are an example of why the rankings should be adjusted, in particular, the flood ranking as it should include the risk posed by unmapped, localized flood areas evidenced by washouts and culvert failures.</p> <p>The public sharing of dam inundation areas was also discussed and will be addressed by Emergency Services staff.</p> <ul style="list-style-type: none"><li>• Tt will distribute municipal specific rankings of the hazard of concern to the Planning Partnership the week of 2/20/23. The Planning Partnership to review and adjust ranks for the hazards of concern to incorporate local hazard history and undocumented data, if necessary.</li></ul>	
6	<p><b>Upcoming Meeting</b></p> <ul style="list-style-type: none"><li>• Mitigation Strategy Workshop – March 15, 2023.</li></ul>	
7	<p><b>Next Steps</b></p> <ul style="list-style-type: none"><li>• Update municipal level risk ranking as necessary</li><li>• Address data gaps in municipal annexes</li><li>• Continue to engage the public</li><li>• Develop mitigation strategy/actions: <b>February 2023</b></li><li>• Mitigation Strategy Workshop with FEMA and NYSDHSES – <b>March 15, 2023</b></li></ul>	
7	<p><b>Conclusion</b> - The meeting concluded at 10:55 am.</p>	





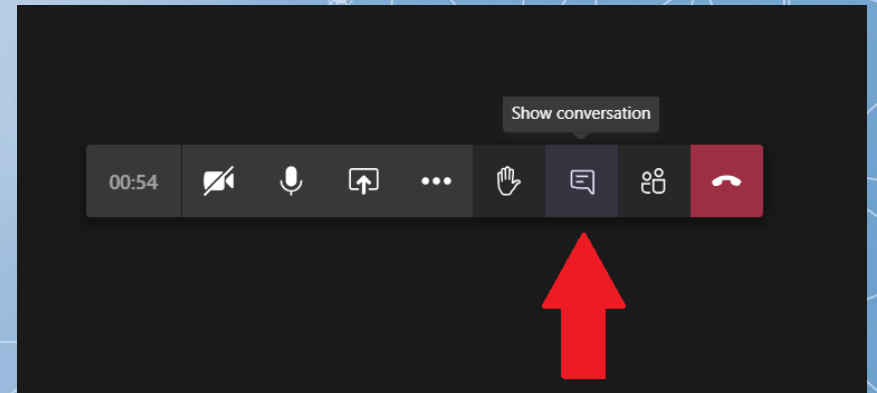
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Planning Partnership #2 Meeting | February 15, 2023 | 10:00 – 11:00 AM

## **WELCOME!**

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*



# Agenda

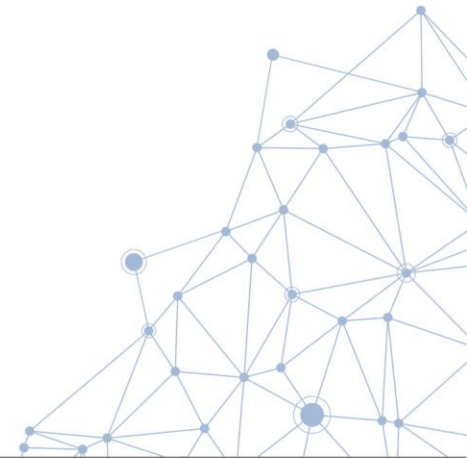
- Welcome
- Progress Report
- In-Kind Services Tracking
- Public and Stakeholder Outreach
- Risk Assessment Overview
- Next Steps/ Questions/ Wrap Up





# Project Schedule Review

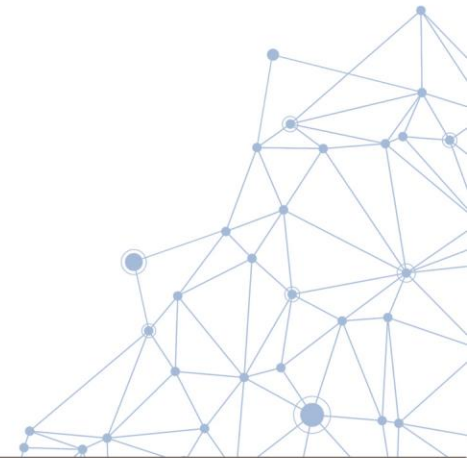
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ☐ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ☐ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ☐ | May 2023                | Review draft plan                                    |
| ☐ | July/August 2023        | Submit plan to NYSDHSES and FEMA                     |

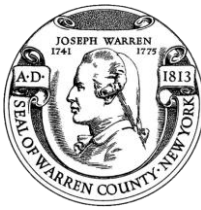




# Progress

- Requested NFIP Data – *Data pending*
- GIS Data Collection - *Complete*
- Critical Facility Survey for Municipal Input – *Complete*
- HMP website, HMP Fact Sheet, Citizen Survey, Agency Surveys - *Complete*
- County-Level/Regional Plan Collection – *Complete*
- Planning Partnership Participation – 100%






# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

# Hours







# Public and Stakeholder Outreach

- HMP website is LIVE!

<https://www.warrencountynynewyorkhmp.com>

- Social Media
- Public Survey
- Stakeholder Survey
- Neighboring County Outreach
  - Notified of planning process
  - Survey

The screenshot shows the homepage of the Warren County Hazard Mitigation Plan 2023 Update website. The header is dark blue with the Warren County seal and the title 'WARREN COUNTY HAZARD MITIGATION PLAN 2023 UPDATE'. Below the header is a navigation menu with links: Home, About, What is Mitigation, Meetings, Calendar, Explore the Plan, and Additional Information. The main content area has a white background. It starts with the title 'Warren County Hazard Mitigation Plan 2023 Update' and a welcome message. It then describes the project's goal to save lives and property by reducing hazard vulnerability. A call to action for a public survey is prominently displayed, with a button that says 'CLICK HERE TO TAKE THE PUBLIC SURVEY'. The survey is for organizations or groups that work in the county. The website also mentions that public participation and feedback are vital parts of the hazard mitigation planning process. At the bottom, there is a section for 'Events in February 2023' with a calendar view showing 'February 2023' and a 'Go' button.



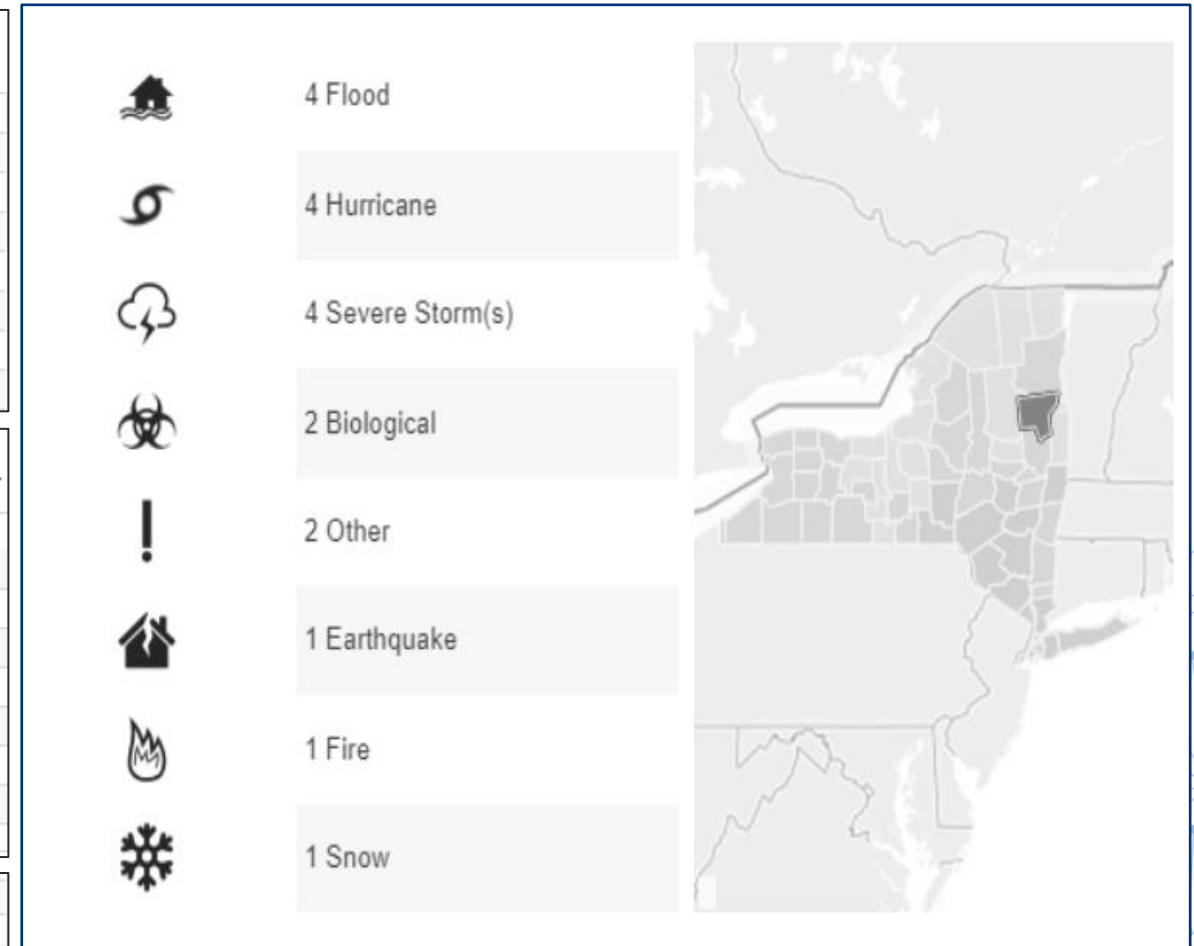


# Hazard Mitigation – What's at Risk?

- FEMA Disaster Declarations

Year of Declaration Date	Declaration Title	Disaster Number
1976	SEVERE STORMS & FLOODING	515
1993	SEVERE BLIZZARD	3107
1996	SEVERE STORMS AND FLOODING	1095
1999	HURRICANE FLOYD MAJOR DISASTER DECLARATIONS	1296
2000	WEST NILE VIRUS	3155
2001	FIRES AND EXPLOSIONS	1391
2002	EARTHQUAKE	1415
2003	POWER OUTAGE	3186

Year of Declaration Date	Declaration Title	Disaster Number
2004	SEVERE STORMS AND FLOODING	1534
		1564
2005	HURRICANE KATRINA EVACUATION	3262
2010	SEVERE STORMS AND FLOODING	1899
2011	HURRICANE IRENE	4020
	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-...	1993
2012	HURRICANE SANDY	3351
2013	SEVERE STORMS AND FLOODING	4129
2019	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	4472
2020	COVID-19	3434
	COVID-19 PANDEMIC	4480





# 2023 HMP Hazards of Concern

- Disease Outbreak
- Earthquake
- Extreme Temperatures
- Flood
- High Hazard Potential Dams
- Infestation
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire



# What is Risk?

## ✓ Hazard

- Source of potential danger or adverse condition

## ✓ Exposure

- Manmade or natural features that are exposed to the hazard

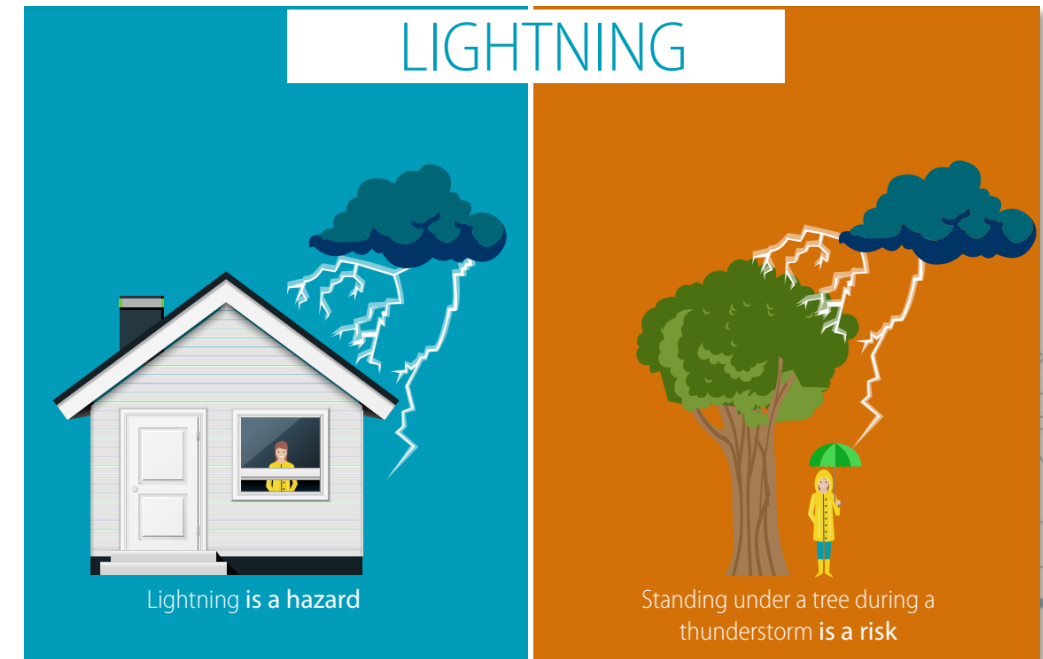
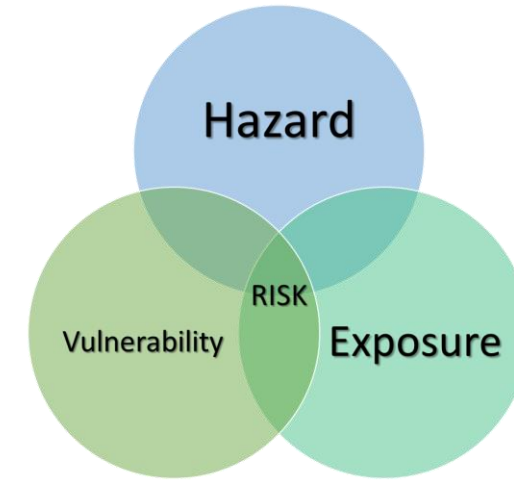
## ✓ Vulnerability

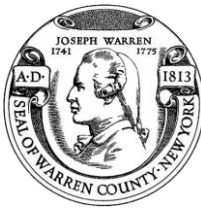
- Damage susceptibility of the exposed features

## ✓ Adaptive Capacity (or capability)

- Plans/policies
- Response/recovery
- Financial resources

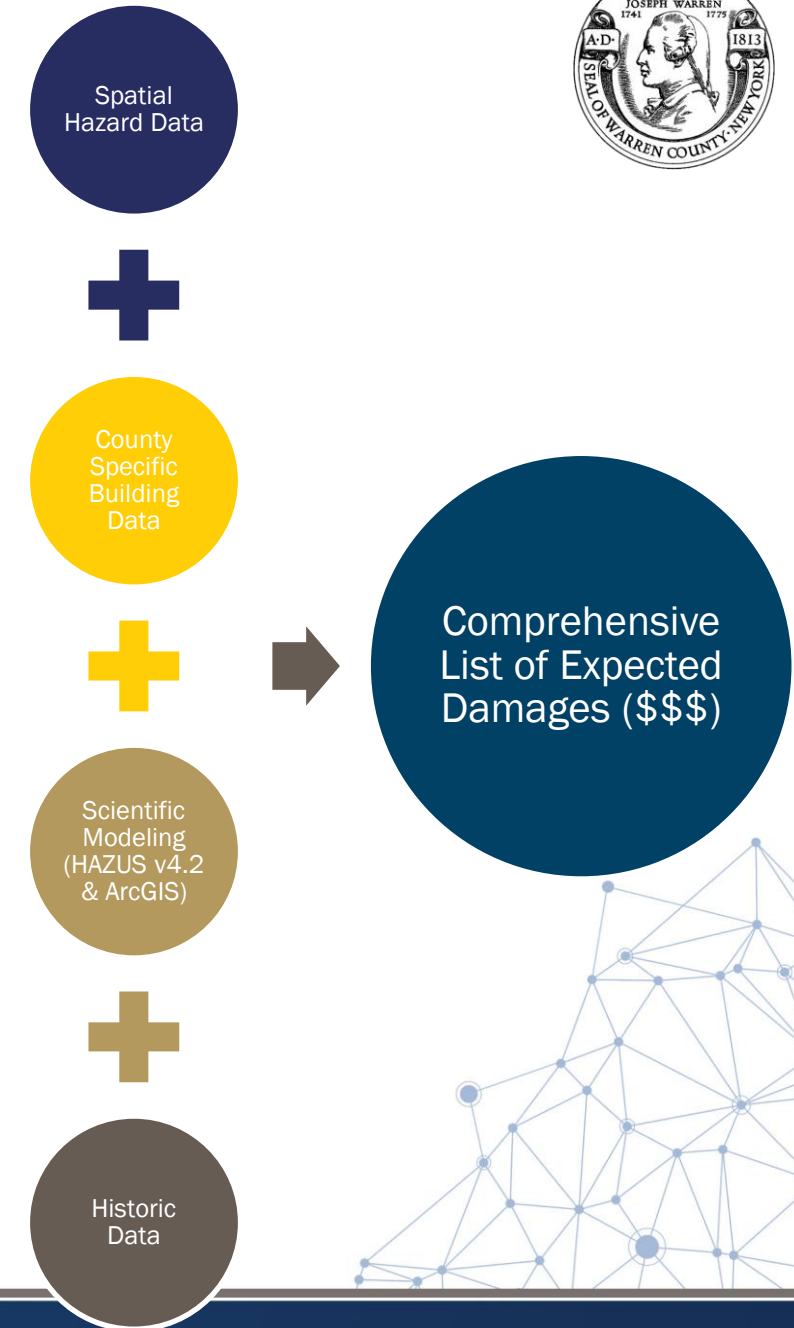
## ✓ Climate Change





# Purpose of the Risk Assessment

- To get a better understanding of the risks you face
- Initial results based on available data
- Quantitative data (population/structures exposed, structural damages within hazard zones) used when available
- Qualitative community input (such as unmapped flood areas) integrated to adjust results
- Local community input to adjust relative rankings





# Preliminary Hazard Ranking

How are the rankings calculated?

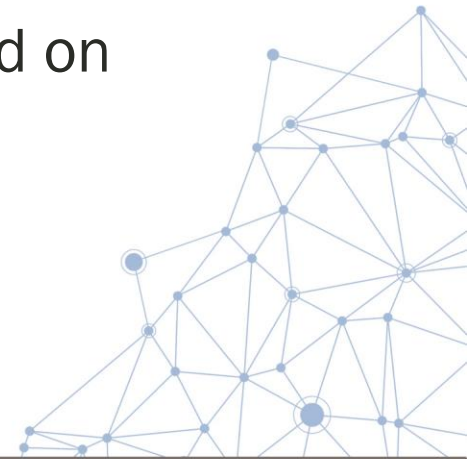




# Preliminary Hazard Ranking Methodology

Hazard Ranking is determined by quantitative and qualitative factors including:

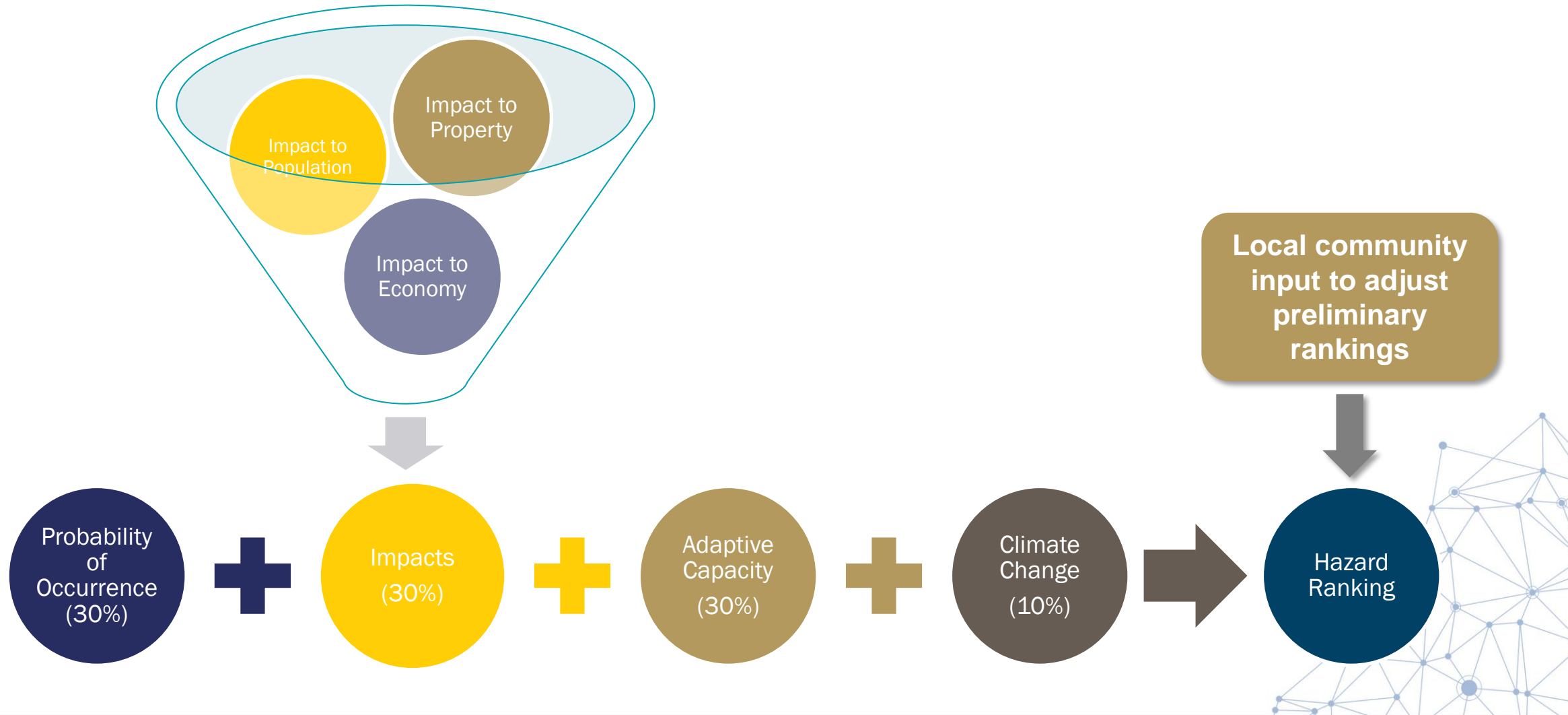
- The calculated probability of a hazard occurring based on historical data
- *Impacts to people, property, and the economy* based on GIS data and analysis of exposure.
- The degree to which climate change will affect future occurrences based on best available data.
- Capability- the ability of your community to respond to the hazard based on ordinances, mitigation strategies and procedures, and readiness.







# Hazard Ranking Formula



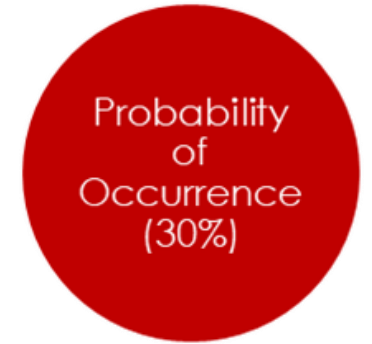
# Ranking the Hazards of Concern

What information plays a role in determining the risk rankings?

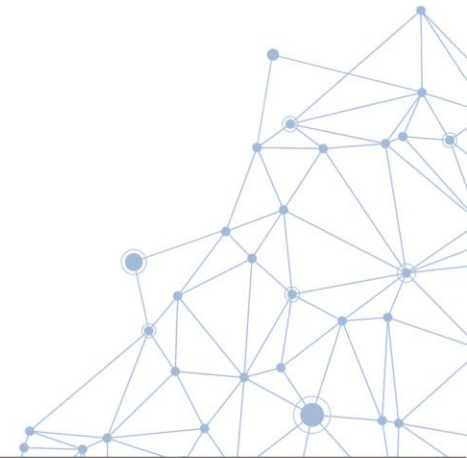


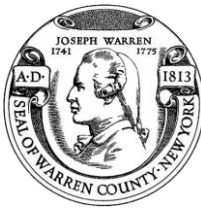


# Probability Of Occurrence



- **Unlikely**
  - Not likely to occur or less than 1% annual chance of occurring
- **Rare**
  - Between 1 and 10% annual chance of occurring
- **Occasional**
  - Between 10 and 100% annual chance of occurring
- **Frequent**
  - 100% chance occurring; occurs multiple times a year





# Hazard Ranking Input

## Impact on Population – Function of population exposed

- ✓ Low – 14% or less population exposed
- ✓ Medium – 15%-29% population exposed
- ✓ High – 30%+ population exposed

## Impact on property – Function of structures exposed

- ✓ Low – 14% or less structures exposed
- ✓ Medium – 15%-29% structures exposed
- ✓ High – 30%+ structures exposed

## Impact on economy – Function of damages to building stock

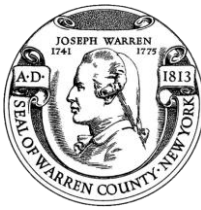
- ✓ Low – 9% or less loss estimate of total replacement cost
- ✓ Medium – 10%-19% loss estimate of total replacement cost
- ✓ High – 19%+ loss estimate of total replacement cost

## Capability – Function of level of planning, policies, enforcement

- ✓ Weak – outdated policies; limited to no deployable resources; limited capabilities to respond; long recovery
- ✓ Moderate – minimum requirements; mitigation strategies identified but not implemented; moderate county capabilities
- ✓ Strong – exceed requirements; mitigation/protective measures in place; county/jurisdiction has ability to recover quickly because resources are readily available, and capabilities are high

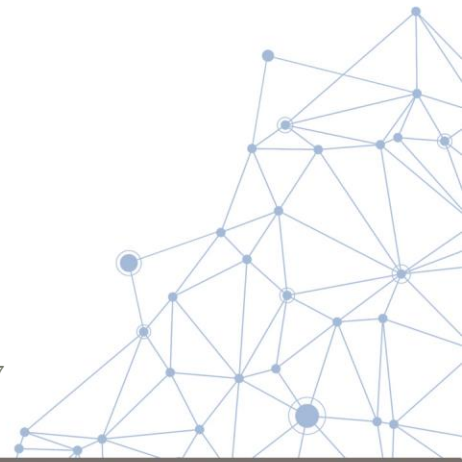
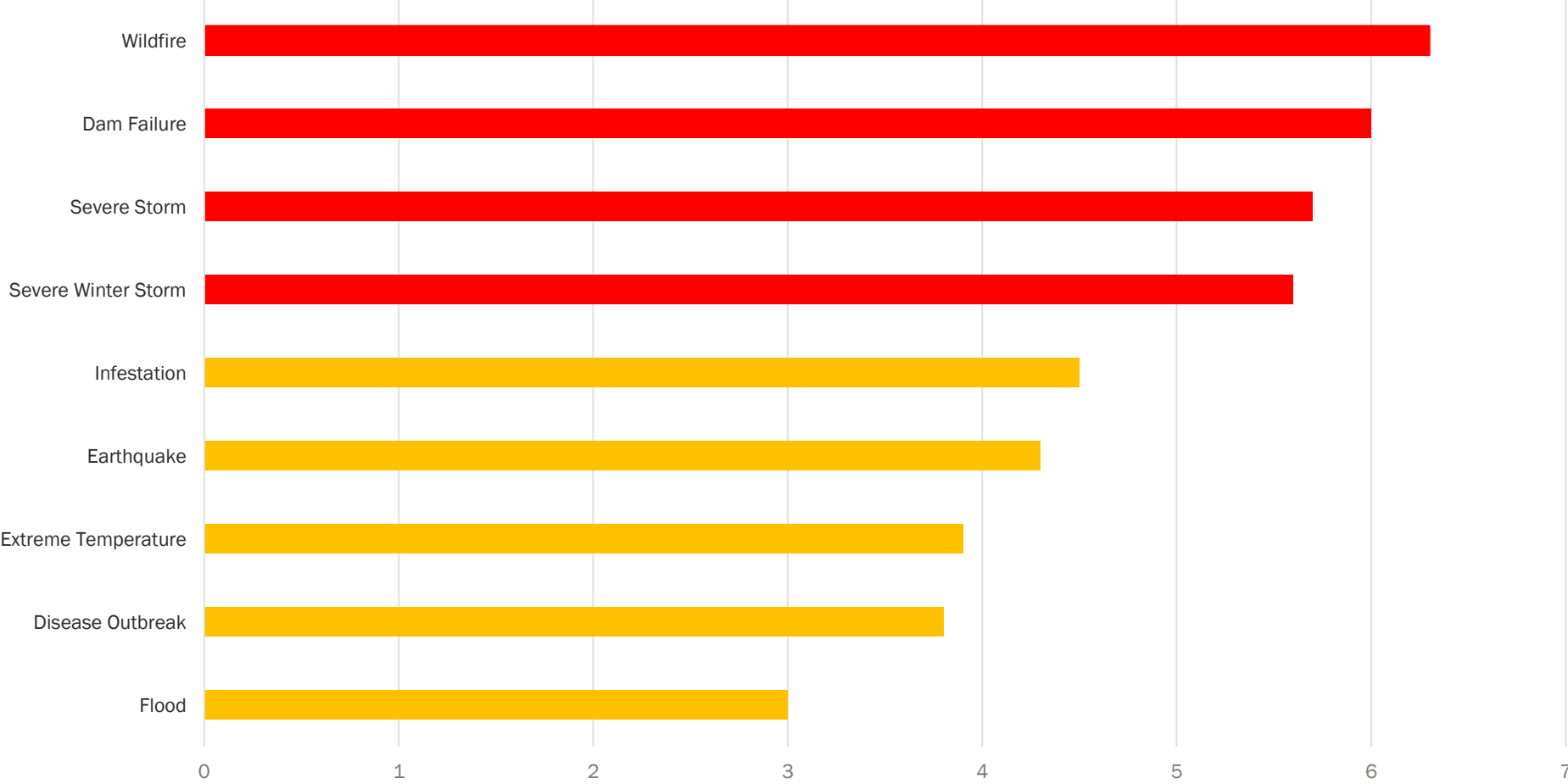
## Climate Change – Function of climate predictions

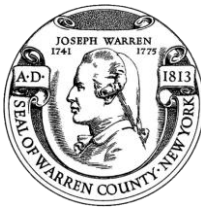
- ✓ Low - No local data is available; modeling projects are uncertain on whether there is increased future risk; confidence level is low (inconclusive evidence)
- ✓ Medium - Studies and modeling projections indicate a potential for exacerbated conditions due to climate change
- ✓ High - Studies and modeling projections indicate exacerbated conditions/increased future risk due to climate change



# Preliminary County Overall Risk Ranking

County Preliminary Relative Risk Rankings





# Preliminary County Overall Risk Ranking

Hazard of Concern	2021 CEPA Ranking	2023 Calculated Risk Ranking	2017 Risk Ranking	2023 Adjusted Ranking
Earthquake	Low	Low	High	Medium
Extreme Temperature	-	Medium	-	Medium
Flood	Very High	Low	Medium	Medium
Severe Storm	Medium	High	High	High
Severe Winter Storm	High	High	High	High
Wildfire	Medium	High	High	High
Infestation	-	Medium	Medium	Medium
Dam Failure	-	High	-	High
Disease Outbreak/Pandemic	Medium	Low	Medium	Medium

\* Potential adjustments



# Municipal Level Risk Ranking (Preliminary)



Municipality	Hazard Ranking								
	Earthquake	Extreme Temps	Flood	Severe Storm	Severe Winter Storm	Wildfire	Infestation	Dam Failure	Disease Outbreak
Bolton (T)	Low	Medium	Low	High	High	Medium	Medium	High	Medium
Chester (T)	Low	Medium	Medium	High	High	Low	Medium	High	Low
Glens Falls (C)	Medium	Medium	Low	High	High	High	Medium	Medium	Low
Hague (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Horicon (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Johnsburg (T)	Low	Medium	Low	High	High	Low	Medium	High	Medium
Lake George (T)	Low	Medium	Low	High	High	High	Medium	Medium	Medium
Lake George (V)	Low	Medium	Low	High	High	High	Medium	Low	Low
Lake Luzerne (T)	Medium	Medium	Medium	High	High	Medium	Medium	Medium	Low
Queensbury (T)	Medium	Medium	Medium	High	High	High	Medium	Medium	Low
Stony Creek (T)	Medium	Low	Low	High	High	Low	Medium	Medium	Low
Thurman (T)	Low	Medium	Low	High	High	Low	Medium	Medium	Medium
Warrensburg (T)	Medium	Medium	Medium	High	High	High	Medium	Medium	Low
Warren County	Medium	Medium	Medium	High	High	High	Medium	High	Medium

\* adjusted



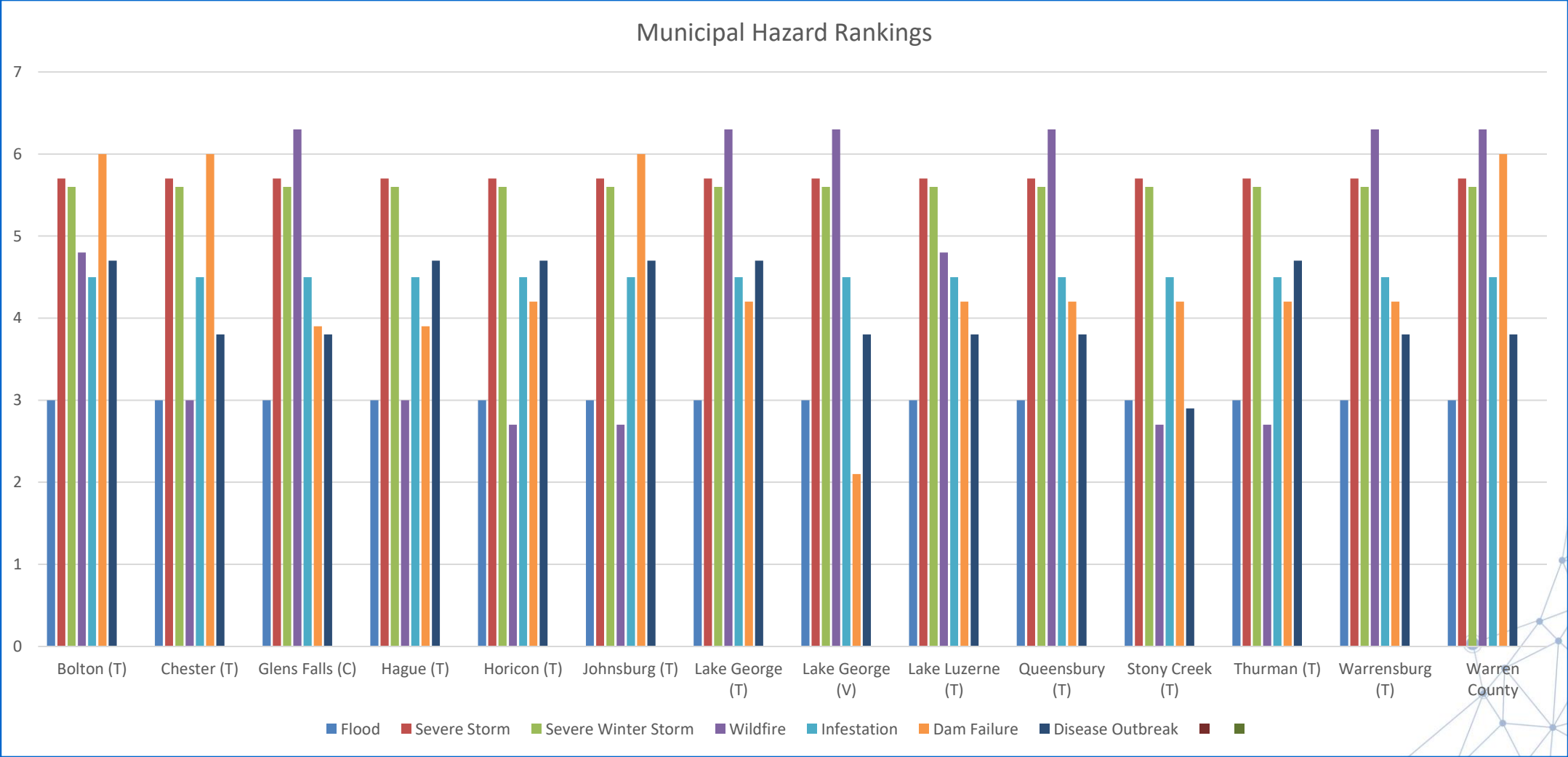
# Public Input: Flood Hazard Events

In the past 10 years, which of the following hazard events have you experienced in Warren County? Check all that apply.





# Preliminary Hazard Ranking – Warren County

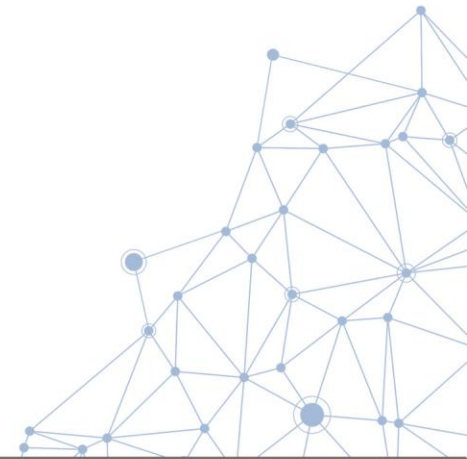




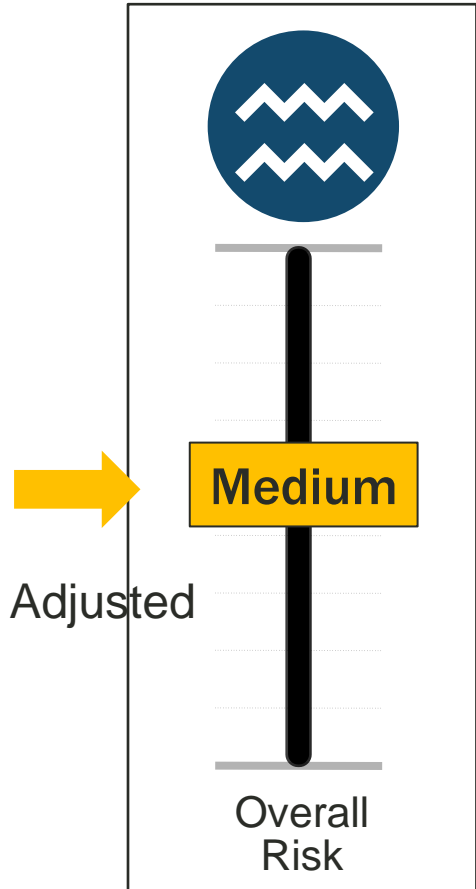
# Earthquake

- Number of Events
  - 189 earthquakes epicentered in NYS with 4 epicentered in Warren County, per 2015 NYS HMP, between 1973 and 2014
  - Faults are located within the County
  - Individual Assistance (IA) declared for EMA declarations DR-1415 in Warren County (5/16/2002)
  - Impacts
    - 2 earthquake scenarios: 500-yr and 2500-yr events
    - People and structures located in areas with soils more susceptible to earthquakes

Warren County  
Ranking  
**MEDIUM**



# Countywide Preliminary Risk Ranking: Earthquake



**Probability of Occurrence: Rare**



**Impact on Population: Medium**

65.6% of population is exposed and vulnerable (NEHRP D & E soils)



**Impact on Property: High**

48.7% of County building stock is exposed and vulnerable (NEHRP D & E soils)



**Impact on Economy: Low**

\$1.9% of Structural Replacement Cost Value damaged



**Adaptive Capacity: Medium for all municipalities**

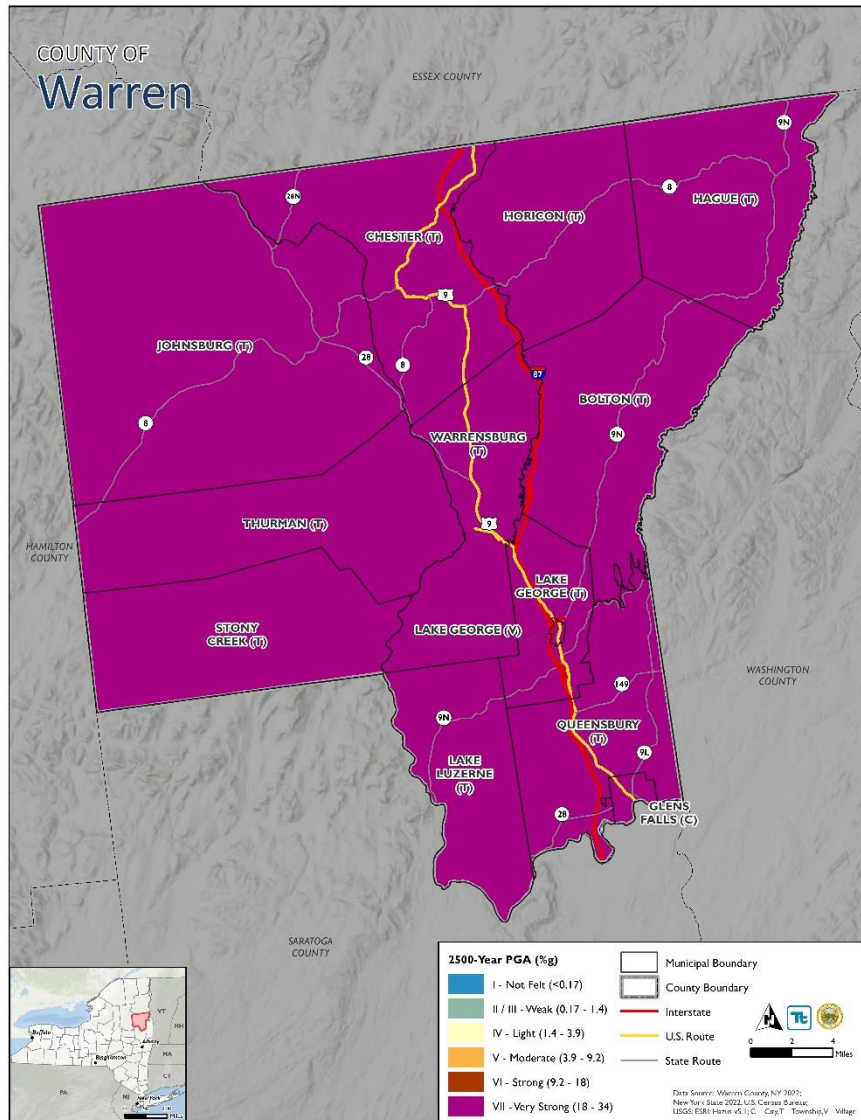


**Climate Change: Low for all municipalities**

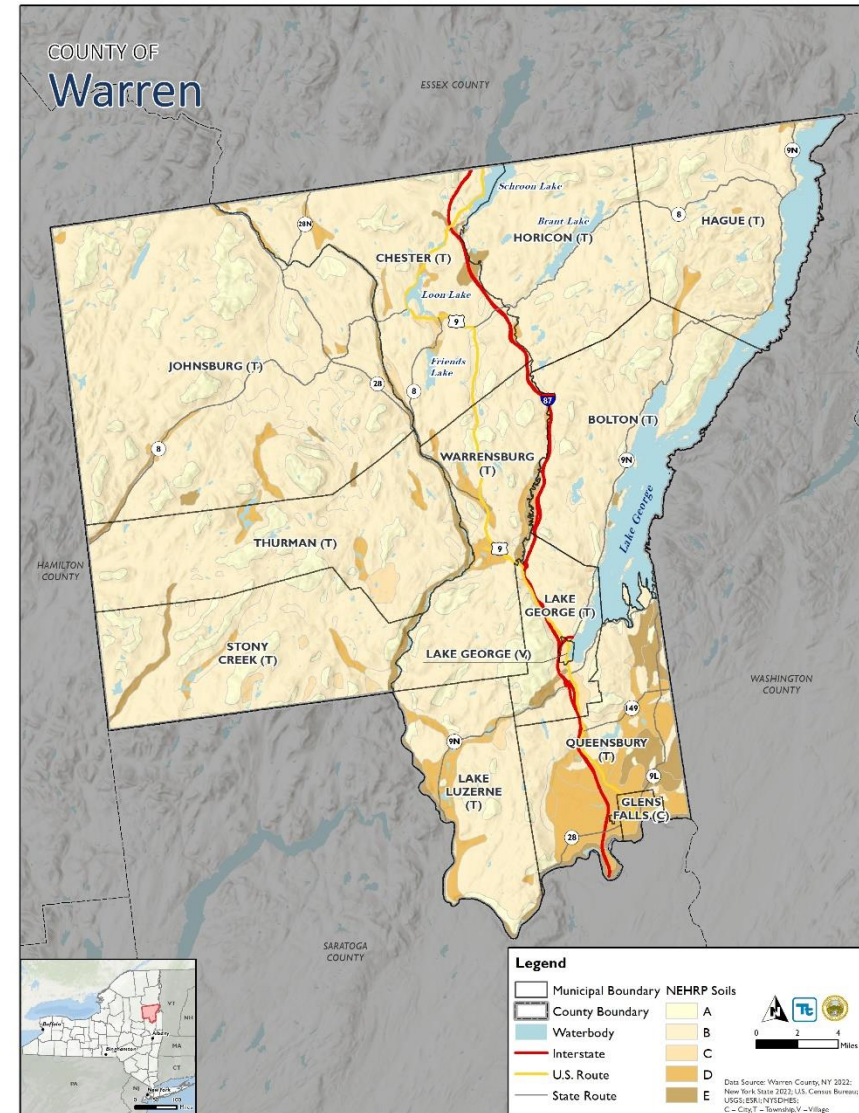




# Peak Ground Acceleration



# NEHRP Soil Class



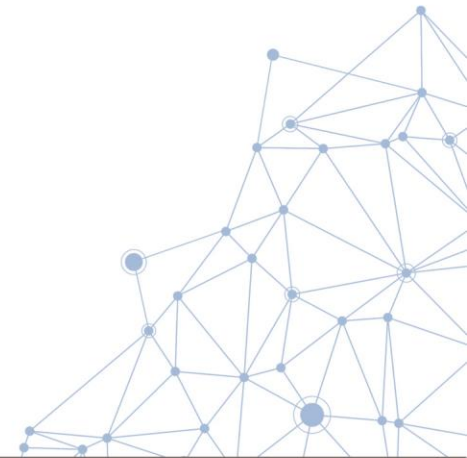




# Flood

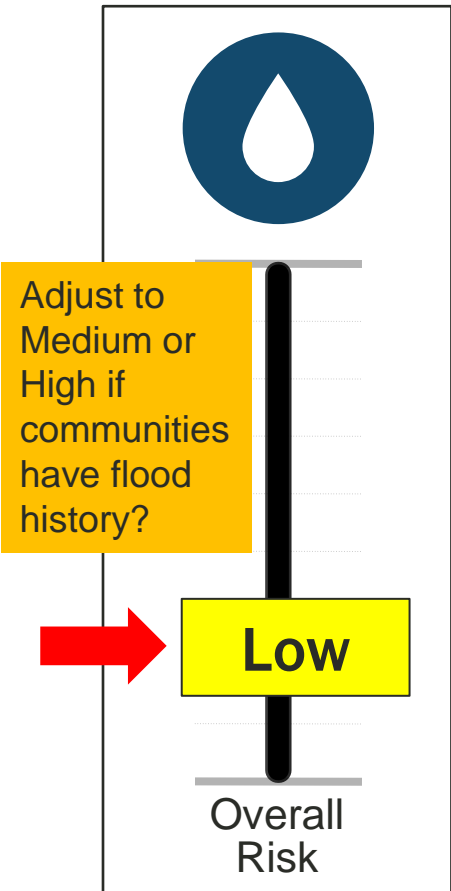
- Previous Events
  - Riverine, flash, and stormwater flooding
    - Between 2000 and 2022, Warren County included in 2 FEMA flood-related declarations.
      - FEMA-DR-1993 (Severe Storms Tornadoes, Winds and Flooding) – April 26, 2011
      - FEMA-DR-4129 (Severe Storms, and Flooding) – July 2013
- Exposure
  - People and property located in the 1% annual chance flood area

Warren County  
Ranking  
**LOW**





# Countywide Preliminary Risk Ranking: Flood



**Probability of Occurrence: Occasional or Frequent**



**Impact on Population: Low**

1,385 people (2.1% of the population) in the SFHA



**Impact on Property: Low**

1,252 buildings (3.1% of total County buildings) in the SFHA; 1 Rep Loss



**Impact on Economy: Low**

\$721 M Replacement Cost Value (RCV) (3% of County total RCV) located in the Regulatory Floodplain



**Adaptive Capacity: Medium for all municipalities**



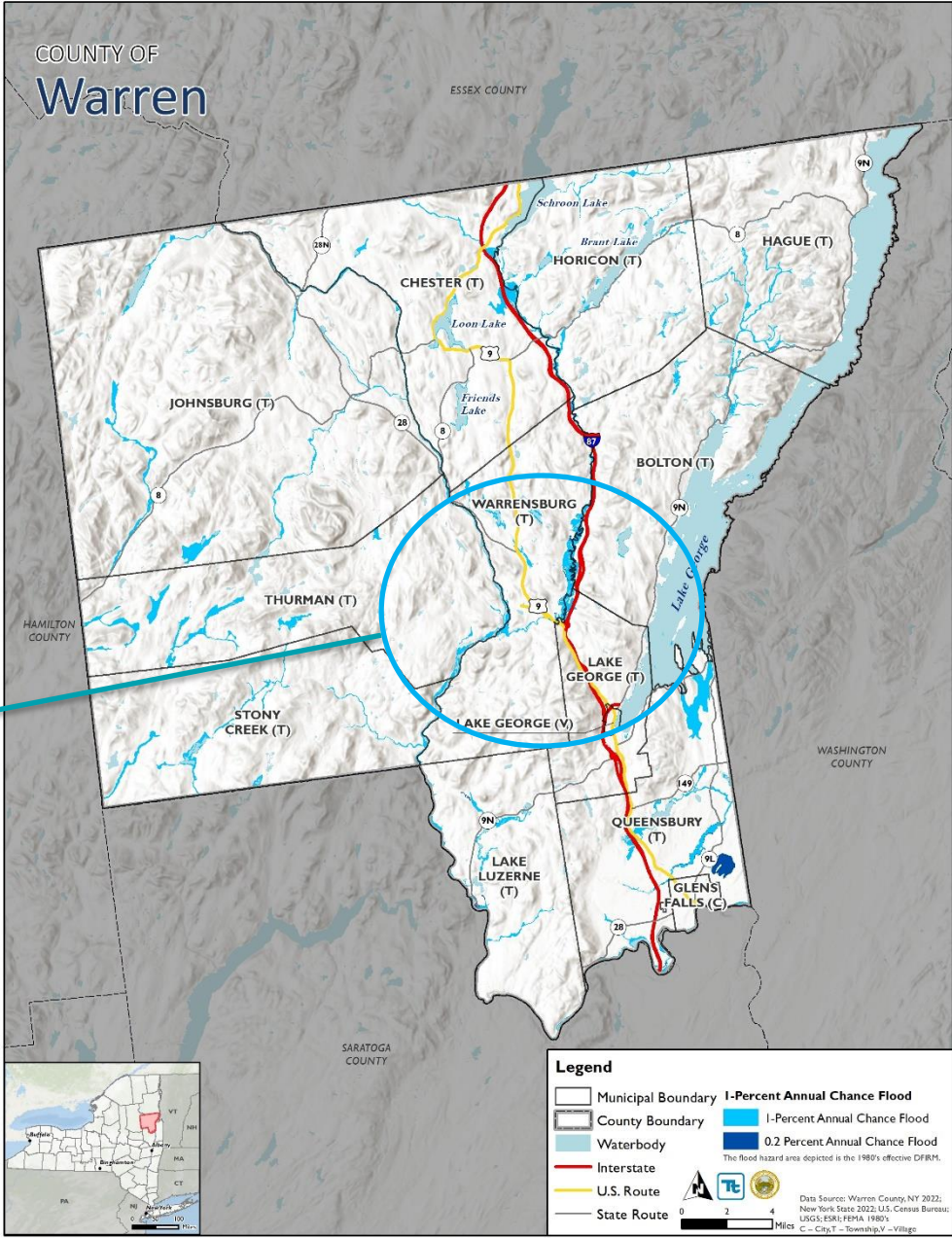
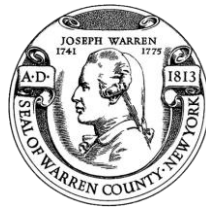
**Climate Change: High for all municipalities**



# Preliminary 2023 vs. 2017 Rankings (Flood)

Warren County Municipality	IMPACT ON POPULATION	IMPACT ON PROPERTY	IMPACT ON ECONOMY	RISK RANKING	RISK RANKING
	Percent Population Exposed (1-Percent Annual Chance Flood Event)	Percent of Total Buildings in 1% Flood Area	Percent of Total GBS RCV	2023 Estimated	2017
Bolton (T)	6.5%	6.6%	6.5%	Low	Medium
Chester (T)	8.5%	8.2%	7.6%	Low	Medium
Glens Falls (C)	0.0%	0.1%	1.0%	Low	Medium
Hague (T)	7.1%	7.0%	3.2%	Low	Medium
Horicon (T)	5.2%	5.2%	7.2%	Low	Medium
Johnsburg (T)	2.3%	2.4%	3.8%	Low	Medium
Lake George (T)	2.6%	2.5%	1.0%	Low	Medium
Lake George (V)	0.2%	1.1%	1.2%	Low	Medium
Lake Luzerne (T)	6.5%	6.3%	3.6%	Low	Medium
Queensbury (T)	1.3%	1.4%	2.1%	Low	Medium
Stony Creek (T)	3.0%	3.2%	3.8%	Low	Medium
Thurman (T)	0.7%	0.8%	0.5%	Low	Medium
Warrensburg (T)	3.7%	3.9%	2.7%	Low	High
Warren County	2.1%	3.1%	3.0%	Low	Medium

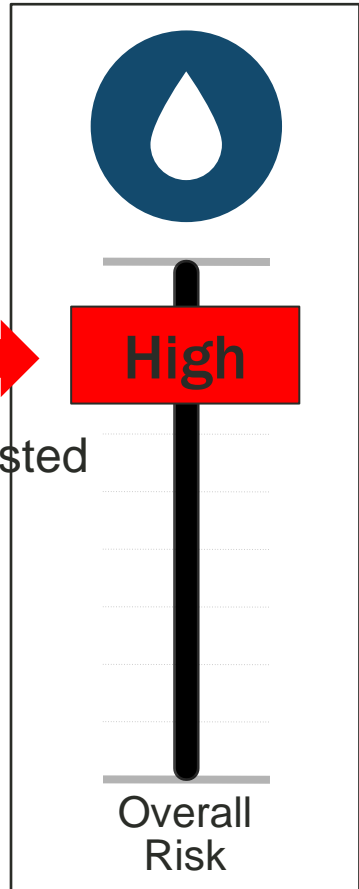
# Flood Hazard Areas







# Countywide Preliminary Risk Ranking: Dam Failure



**Probability of Occurrence: Rare**



**Impact on Population: High**

216 people in inundation areas



**Impact on Property: High**

254 buildings (0.6% of total County buildings) located in inundation areas



**Impact on Economy: High**

\$130 M Replacement Cost Value (RCV) (0.5% of County total RCV) in inundation areas

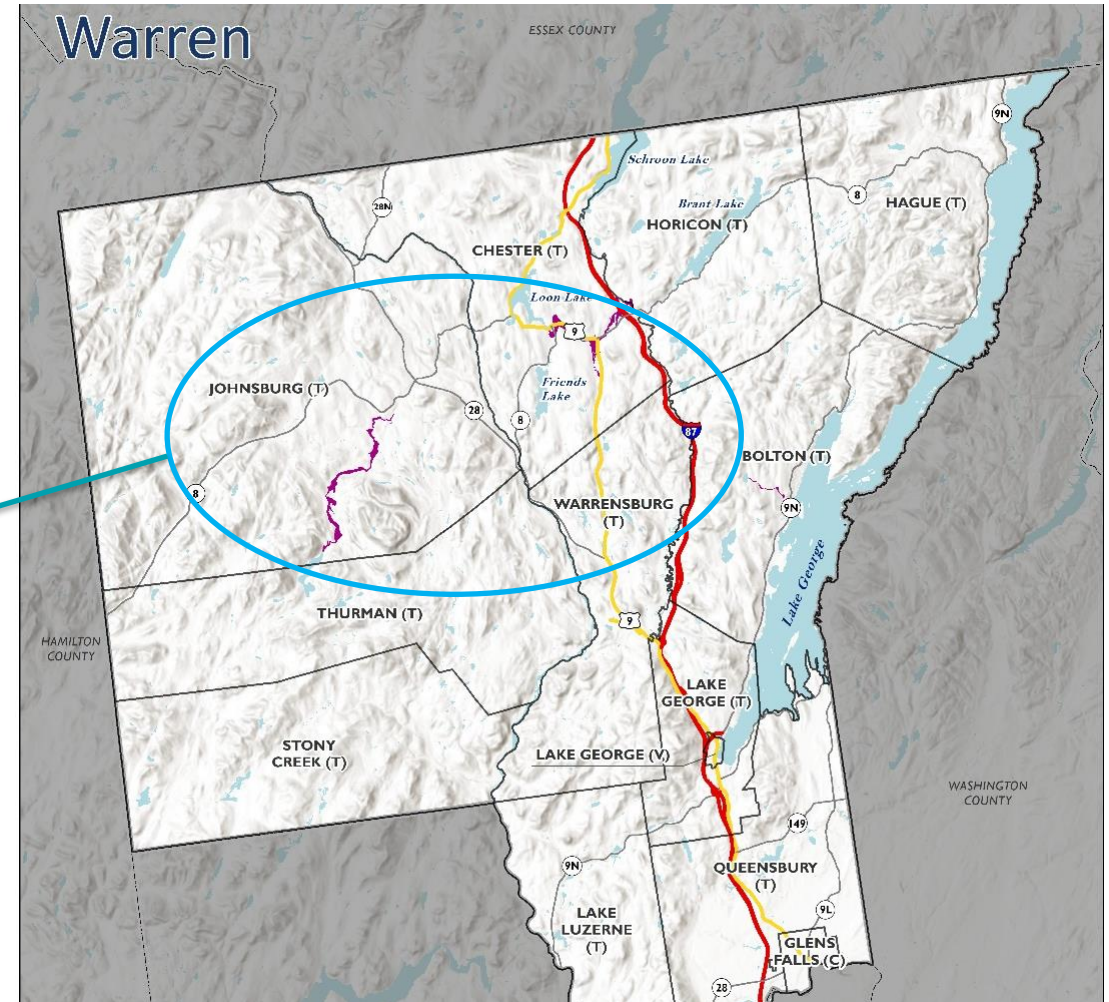


**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**

# Dam Inundation Areas







# Severe Storm

- Previous Events

- Hazard includes lightning, hail, and windstorms
- FEMA-DR-4472 (Severe Storms, Straight-line Winds and Flooding) – October 2019
- Between 2016 and 2022, Warren County was included in 1 FEMA severe storm-related declaration.
- According to the NOAA, 5 tornado events took place in Warren County between 1950 and 2022

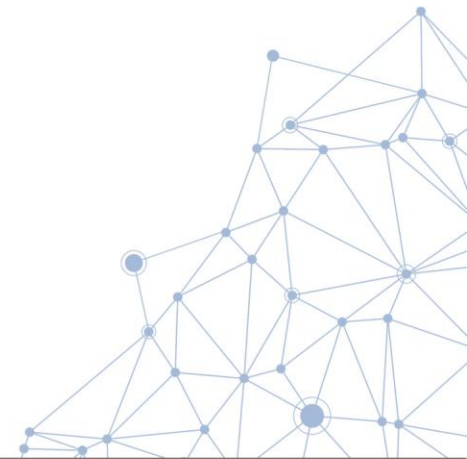
Warren County  
Ranking  
**HIGH**

- Exposure

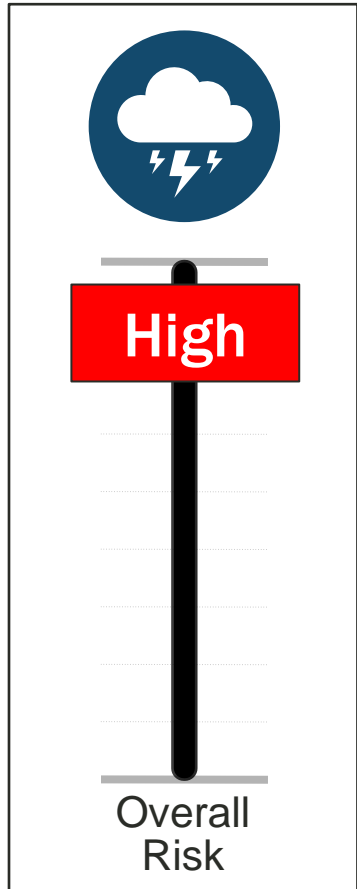
- Population and property exposed to 100-year peak wind gusts (Tropical Storm-39 to 73 mph) and 500-year (Tropical Storm speeds)
- All people and property exposed and vulnerable

- Potential Impacts

- Power outages
- Critical facility and infrastructure damage



# Countywide Preliminary Risk Ranking: Severe Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable



**Impact on Economy: Low**

\$4.8 M (less than 1%) general building stock loss for a 500-year event



**Adaptive Capacity: High for all municipalities**



**Climate Change: High for all municipalities**

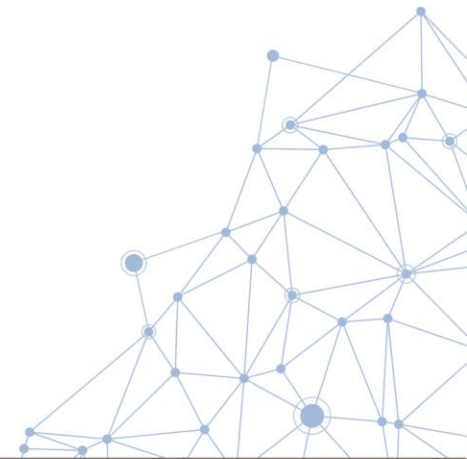


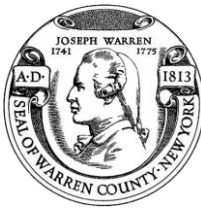
# Wildfire

- Previous Events

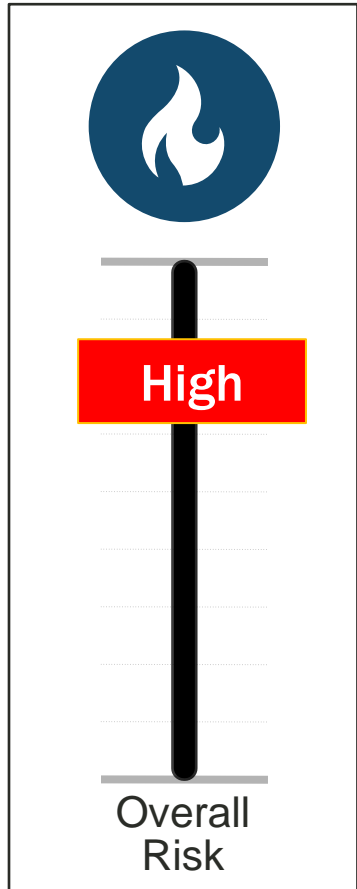
- The NYS HMP identified wildfire as a hazard of concern for New York State, however the daily probability of a wildfire event for the state is .09 percent.
- Warren County was included in one FEMA fire declaration; however, it was a manmade terrorist attack.
- According to the 2020 Warren County CEPA, the wildfire hazard is ranked medium.
- Exposure
  - People and property located in Wildfire Urban Interface WUI.

Warren County  
Ranking  
**HIGH**





# Countywide Preliminary Risk Ranking: Wildfire



**Probability of Occurrence: Occasional**



**Impact on Population: High**

44.4% of population exposed to the WUI Interface



**Impact on Property: High**

14,488 buildings (35.9 % of County total) exposed to WUI Interface



**Impact on Economy: High**

\$8.6M in RCV 35.4% of County total) exposed to WUI Interface

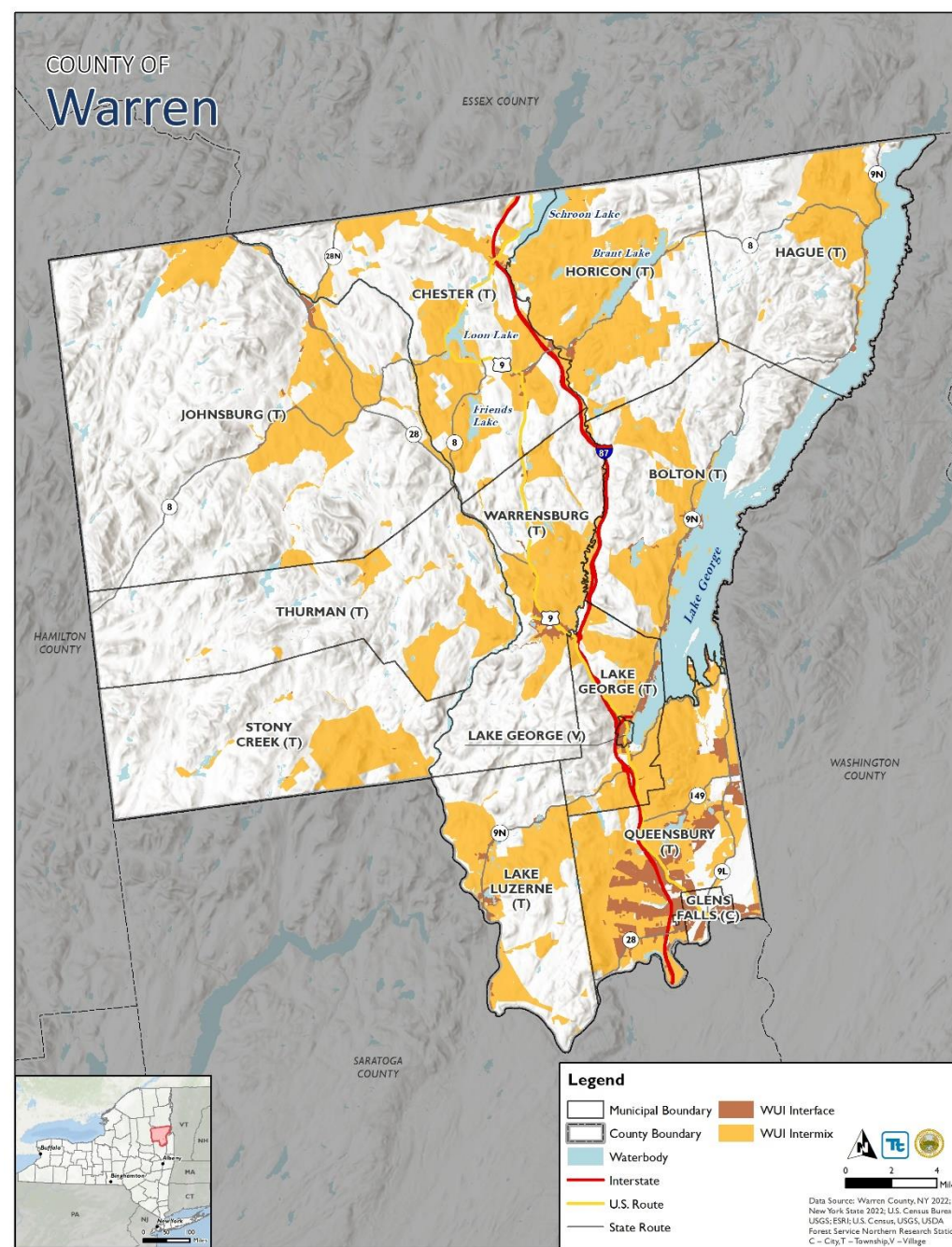
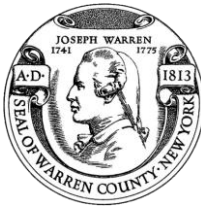


**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**

# Wildland Urban Interface/ Intermix Area



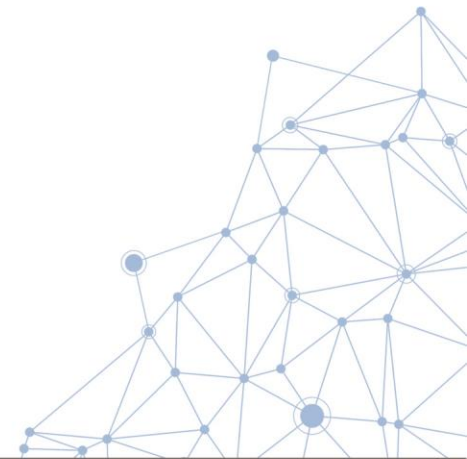




# Severe Winter Storm

- Hazard includes heavy snow, blizzards, ice storms
- Previous Events
  - FEMA included Warren County in one winter storm-related disaster declaration
    - FEMA-EM-3107 (Severe Blizzard) – March 1993
- Exposure
  - All people and property exposed and vulnerable
- Potential Impacts
  - Power outages
  - Critical facility and infrastructure damage
  - Transportation interruptions/accidents

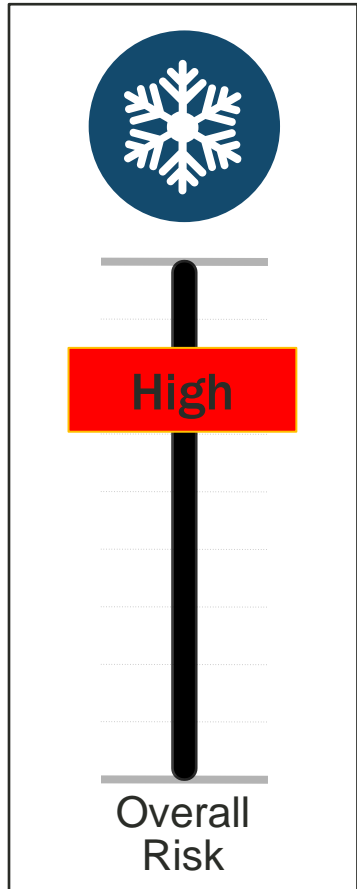
Warren County  
Ranking  
**HIGH**







# Countywide Preliminary Risk Ranking: Severe Winter Storm



**Probability of Occurrence: Frequent**



**Impact on Population: High**

Entire population is exposed and vulnerable



**Impact on Property: High**

Entire building stock is exposed and vulnerable; however, impacts are minimal



**Impact on Economy: Low**

\$1.2M (5%) potential losses to building stock



**Adaptive Capacity: High for all municipalities**



**Climate Change: Medium for all municipalities**

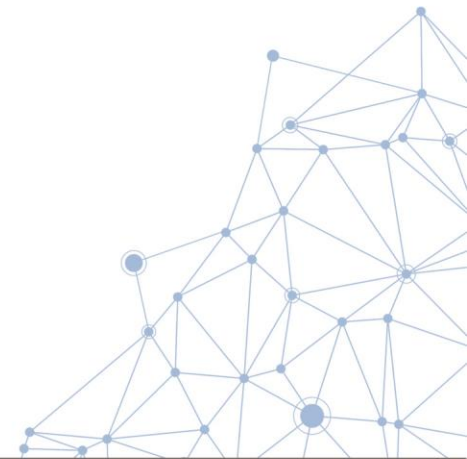


# Disease Outbreak/Pandemic

- Previous Events

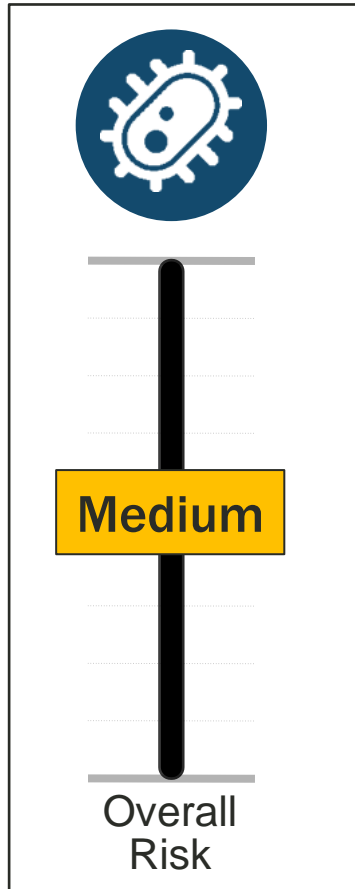
- According to the 2020 Warren County CEPA, the pandemic hazard is ranked medium.
- The County has been impacted by the COVID-19 pandemic (DR-4480).
- The County has been impacted by various diseases (COVID-19, West Nile Virus, Lyme disease)
- Exposure
  - Entire County is exposed and vulnerable; however, not occurring multiple times a year with significant impacts
  - Severe events can lead to staffing and bed shortages in hospitals

Warren County  
Ranking  
**MEDIUM**





# Countywide Preliminary Risk Ranking: Disease Outbreak



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**

(14,754 County residents are 65+ years and 2,850 >5 years (26.8 % of County population))



**Impact on Property: Low**



**Impact on Economy: Medium**



**Adaptive Capacity: Medium for all municipalities**



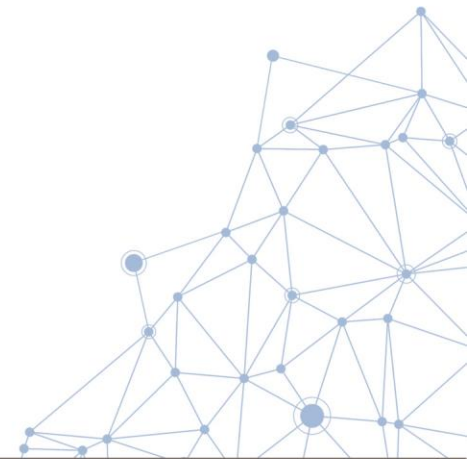
**Climate Change: Medium for all municipalities**

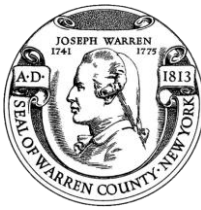


# Extreme Temperature

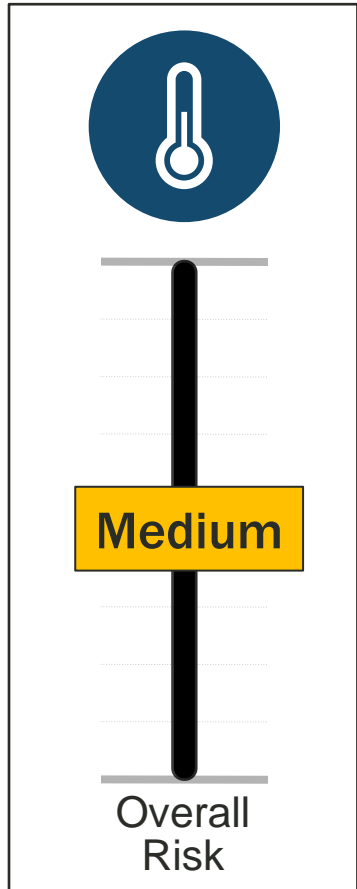
- Previous Events
  - Hot and cold events
- Exposure
  - Entire County is vulnerable
  - Increased vulnerability to populations at higher risk (65+ / <5 years old)
- Potential impacts:
  - Increased wildfire/brush fire risk
  - Impacts to agriculture/farms
  - Long-periods of warm temperatures can lead to drought conditions

Warren County  
Ranking  
**MEDIUM**





# Countywide Preliminary Risk Ranking: Extreme Temps



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**

17,604 County residents are 65+ years old or >5 years (26.8% of County population)



**Impact on Property: Low**



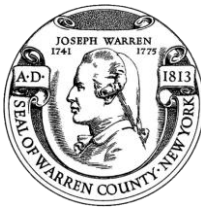
**Impact on Economy: Medium**



**Adaptive Capacity: Medium for all municipalities**



**Climate Change: High for all municipalities**



# Infestation and Invasive Species

- Previous Events

- Beaver Dam Failure, March 2022
- Hemlock Woolly Adelgid, Lake George, 2017
- Emerald Ash Borer (EAB), Shroon River, 2022

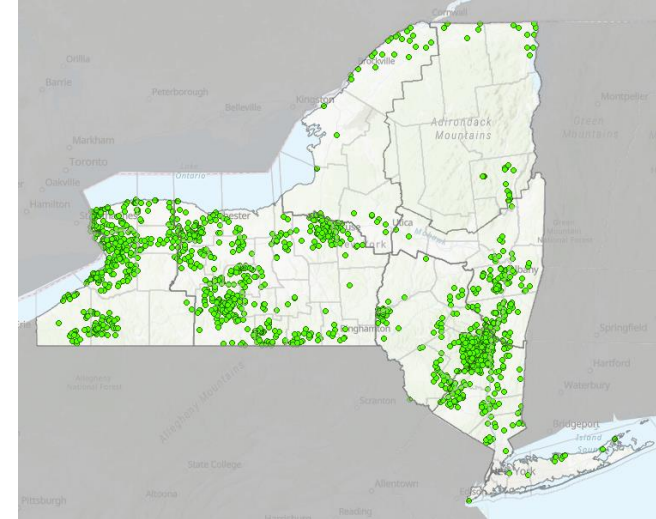
Warren County  
Ranking  
**MEDIUM**

- Exposure

- Entire County is vulnerable

- Potential impacts:

- Soil destabilization
- Increased wildfire risk
- Impacts to agriculture/farms

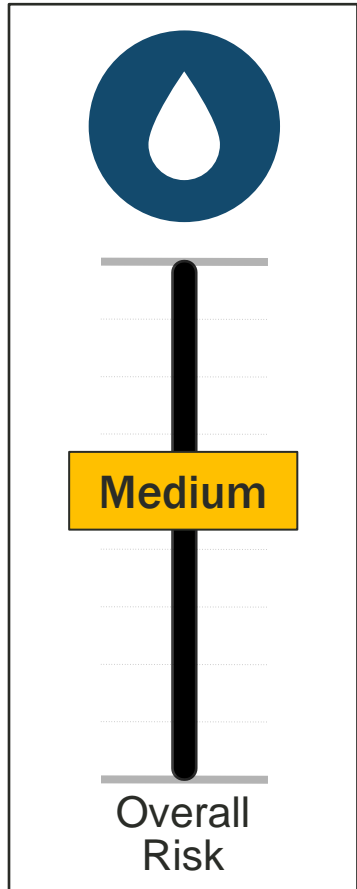


EAB – Source: New York Invasive Species Network 2019





# Countywide Preliminary Risk Ranking: Infestation



**Probability of Occurrence: Occasional**



**Impact on Population: Medium**



**Impact on Property: Medium**



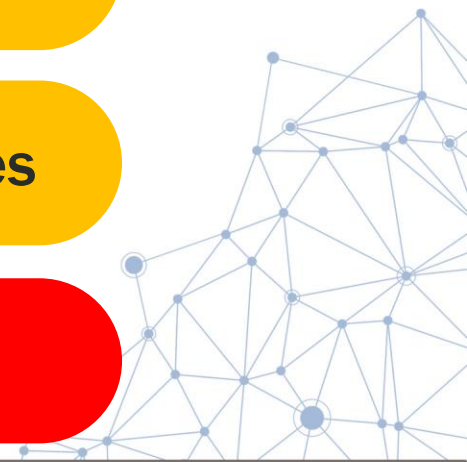
**Impact on Economy: Medium**



**Adaptive Capacity: Medium for all municipalities**



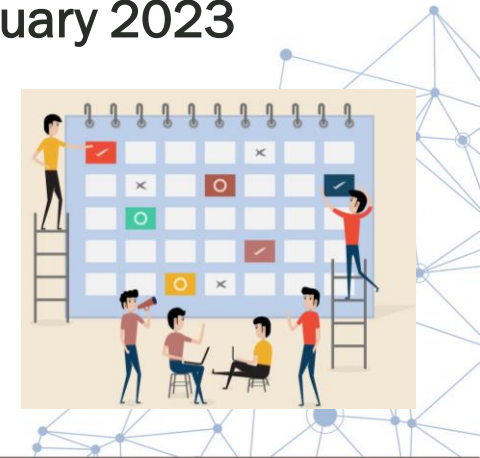
**Climate Change: High for all municipalities**





# Next Steps

- Update Risk Assessment
  - Prepare results to present to planning partners
  - Populate adjusted results municipal annexes
  - Planning Partnership Risk Assessment Meeting: February 15, 2023
  - Public Involvement Strategy – ongoing throughout the planning process
- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 15, 2023**



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!



**WARREN COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee #4 – AGENDA**  
**MEETING DATE/TIME: March 8, 2023 – 10:00 am**



- Welcome
- Progress Report
- Pending Action Items
- Public and Stakeholder Outreach
- Other Items
- Next Steps/ Questions/ Wrap Up





# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	March 8, 2023, 10:00 am

## Attendees:

Ann Marie Mason	Director, Warren County Office of Emergency Services (OES)
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Sara Frankenfeld	GIS Coordinator, Warren County
Laura Moore	Town of Queensbury, Land Use Planner
Dan Barusch	Town/Village Lake George, Planner
Ashley Rivers	Warren County Office of Emergency Services
John Gibb	Contingency Management Consulting Group
Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Don Lehman	Warren County Public Information Officer
Sandra LeBarron	Director of Environmental Health and Safety, Finch Pruyn
Cynthia Addonizio-Bianco	Tetra Tech, Inc.

**Agenda Summary:** Purpose to provide a brief progress report and address pending action items.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items and she provided a progress update as summarized in the attached PowerPoint presentation.</li> <li>The process continues to be on track for plan submittal to FEMA in August 2023.</li> <li>The majority of data to support the hazard mitigation plan (HMP) development has been received, with the receipt of the National Flood Insurance Program (NFIP) data pending processing by FEMA.</li> </ul>	
2	<b>Progress Report</b> <ul style="list-style-type: none"> <li>Risk Ranking worksheets due today. To date the communities that have submitted include: <ul style="list-style-type: none"> <li>Town of Lake George</li> <li>Village of Lake George <ul style="list-style-type: none"> <li>Town of Hague - In progress</li> <li>Town of Lake Luzerne - Requested clarification and noted worksheets in progress</li> <li>Town of Chester - Complete and awaiting supervisor review</li> <li>Town of Queensbury - In progress</li> </ul> </li> </ul> </li> </ul>	





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>• Assistance offered to the following communities via Mr. John Gibb:<ul style="list-style-type: none"><li>○ Town of Chester</li><li>○ Town of Glens Falls</li><li>○ Town of Horicon</li><li>○ Town of Johnsburg</li><li>○ Town of Queensbury.</li></ul></li></ul>	
3	<p><b>Pending Action Items</b></p> <ul style="list-style-type: none"><li>• High Hazard Dam Information. Warren County OEs confirmed that dam inundation areas will be deemed confidential information and available at the Office of Emergency Services on an as needed basis.</li><li>• Collection of localized flooding information. Warren County SWCD, OES, and GIS affirmed that the collection of localized flood impacts will be a collaborative mitigation action to be included in the hazard mitigation plan.</li><li>• Receipt of National Flood Insurance information. Warren County OES confirmed that FEMA has provided this information. This will be incorporated into the hazard mitigation plan to assist with the identification of mitigation strategies.</li><li>• Surveys targeting the public, neighboring counties, agencies, and businesses are live and will be used to provide additional input to the plan to support the identification of mitigation actions. Warren County PIO will perform another media blast to support a robust response to the surveys. To date sixty-nine responses have been received for the public survey. This represents an 87% completion rate with an average of 9 minutes to complete the survey. Respondents identified thirty areas vulnerable to hazard of concern.</li><li>• Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li><li>• The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>• Tetra Tech reminded steering committee members to access the project OneDrive site to review draft plan sections and to provide input, as necessary.</li></ul>	<p>Warren County Public Information Officer to</p> <p>Tetra Tech to analyze NFIP data for inclusion in the HMP process and plan.</p>
6	<p><b>Upcoming Meeting</b></p> <ul style="list-style-type: none"><li>• Mitigation Strategy Workshop – March 15, 2023 (<i>Optional for Steering Committee members not affiliated with a municipality.</i>)</li></ul>	



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



7	<b>Next Steps</b> <ul style="list-style-type: none"><li>• Populate adjusted results municipal annexes</li><li>• Planning Partnership Risk Assessment Meeting: February 15, 2023</li><li>• Continue to engage the public</li><li>• Work with the municipalities to develop mitigation strategy/actions</li><li>• Mitigation Strategy Workshop with FEMA and NYSDHSES – <b>March 15, 2023</b></li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 10:38 am.	



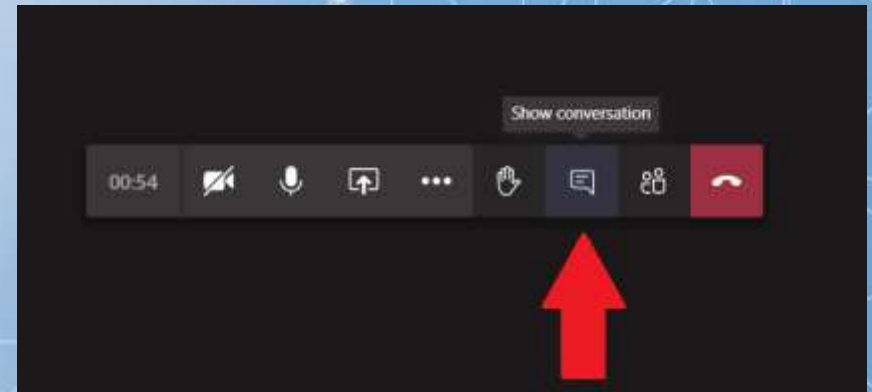
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Steering Committee #4 Meeting | March 8, 2023 | 10:00 – 11:00 AM

## **WELCOME!**

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*



# Agenda

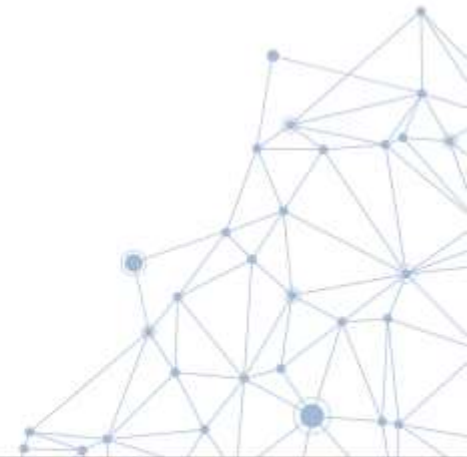
- Welcome
- Progress Report
- Pending Action Items
- Public and Stakeholder Outreach
- Other Items
- Next Steps/ Questions/ Wrap Up





# Project Schedule Review

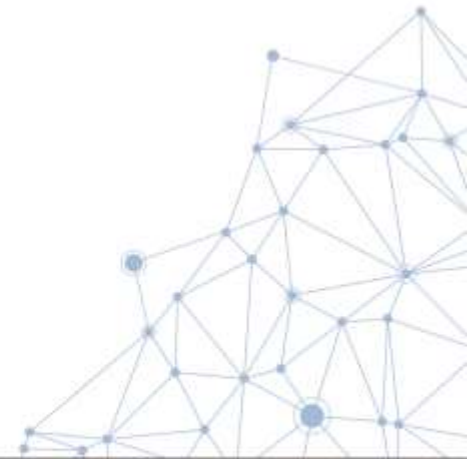
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ✓ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ☐ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ☐ | May 2023                | Review draft plan                                    |
| ☐ | July/August 2023        | Submit plan to NYSDHSES and FEMA                     |





# Progress Report

- Requested NFIP Data – *Data pending*
- Risk Ranking Worksheets due today.
  - To date these communities have submitted:
    - Town of Lake George
    - Village of Lake George
    - Town of Hague
  - In progress
    - Town of Lake Luzerne asked for clarification and noted worksheets in progress
    - Town of Chester, complete and awaiting supervisor review
    - Town of Queensbury, in progress
  - Assistance offered via Mr. John Gibb to:
    - Town of Chester
    - Town of Glens Falls
    - Town of Horicon
    - Town of Johnsbury
    - Town of Queensbury

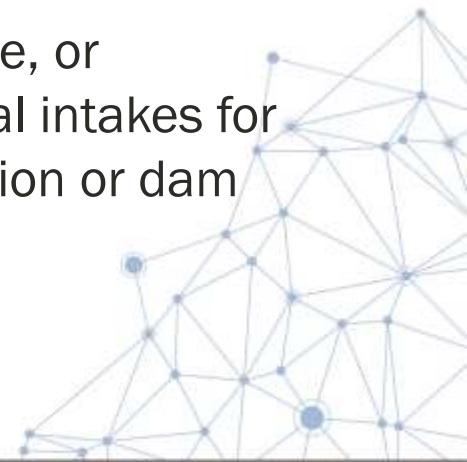






# Pending Action Items

- Pending action items:
  - Emergency Services to review the level of detail provided to the public regarding dam inundation areas.
  - Emergency Services, County GIS and SWCD to consider options to collect and map localized flood areas.
  - NFIP information receipt
- Information Request
  - Input regarding history of damages for disease outbreak, extreme heat, dam failure, or infestation hazards is requested. Examples include data/metrics regarding hospital intakes for related illnesses, impacts on workforce, or localized information regarding infestation or dam failure.

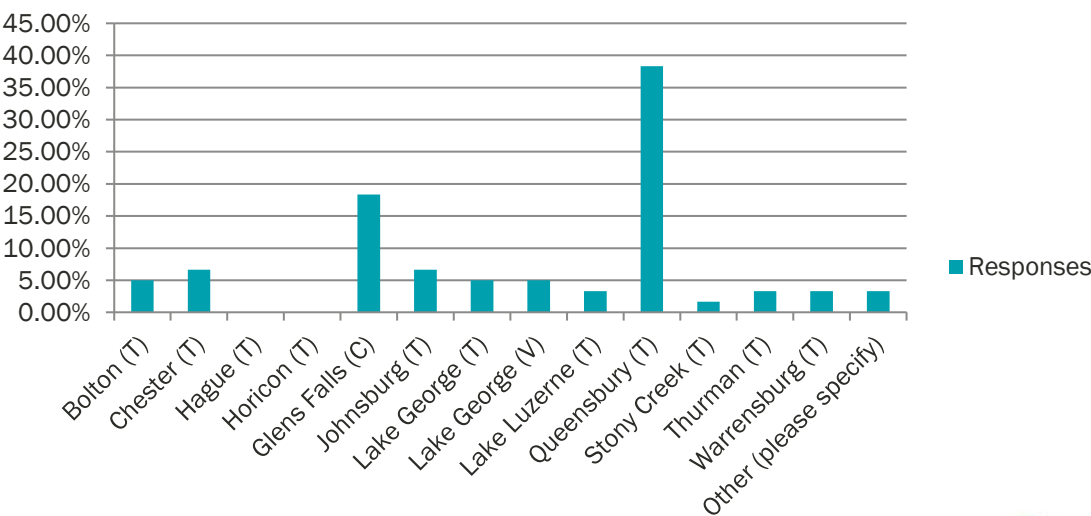




# Public Survey Results

- 69 Responses
- 87% Completion Rate
- 9 Minutes to Complete (Avg)
- ~30 identified vulnerable areas/items

Please indicate the municipality in which you live:



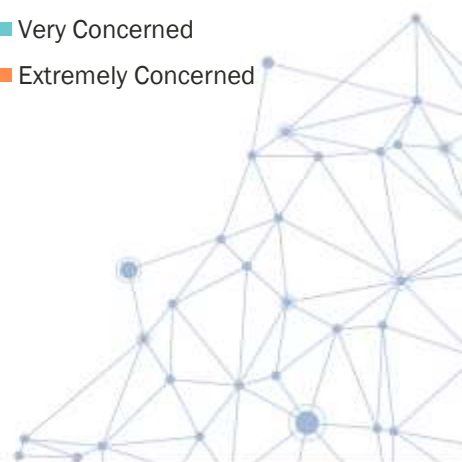
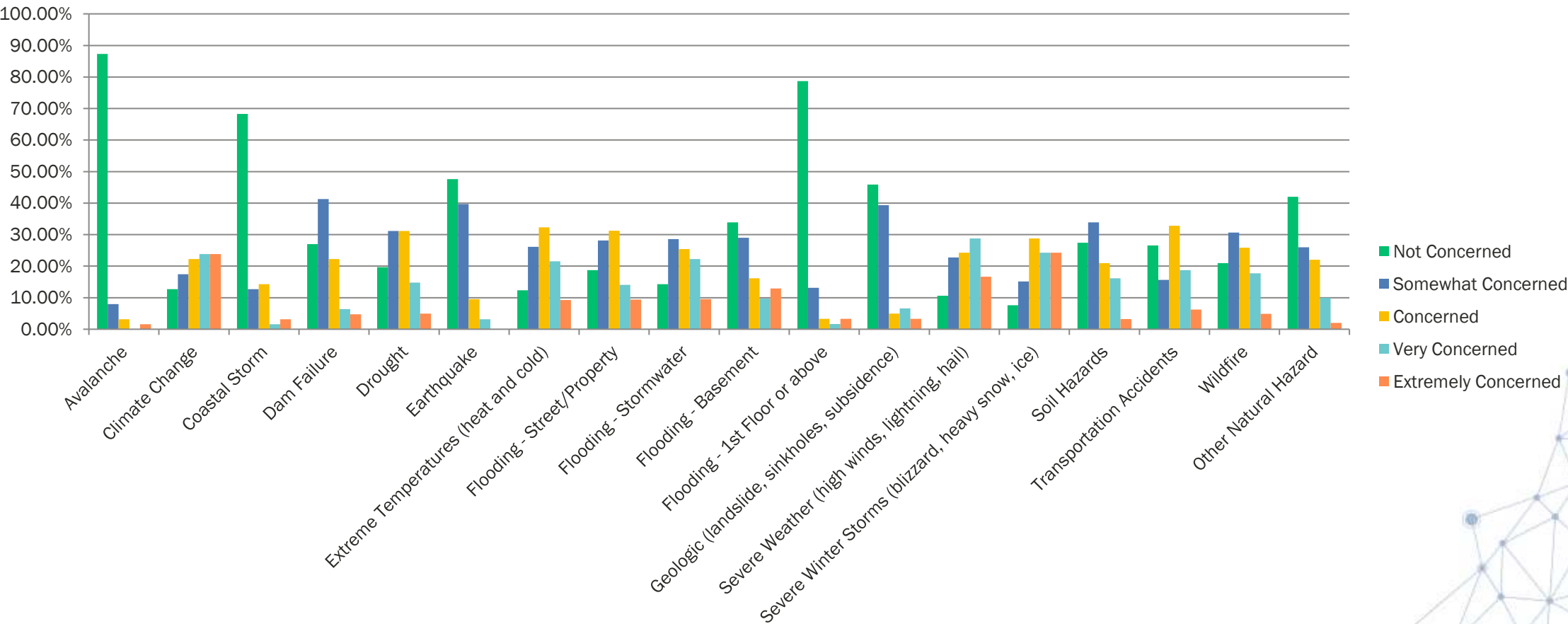
County streets Lake property Glens Falls Rd water due Road River  
flood drainage trees Hudson River None ice





# Public Survey Results - Hazard Concerns

How concerned are you about the following hazards in Warren County? Please check one for each hazard.





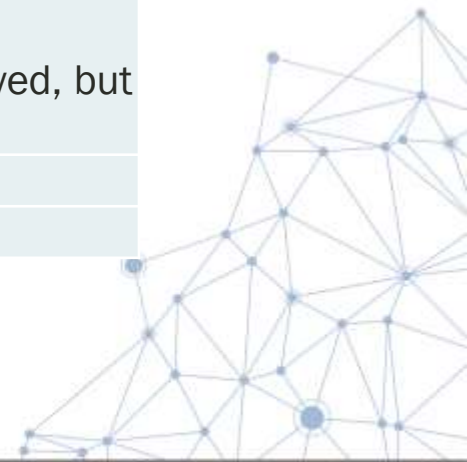
# Problem Areas

- Prone to power outages from trees on lines
- General back-up power, snow/ice blockage on highways
- Floodprone area on Meadowbrook Road @ Halfway Brook
- Low water levels in Kattskill Bay Lake George due to water management practices
- Apartment building for disabled and retired with all electric heat. No on demand generator. Located at 10 Manor Rd.
- 13th Lake Road, North River. The gabion walls are pushed out and look like they will give at any time. Also rocks fall in the middle of the road all the time.
- Flooding - 9N S/Hidden Valley Drive (Tubby Tubes-Lake Luzerne, NY 12846), due to a sewer drain that doesn't handle all the water, causing back up and ice/danger in winter. Trees down in my property from recent high winds (1275 Lake Avenue, Lake Luzerne, 12846)
- Water Tank control panel without power backup
- Ice jamming on Hudson River at 418 Bridge. Flooding on River Road
- Lake George sewage treatment plant has minimal security and is vulnerable to walk up attacks on infrastructure.
- Numerous roads and stream crossings could be subject to flood/storm damage.
- East End in Glens Falls is known for being a high water table area
- North Bolton Road at the foot of Church Hill Road is continually flooded due to the road having been raised several years ago. Raising the road removed all drainage possibilities and County officials refuse to do anything to correct the problem.
- Storm Drainage system that runs down the Lakeview Circle drive in the town of lake George and crosses Lake Shore Dr in the town of lake George and continues down to the lakefront between the Fairview Improvement association property and the lake view terrace property.
- Lack of municipal sewer and water
- Poor drainage for city streets (most streets in Glens Falls); raw sewage releases into the Hudson River (sometimes even if it only rains briefly); Poor tree maintenance causes downed branches in the high winds we now get for many months of the year.
- My road is collapsing into a stream. Many dead trees along the road. So called protected land around the watershed is not protected or monitored
- C/Glens Falls flood prone streets. Warren St, Mohican St, CR 19 T/Chester. SR 418 bridge & River Rd, Barton Mines RD Johnsburg
- Loon Lake Dam, Rt 8/9, Chestertown
- ZERO fragrance-free emergency shelters! Acute respiratory response / reactive airways when exposed for perfumes, scented products (ubiquitous), etc. ALSO: FEMA Flood Map makes ZERO sense! Unable to determine if my address is - or is not - in a flood plain: Fredella Avenue, Glens Falls, NY.
- Hudson River Basin Lake Luzerne to Corinth
- We have experienced power outages for as lengthy as 5 days. being on a deep well, the outage not only effects our lights and heat, but water as well.



# Problem Areas

- Queensbury - Halfway Brook Area/flooding  
Warrensburg - Schroon River Area/flooding  
Chester & Horicon - Schroon River Area/flooding
- Meadowbrook rd, Qby - Flooding
- Lakeview Circle Drive Town of Lake George
- GFWWTP releasing sewage into Hudson after every heavy rainstorm.  
Inadequate storm drainage on streets
- Still ZERO fragrance-free emergency shelters - I would not be able to survive in an emergency shelter due to respiratory distress when exposed to fragranced / scented products (body, laundry, cleaning, etc.)
- Power cybersecurity concern
- Flooding of the Hudson River in the spring occasionally that affects the State rt. 28 between North Creek and North River, and includes part of the town North Creek at the train station where Teddy Roosevelt learned McKinley had died from his wound, and he was now President. The historic Train station has been preserved, but flooding of the Hudson in the spring has caused concern a number of years in the past ten.
- Thurman bridge
- Downtown Warrensburg from Schroon River flooding






# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/ Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

# Hours

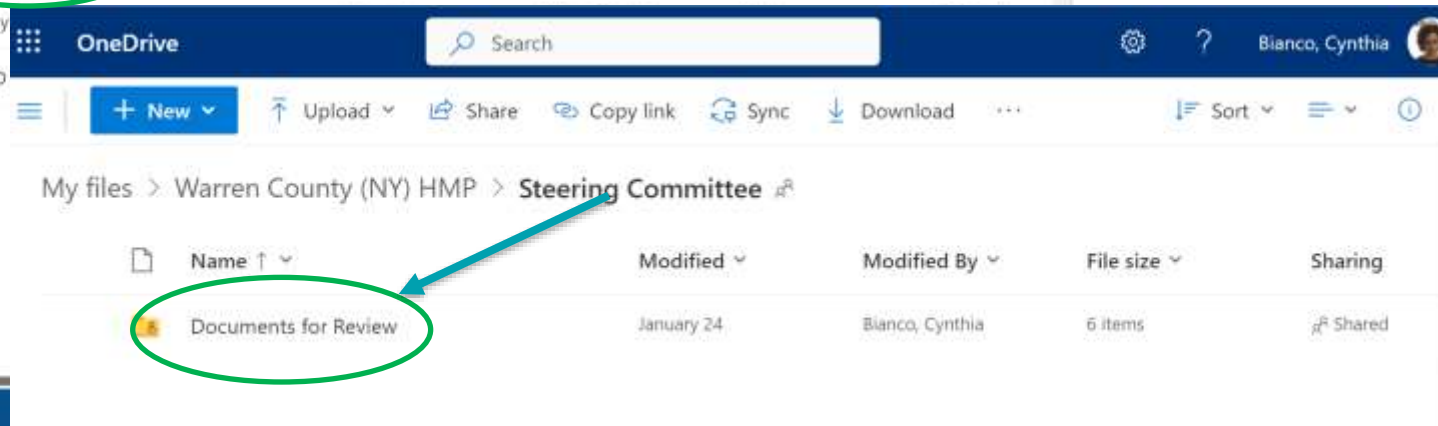
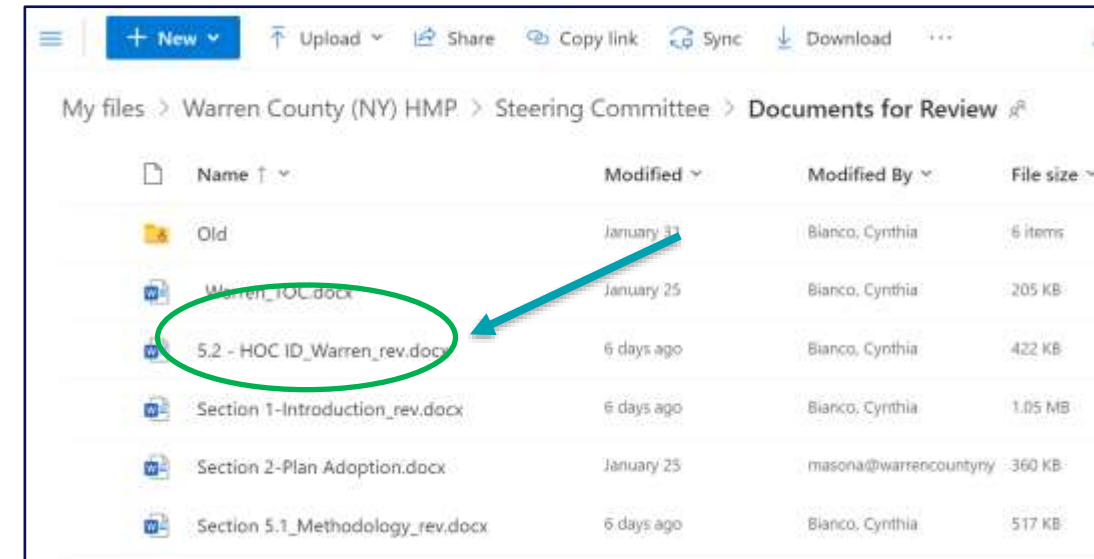
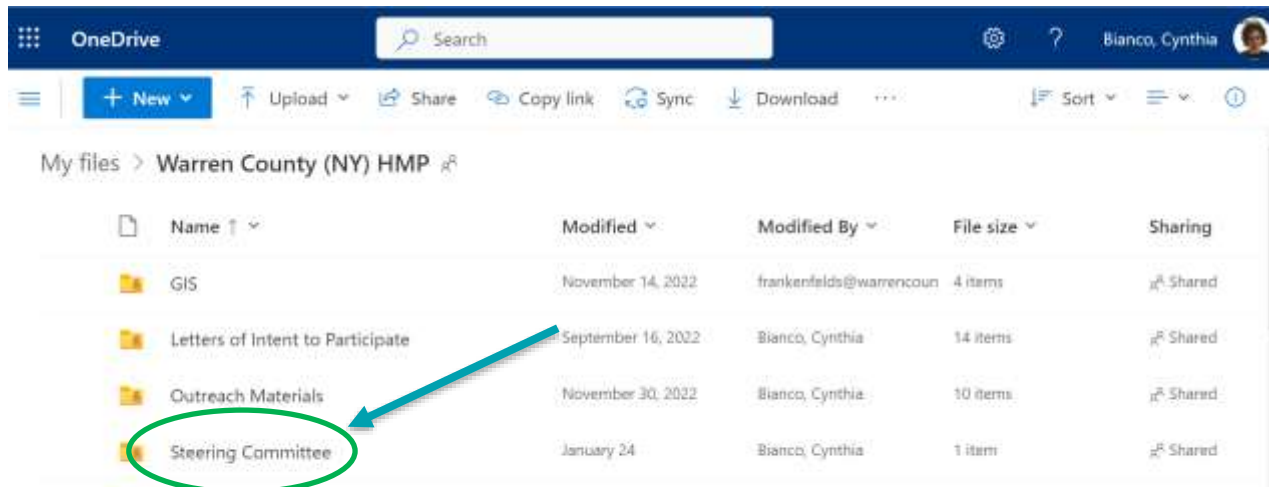






# Document Review on Sharepoint

- Access for document review
- Review in “desktop app” in track changes





# Next Steps

- Update Risk Assessment
  - Populate adjusted results municipal annexes to support project identification
  - Public Involvement Strategy – ongoing throughout the planning process
- Mitigation Strategy
  - Begin working with the municipalities to develop mitigation strategy/actions: **February 2023**
  - Mitigation Strategy Workshop with FEMA and NYSDHSES – **March 15, 2023**



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
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Thank  
You!



Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



Purpose of Meeting:	Mitigation Strategy Workshop
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	March 15, 2023, 10:00 am

Attendees:

Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Ann Marie Mason	Director, Warren County Emergency Services
Jessica Leerkes	Engineer, Town of Chester
Dan Barusch	Town/Village Lake George, Planner
Keith Lanfear	Village of Lake George
Craig Leggett	Supervisor, Town of Chester
Tammie DeLorenzo	Assistant to the County Administrator, Warren County
Michael Geraci	Supervisor, Town of Horicon
Khristopher Kassay	Town of Lake Luzerne
Karen Putney	Town of Lake Luzerne, Zoning Officer
James Hull	Code Enforcement Officer, Town of Warrensburg
Ernie Dunkley	Safety Officer, Town of Johnsbury
Danae Tucker	Town of Johnsbury
John Strough	Supervisor, Town of Queensbury
Laura Moore	Planner, Town of Queensbury
Mindy Conway	Town Clerk, Town of Chester
Betsy Parmerter	NYSDHSES
Elizabeth O'Reilly	NYSDHSES
Edna Frasier	Supervisor, Town of Hague
Cathy Clark	Town of Hague
Sheila Mender	City of Glens Falls
Don Lehman	Warren County Public Information
Kevin Clapp	NYSDHSES
John Gibb	CMCG
Roland Paperman	NYSDHSES
Laura Stebbins	Glens Falls
John Wilkerson	NYSDHSES
Paul Hoole	FEMA
Ethan Gaddy	Warren County
Chris Huch	Tetra Tech, Inc.
Cynthia Addonizio-Bianco	Tetra Tech, Inc.





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



<b>Agenda Summary:</b> Purpose to provide guidance on identifying mitigation actions and developing a mitigation strategy		
Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:05 am</li> <li></li> </ul>	
2	<b>In-Kind Services Tracking/Outreach</b> <ul style="list-style-type: none"> <li>Mr. Lieberum reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li> <li>Warren County reminded municipalities to submit documentation of in-kind hours to support the obligations related to the planning grant funding.</li> <li>The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li> </ul>	Action: Submit documentation of hours spent supporting the mitigation planning process, including hours spent to provide data, review documents, provide updates to communities.
3	<b>Developing Mitigation Strategies</b> <ul style="list-style-type: none"> <li>Tetra Tech reviewed risk reduction strategies as included in the presentation (attached).</li> <li>Regarding mitigation project details, in addition to the mitigation project matrix, Tetra Tech recommends at least two action worksheets for grant eligible projects. If a community has repetitive or severe repetitive loss properties, these should be addressed with an action worksheet.</li> <li>Tetra Tech distributed brainstorming worksheets to kick-start the development of problem statements. In addition, they provided all communities with pre-populated Action Worksheets for some initial projects.</li> </ul>	
4	<b>Development of Actions and Action Worksheets.</b> Tetra Tech reviewed the following guidelines for the content of Action Worksheets: <ul style="list-style-type: none"> <li>Projects should have a strong connection to the risk assessment</li> <li>Projects should be specific in time, place, and location</li> <li>Projects should be diverse in nature</li> <li>Communities have been provided a Mitigation Catalog</li> <li>Project descriptions to include consideration of priorities, integration with existing programs, timelines, benefits, and costs•</li> </ul>	
5	<b>Next Steps</b>	Schedule a support meeting with Tetra Tech to complete your community annex.





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>• To enable those who could not participate, a video of the presentation is available online for review here: <a href="#">Warren County Mitigation Workshop Video</a></li><li>• Continue to engage the public</li><li>• Develop mitigation strategy/actions: <b>March 2023</b></li><li>• Email <a href="mailto:chris.huch@ttratech.com">chris.huch@ttratech.com</a> to schedule a support meeting with Tetra Tech to complete your community annex.</li></ul>	
6	<b>Conclusion</b> - The meeting concluded at 11:14 am.	



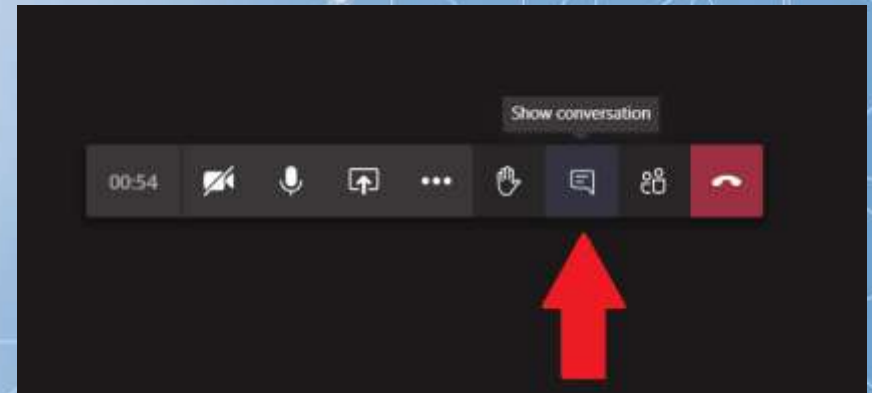
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Mitigation Workshop | March 15, 2023 | 10:00 – 11:30 AM

## **WELCOME!**

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

*This will assist in our attendance documentation.*





# Agenda

1. Introductions
2. In-Kind Tracking Reminder
3. Hazard Mitigation Refresher
4. Project Status
5. Developing Mitigation Strategies – NYS DHSES, FEMA
6. Updating Previous Actions
7. Using Mitigation Development Worksheets to Select Your Actions
8. Action Worksheets
9. Next Steps





# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetratech.com](mailto:cynthia.bianco@tetratech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

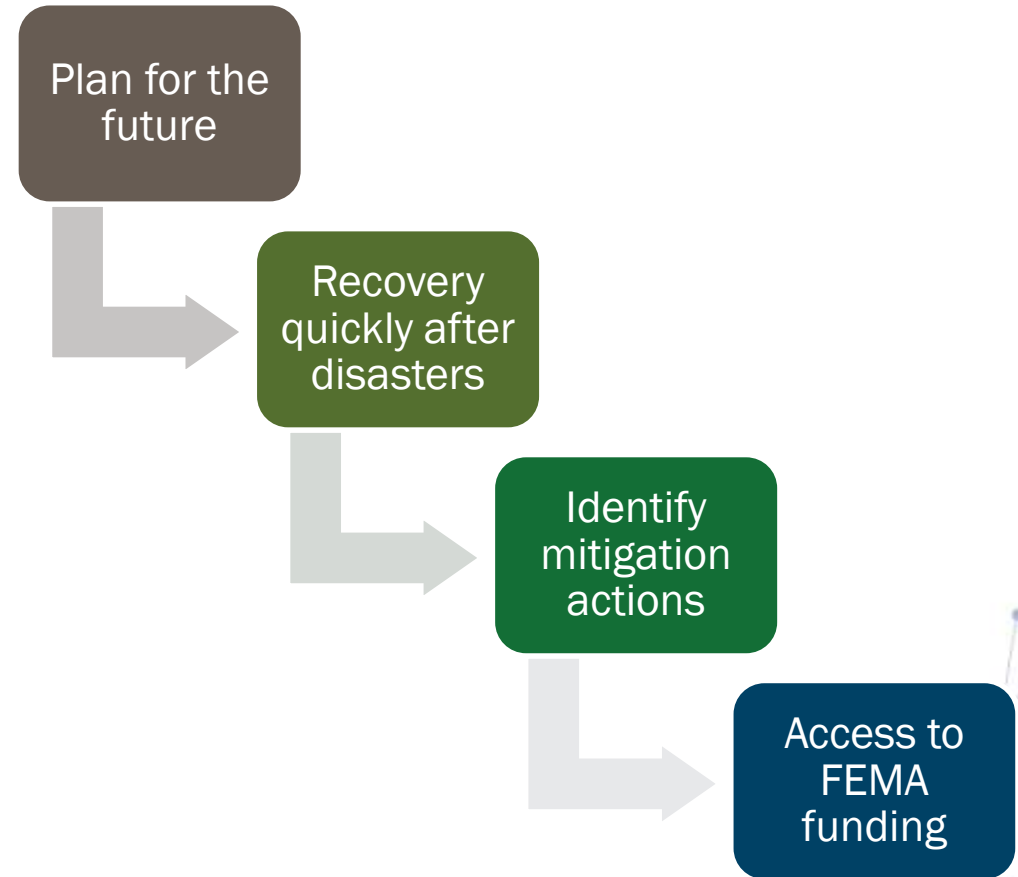
Please document your time spent working on the HMP:

Date

# Hours



# Hazard Mitigation – What is it?





# Why are we spending valuable time on this?

## Hazard Mitigation Works!

- For every \$1 spent on hazard mitigation, saves the U.S. \$6 in future disaster costs!
- More than just money – it could prevent 600 deaths and 1 million non-fatal injuries!

**More Mitigation Measures,  
More Savings**



**One dollar invested in mitigation =  
six dollars U.S. saves in future costs**

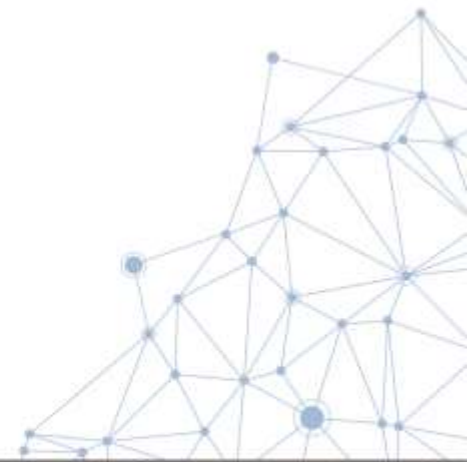






# Our Schedule

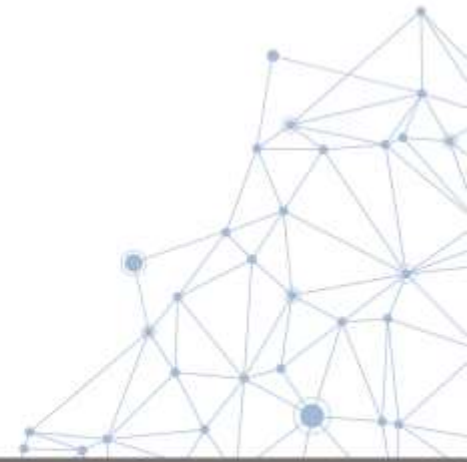
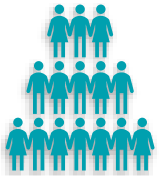
Task	Date
Data Collection	Complete
Update Hazard Profiles	Complete
Risk Assessment	Complete
Risk Results Presentation	Complete
Mitigation Strategy Workshop	March 15, 2023– TODAY!
Review Draft Plan	May 2023
Public Review of Plan	June/July
Submit to NYSDHSES	July/August
Submit to FEMA	September/October 2023





# Public Outreach and Engagement

- Check out the HMP website - <https://www.warrencountynewyorkhmp.com/>
- Post links on social media and department/agency websites
- Citizen, stakeholder and neighboring county surveys distributed, as of 3/10/23:
  - Citizen Survey: 71 responses
  - Stakeholder Survey: 9 responses
  - Neighboring County Survey: 1 response
  - *All responses relating to your jurisdiction are included in your updated Annex*



# Mitigation Strategy





# 2023 HMP Hazards of Concern

- Disease Outbreak
- Earthquake
- Extreme Temperatures
- Flood
- Dam Failure
- Infestation and Invasive Species
- Severe Storm (Windstorm, Thunderstorm, Hail, Tornado)
- Severe Winter Weather (Heavy Snow, Blizzards, Ice Storms)
- Wildfire

*A community must include at least one mitigation action for each hazard that is deemed to have a significant impact on the community.*

*For hazards with minimal or no perceived impact to a community, a statement must be included in the annex to indicate why the community has not address any hazards with a mitigation action.*



# Risk Reduction Examples

## To Reduce Risk:

- *Manipulate the Hazard:*
  - Structural flood control
- *Reduce/Eliminate Exposure:*
  - Property acquisition
- *Reduce Vulnerability:*
  - Retrofit existing structures
- *Increase Capability:*
  - Preparation, technical assistance, planning, enforcement





# Using your Mitigation Strategy to Reduce Risk

- What is a *Mitigation Strategy*?
  - A group of projects or actions to reduce the impacts of the hazards of concern on your community
- Terms to describe the *Mitigation Strategy* include:
  - *Mitigation Action Plan or Action Plan*
  - *Mitigation Projects or Initiatives or Actions*

Your Mitigation Strategy table is included in your annex of the plan.  
**TWO of your actions must be detailed on Action Worksheets**





# FEMA Mitigation Action Types



**Plans and regulations** include government authorities, policies, or codes that encourage risk reduction, such as building codes and state planning regulations. This may also include planning studies.



**Structure and infrastructure projects** involve modifying existing structures and infrastructure or constructing new structures to reduce the impact of hazards.



**Natural systems protection projects** minimize losses while also preserving or restoring the function of natural systems.

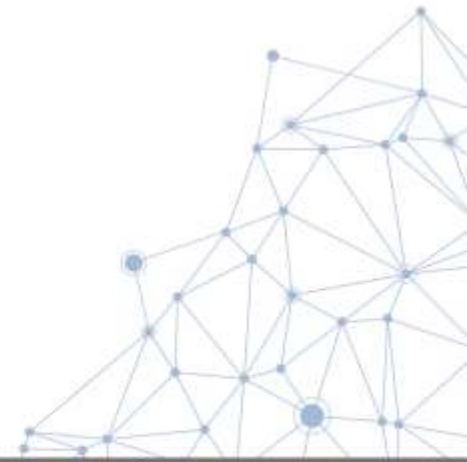


**Education and awareness programs** include long-term, sustained programs to inform and educate citizens and stakeholders about hazards and mitigation options. This category could also include training.



# NYS Requirements for Mitigation Strategy Update

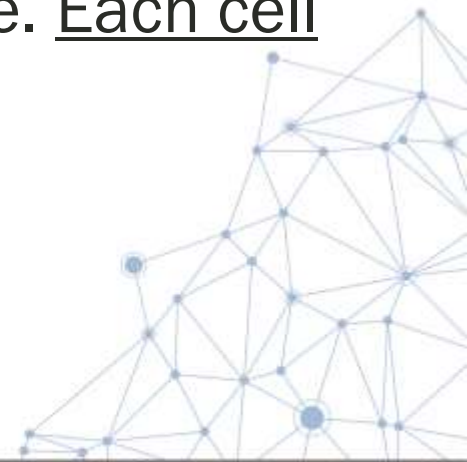
- Need to develop at least 2 Action Worksheets
- If jurisdiction has a regulatory floodplain then one worksheet must address flooding
  - [if the jurisdiction has Repetitive and Severe Repetitive Loss Properties - it is good practice to include action with details (street or neighborhood names)]
- Critical facilities in the 100-year floodplain – must be protected to the 500-year flood event
  - If already protected, we must note how
  - If not protected, a mitigation action must be developed
- Plan for Climate Change and propose actions to address





# NYS Requirements for Mitigation Strategy Update

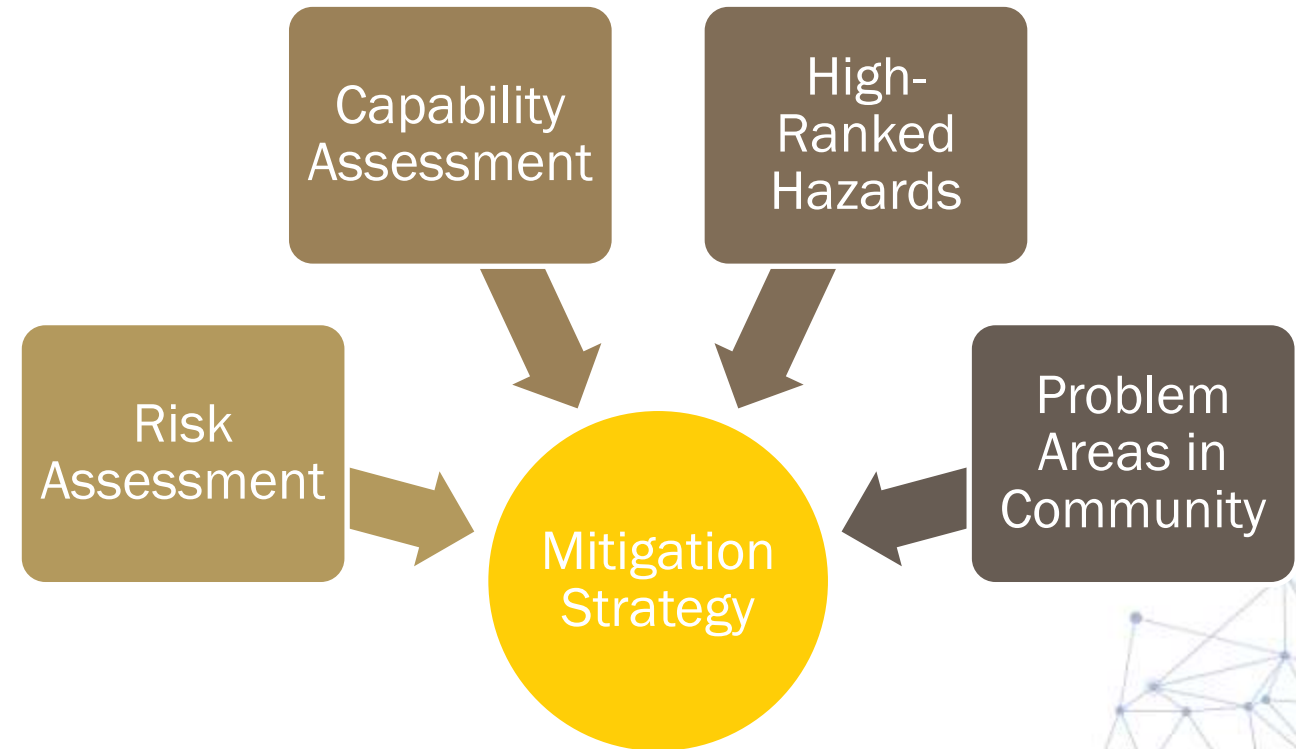
- Proposed actions MUST have specific information identified including:
  - Project lead
  - Estimated cost
  - Timeline
  - Whether the action involves a critical facility
- All required items are identified within the proposed action table. Each cell of the table MUST be filled out!



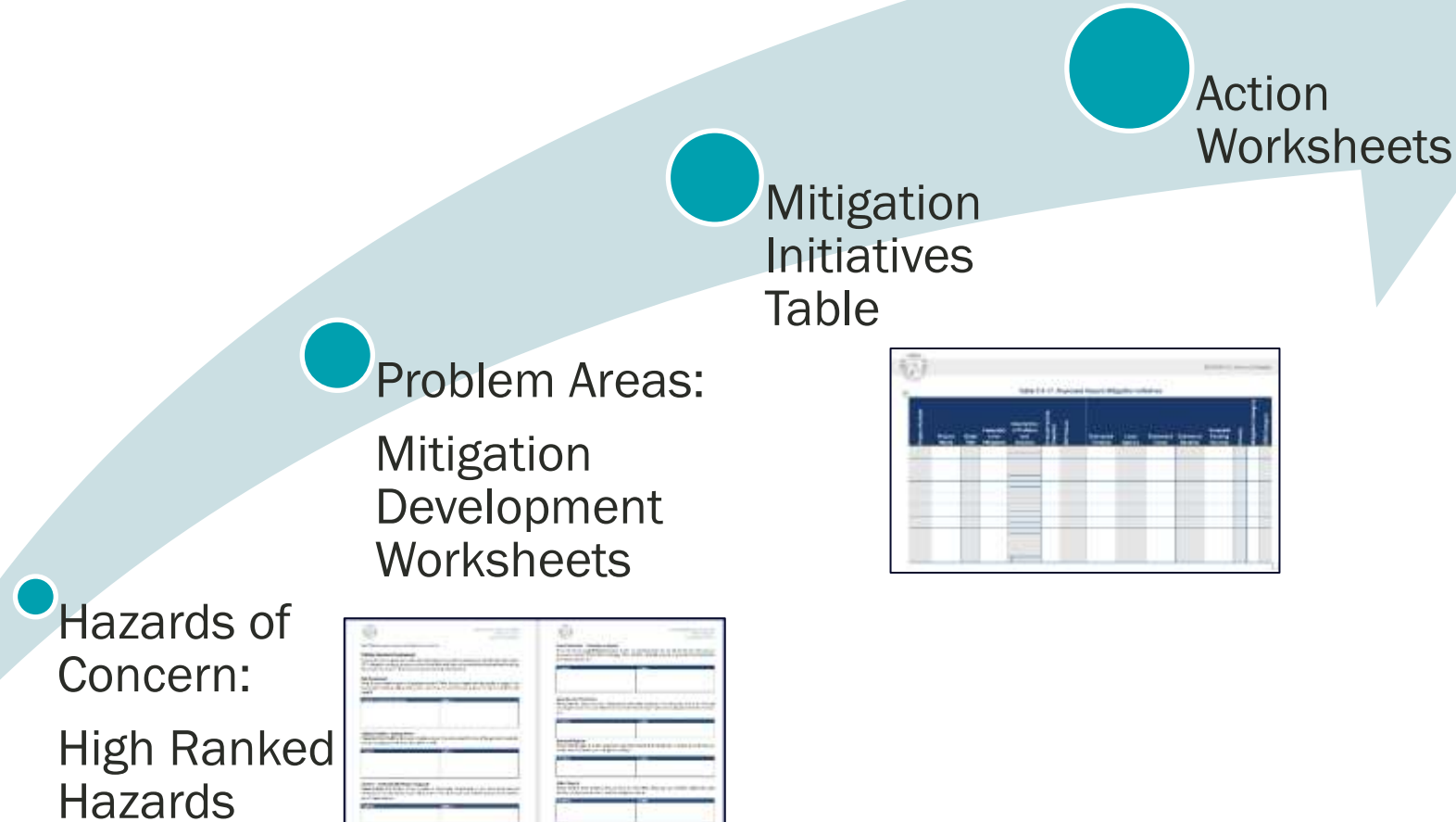


# Connecting to the Mitigation Strategy

- Need a clear connection between vulnerability and proposed mitigation actions.
- Capability assessment provides insight into challenges/opportunities for the mitigation strategy as well.
- Provides the factual basis for activities proposed in the mitigation strategy.



# The roadmap to a strong mitigation strategy



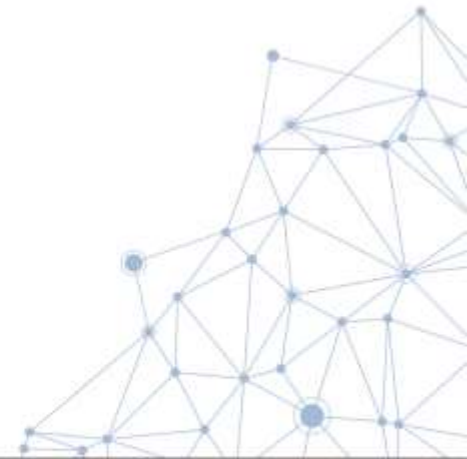
Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) of Concern:			
Description of the Problem:			
Action or Project Intended for Implementation			
Description of the Solution:			
Is this project related to a Critical Facility? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Is the critical facility located in the 1% annual chance flood area? Yes <input type="checkbox"/> No <input type="checkbox"/>			
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Estimated Benefits (lives avoided):	Goals Met:	
Useful Life:			
Estimated Cost:	Mitigation Action Type:		
Prioritization:	Desired Timeframe for Implementation:	Potential Funding Source:	
Estimated Time Required for Project Implementation:			
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





# What are we focusing on for our mitigation strategy?

- Stronger connection between the risk assessment and mitigation strategy
  - At least one action is needed to address each hazard of concern
- More specific actions
  - Specific projects, in specific locations, in a specific timeframe
- Diverse actions
  - Include a variety in the types of actions

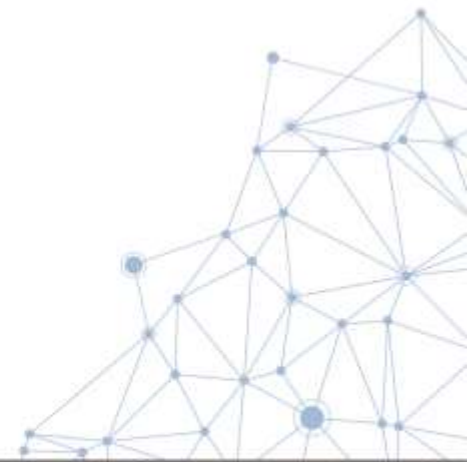






# Update the Mitigation Strategy

- Review our Goals and Objectives
- Start with Problems (many identified on your Worksheets)
  - Areas that have been impacted by hazard events
  - Recurring issues
  - Critical/Lifeline facilities in the floodplain
  - RL/SRL properties need mitigating
  - Evacuation routes and sheltering needs

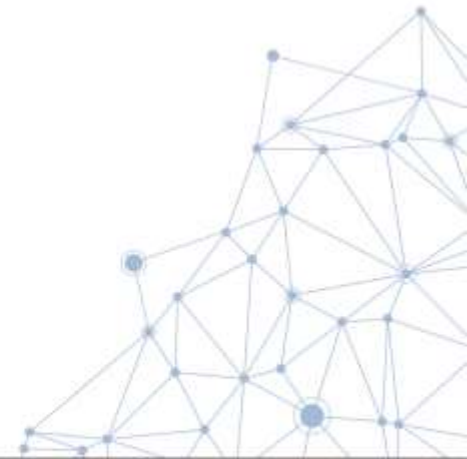




# Update the Mitigation Strategy

- Identify New Mitigation Actions/Projects
- Modify 'Carry-Over' projects from the previous HMP -more specific or address different aspect of original problem

## Quality Over Quantity!!

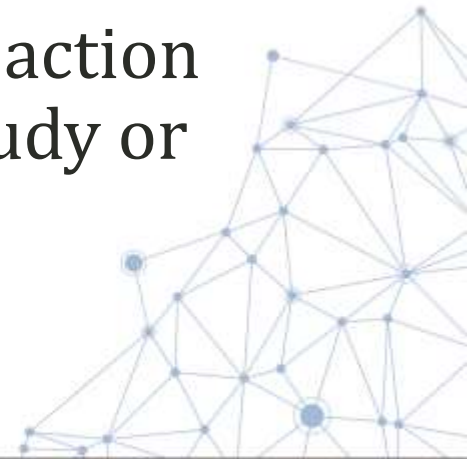


# Making Previous Actions More Specific



# Why we must update our actions...

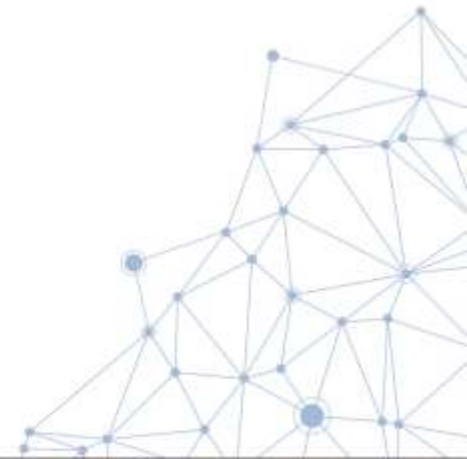
- Actions in the previous plan often were general and did not include detailed information.
- Detailed information is needed to support FEMA grant applications for funding support.
- Focus on updating previous actions to include the necessary level of detailed information.
- If detailed information is not available, note a phase in the action that will gather this information such as an engineering study or feasibility assessment.
- Use the same level of detail for new actions as well!





## Example: Previous problem and action

- **Problem:** Critical facilities require backup power.
- **Solution:** Acquire backup power for critical facilities.





## Example: Improved problem and action

- **Problem:** Town Hall lacks a backup power source. The Town Hall houses the Emergency Operations Center and also can serve as a backup shelter. Lack of power results in a breakdown of continuity of operations and prevents the Town Hall from providing critical services during a hazard event.
- **Solution:** The Town Engineer will work with the Office of Emergency Management to research and purchase the appropriately sized backup generator for the Town Hall. The Town DPW will install the backup generator and necessary electrical components and will be responsible for testing and upkeep of the generator after installation.





# Example: EVEN MORE Improved problem and action

- **Problem:** Town Hall lacks a backup power source. The Town Hall houses the Emergency Operations Center and also can serve as a backup shelter **for approximately 100 people**. Lack of power results in a breakdown of continuity of operations and prevents the Town Hall from providing critical services during a hazard event.
- **Solution:** The Town Engineer will work with the Office of Emergency Management to research and purchase **a 75 kW** generator for the Town Hall. The Town DPW will install the backup generator **on the roof of the Town Hall** and necessary electrical components and will be responsible for testing and upkeep of the generator after installation.

# Mitigation Development Worksheet



# Use Your Worksheet to Identify Mitigation Actions



Hazard Mitigation Plan 2023 Update  
Warren County, NY  
Hazard Ranking Review

Note: \*Adaptive capacity was assumed Moderate for all hazards.

## Problem Statement Development

Utilizing the results gathered to date (i.e., risk assessment, capability assessment, identified problem areas, 2017 mitigation strategy), please review the identified problems and potential solutions and add anything that may be missing to inform your mitigation strategy development.

## Risk Assessment

What is your hazard concern of greatest concern? Refer to your hazard ranking results on page 1 (ex: stormwater flooding, falling trees, power loss, etc.). Do you have any projects in mind to address that hazard?

Problem / High-Ranked Hazards	Solution

## Critical Facilities - Backup Power

Please list critical facilities that require backup power. If you have specifics (size of the generator, potential cost, etc.), please provide that information as well.

Problem	Solution

## Culverts - Undersized/In Need of Upgrade

Please indicate the location of any culverts or stormwater components in your community that are undersized or are damaged from past flood events. Then note if you would like to add a project to address any of these locations.

Problem	Solution



Hazard Mitigation Plan 2023 Update  
Warren County, NY  
Hazard Ranking Review

## Flood Protection – Elevation or Buyout

Please identify any **repetitive loss areas**, homes, or neighborhoods that would benefit from elevation or buyout to prevent future flood damages. Then identify potential projects to provide flood protection (elevation, buyout, etc.)

Problem	Solution

## Infrastructure Protection

Please identify roads and other infrastructure that needs protection from flooding, storms, etc. Provide any projects where you would like to include protection measures (elevate roadway, harden infrastructure, etc.)

Problem	Solution

## Outreach Projects

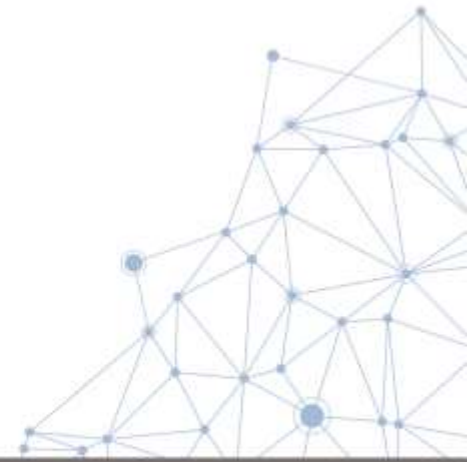
Please identify gaps in public awareness regarding hazards and identify any outreach projects that you would like to include in your mitigation strategy.

Problem	Solution

## Other Projects

Please identify other projects that you have in mind after reviewing your problem statements, past actions, risk assessment results, and the mitigation catalog.

Problem	Solution

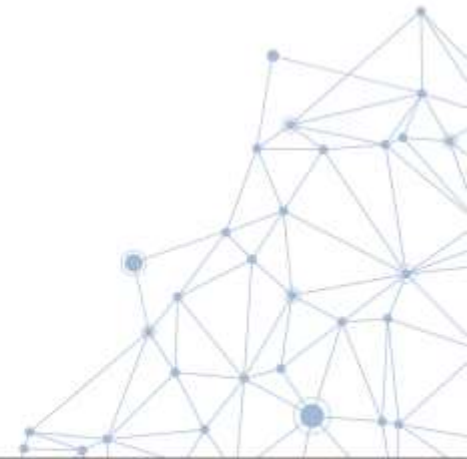




# How do you fill in the Worksheet?

The worksheet asks a series of questions to help you think about vulnerabilities within your community.

- Critical Facilities/Lifelines – backup power
- Critical Facilities/Lifelines – flood protection
- Culverts – undersized/in need of upgrades
- Flood Protection – elevations/buyouts; think about the RL/SRL properties – if you have RL/SRLs you need an action related to this
- Infrastructure Protection – what needs protection from flooding, storms, etc.?
- Anything else?

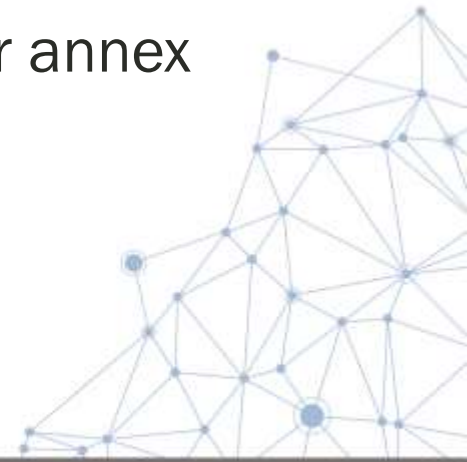




# How do you fill in the Worksheet?

- Review the pre-populated information on your worksheet
  - Information from worksheets submitted to date
  - Input from public/stakeholder surveys
  - Risk assessment results
- Determine the problems that you will pursue solutions for
- Add as much detail as possible to the problems and develop detailed solutions
- Return worksheet to your Tetra Tech planner for discussion during your annex development meeting

**Schedule your meeting with your Tetra Tech planner ASAP!**



# Proposed Action Table







# Proposed Action Table

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	EHP Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
2020-Muni-001				Problem:										
				Solution:										
2020-Muni-002				Problem:										
				Solution:										
2020-Muni-003				Problem:										
				Solution:										
2020-Muni-004				Problem:										
				Solution:										
2020-Muni-005				Problem:										
				Solution:										

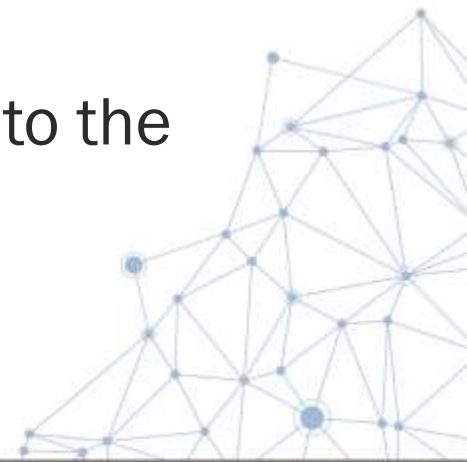
# Action Worksheets





# Action Worksheets

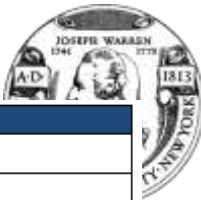
- Each jurisdiction must develop at least 2 Action Worksheets
- Should also develop additional Action Worksheets for projects you plan to apply for FEMA funding support for within the next 5 years
- Not every action requires an Action Worksheet to be developed but the same sort of information about those actions are still needed in the Proposed Actions table of the annex
- If jurisdiction has a regulatory floodplain then one worksheet must address flooding
- Critical facilities in the 100-year floodplain – must be protected to the 500-year flood event
- Plan for Climate Change and propose actions to address



# Action Worksheet

- Description of the Problem
  - What is the problem?
  - What is the risk?
  - Where is the problem occurring?
  - Who is the problem impacting?
  - Have there been past damages?
  - How frequently does the problem occur?

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

## ➤ Description of the Solution

- How do you propose to solve or mitigate the problem?
- What are the design specifications?
  - Height and length of a floodwall
  - kW for backup generators
  - Number of structures to be bought out or elevated
  - Etc.
- Who is responsible for what aspects of the project?

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

# Action Worksheet

## ➤ Level of Protection

- What level event is the project being designed to protect to?
  - For flood protection: 100-year flood, 500-year flood
  - For stormwater improvements: 5 year, 10 year rain events
- If not a specific level, include brief description of what protections are
  - For generators: Prevents power loss

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
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(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Estimated cost
- What will the project cost?
- If project includes phases or components, what will each phase or component cost?
  - New generator: \$25K, elevation platform for generator: \$1K

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
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(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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:	
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	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Estimated Benefits
- Provide a description of the estimated benefits, either quantitative and/or qualitative
- Identify the benefits that implementation of this project will provide. If dollar amounts are known, include them. If dollar amounts are unknown or are unquantifiable, describe the losses that will be avoided.

Action Worksheet			
<b>Project Name:</b>			
<b>Project Number:</b>			
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>			
<b>Description of the Problem:</b>			
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>			
<b>Is this project related to a Critical Facility?</b>		Yes <input type="checkbox"/>	No <input type="checkbox"/>
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(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
<b>Level of Protection:</b>		<b>Estimated Benefits (losses avoided):</b>	
<b>Useful Life:</b>		<b>Goals Met:</b>	
<b>Estimated Cost:</b>		<b>Mitigation Action Type:</b>	
Plan for Implementation			
<b>Prioritization:</b>		<b>Desired Timeframe for Implementation:</b>	
<b>Estimated Time Required for Project Implementation:</b>		<b>Potential Funding Sources:</b>	
<b>Responsible Organization:</b>		<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Current problem continues
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



# Action Worksheet

- Prioritization
- High, Medium, or Low
- Use the second page of Action Worksheet to evaluate each action and assist in the determination of priority (to be discussed shortly)

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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	<input type="checkbox"/> No <input type="checkbox"/>
Is the critical facility located in the 1% annual chance flood area?		Yes	<input type="checkbox"/> No <input type="checkbox"/>
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Responsible Organization
- Identify the lead organization/department/individual for the project
- Identify any supporting organizations/departments/ individuals for the project.

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
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Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Estimated Time Required for Project Implementation
- Provide the estimated time required to complete the project from start to finish.

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) 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 <input type="checkbox"/>	No <input type="checkbox"/>
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(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:		Estimated Benefits (losses avoided):	
Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



# Action Worksheet

- Alternatives
- Three alternatives are needed for each action worksheet.
  - 1<sup>st</sup> alternative can be no action
  - 2<sup>nd</sup> and 3<sup>rd</sup> alternatives – include estimate cost and a description of the pros/cons of the alternatives

Action Worksheet			
Project Name:			
Project Number:			
Risk / Vulnerability			
Hazard(s) of Concern:			
Description of the Problem:			
Action or Project Intended for Implementation			
Description of the Solution:			
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Useful Life:		Goals Met:	
Estimated Cost:		Mitigation Action Type:	
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)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	Current problem continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			







# Evaluation of Actions

- Consider the benefits and costs
- Consider the implementation timeline
- Consider the areas/problems of greatest need
- Consider the funding sources
- High/Medium/Low priority

**1 = highlight effective or feasible**

**0 = neutral**

**-1 = ineffective or not feasible**

Evaluation and Prioritization		
Project Name:		
Project Number:		
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety		
Property Protection		
Cost-Effectiveness		
Technical		
Political		
Legal		
Fiscal		
Environmental		
Social		
Administrative		
Multi-Hazard		
Timeline		
Agency Champion		
Other Community Objectives		
Total		
Priority (High/Med/Low)		



# Important Actions

- **Municipalities with high hazard potential dams with a condition rating of unsafe or unsound** should include an action to address the deficiencies, using the High Hazard Potential Dam (HHPD) grant program for funding.
- **Municipalities with repetitive loss properties** need to include an action to address repetitive loss (elevation and/or acquisition). Tetra Tech has emailed the communities that have repetitive loss properties.

## High Hazard Potential Dam (HHPD) Worksheet

A job aid for Municipalities Preparing /Amending Mitigation Plans<sup>1</sup>

Complete a Separate Worksheet for each<sup>2</sup> state regulated HHPD in your community.

Name of the Mitigation Plan:	Point of Contact for this Worksheet Name:
	Email:
Municipality where dam is located:	Name of Dam:
Name of the Dam Owner:	NYS Dam ID #:

Dams are critical infrastructure that can be impacted by natural hazards and if they fail to operate as designed, there could be cascading consequences downstream in the inundation area and potentially to a larger area if the use of the pooled reservoir is lost or diminished.

This worksheet, when completed, will:

1. Describe the process followed for assessing the risks to /from the identified high hazard potential dam located in the municipality.
2. Describe the risks to the dam from natural hazards, and from the dam should it fail to operate as designed.
3. Describe the mitigation plan goal that covers addressing the vulnerabilities to/from HHPDs.
4. Describe one or more planned mitigation actions / projects related to a high hazard potential dam, be it with a HHPD grant or other FEMA hazard mitigation grant programs.

This worksheet is designed to be placed in the annex of the municipality with jurisdiction over the area where the dam is located. Use of this worksheet will ensure no HHPD requirement has been overlooked for the dam being assessed. Completing worksheets for each of the HHPDs in the municipality will allow FEMA to quickly confirm the municipality has a hazard mitigation plan that included all dam risks.

It is highly recommended that when the dam owner is another municipality, the worksheet should also be added to the other municipality's mitigation plan. Doing so will ensure the other municipality meets Element B1-a and C4-b for approval of their mitigation plan under the Stafford Act requirements.

General or generic discussion of high hazard dams and their risks is welcomed content in a mitigation plan. However, it is not a substitute meeting HHPD requirements 1 thru 4, as covered by this worksheet.

<sup>1</sup> Source: Local Mitigation Planning Policy Guide (pages 34-35 and 57), Released April 19, 2022

<sup>2</sup> This change, to include all state regulated HHPDs, per the Policy Guide went into effect with the release of the release of the Rehabilitation of High Hazard Potential Dams Grant Program Fiscal Year 2022 Notice of Funding Opportunity.



# Schedule

- Complete Mitigation Development Worksheet and Schedule Meeting with your Tetra Tech Planner **Before March 31<sup>st</sup>**
- Work with Tetra Tech Planner to Complete Actions and Annex following meeting
- Draft Plan to Steering Committee by middle of May
- Final draft plan to NYS DHSES and FEMA – August/September 2023



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)

The background of the slide is a scenic photograph of a large, multi-story resort building with a white facade and a red roof, situated on a lush green island in the middle of a large blue lake. A white ferry boat with a red stripe is moving across the water in the foreground. The sky is blue with scattered white clouds. In the bottom right corner, there is a large white oval containing the text "Thank You!".

Thank  
You!



# Warren County Hazard Mitigation Plan Update Meeting Notes



Purpose of Meeting:	Steering Committee Meeting
Location of Meeting:	Virtual Teams Meeting
Date of Meeting:	June 7, 2023, 10:00 am

## Attendees:

Ann Marie Mason	Director, Warren County Office of Emergency Services (OES)
Jim Lieberum	Warren County SWCD, District Manager, HM Coordinator
Laura Moore	Town of Queensbury, Land Use Planner
Kevin Hajos	Warren County Department of Public Works
Ashley Rivers	Warren County Office of Emergency Services
John Gibb	Contingency Management Consulting Group
Laura Stebbins	Director of Emergency Preparedness, Glens Falls Hospital
Sandra LeBarron	Director of Environmental Health and Safety, Finch Pruyn
Elizabeth O'Reilly	NYSDHSES

**Agenda Summary:** Purpose to provide a brief progress report and address pending action items. To re-convene the Steering Committee meeting to review the plan status and agenda items below.

Item No.	Description	Action item(s):
1	<b>Opening Remarks/Progress Report</b> <ul style="list-style-type: none"> <li>Meeting started at 10:00 am</li> <li>Cynthia Addonizio-Bianco, Tetra Tech (Tt), welcomed participants and noted the key agenda items as summarized in the attached PowerPoint presentation.</li> <li>The Steering Committee is requested to access the draft plan documents on the project OneDrive to review and provide any comments or feedback to be incorporated into the plan before posting for public review.</li> </ul>	
2	<b>Progress Report</b> <ul style="list-style-type: none"> <li>The process continues to be on track for plan submittal to FEMA in August 2023.</li> <li>Upcoming milestones <ul style="list-style-type: none"> <li>Steering Committee Review of Draft Plan (through July 12<sup>th</sup>)</li> <li>Draft plan posted for public comment (August 1<sup>st</sup> – August 31<sup>st</sup>)</li> <li>Plan submittal to NYSDHSES/FEMA (September)</li> </ul> </li> </ul>	
3	<b>Draft Plan Review</b> (refer to attached presentation for details) <ul style="list-style-type: none"> <li>Survey Results</li> <li>Section-by-section content review</li> <li>Maintenance procedure review</li> </ul>	





Warren County  
Hazard Mitigation Plan Update  
Meeting Notes



	<ul style="list-style-type: none"><li>Steering Committee Review guidelines</li></ul>	
4	<b>Discussion</b> <ul style="list-style-type: none"><li>Mr. Hajos reviewed and discussed mitigation actions included in the draft county annex to support finalization of the mitigation strategy. This input will be included in the draft annex.</li></ul>	
5	<b>Pending Action Items</b> <ul style="list-style-type: none"><li>Tt reminded committee members to document any time spent to attend HMP meetings, to provide input, or to provide information to their constituencies to ensure their efforts are included in the documentation to comply with grant requirements.</li><li>The public HMP website (<a href="https://www.warrencountynewyorkhmp.com">https://www.warrencountynewyorkhmp.com</a>) has been updated with meeting dates and meeting documentation. The public draft will be located on this site for public review.</li><li>Tetra Tech reminded steering committee members to access the project OneDrive site to review draft plan sections and to provide input, as necessary.</li></ul>	<p>Steering Committee members to access plan on project OneDrive and provide comments as needed by July 12<sup>th</sup>.</p> <p>Tt to send OneDrive access links and review guidance to committee members.</p>
6	<b>Next Steps</b> <ul style="list-style-type: none"><li>Steering Committee members to access plan on project OneDrive and provide comments as needed by July 12<sup>th</sup>.</li><li>Tt to update draft plan to include committee feedback and post plan for public review in August.</li></ul>	
7	<b>Conclusion</b> - The meeting concluded at 11:07 am.	



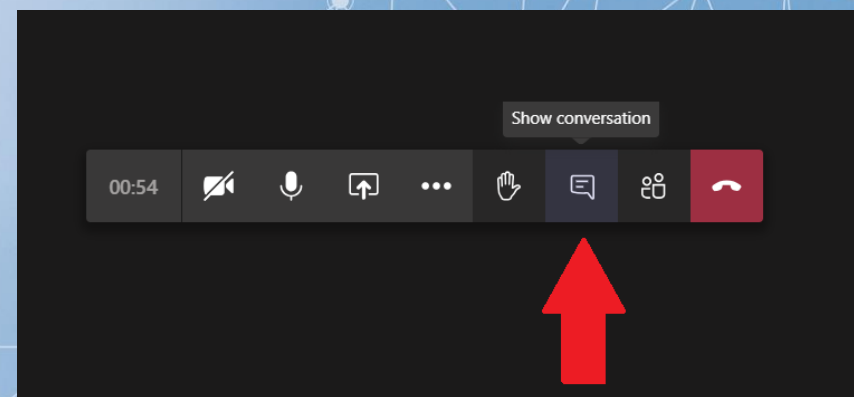
# Warren County, New York Hazard Mitigation Plan – 2023 Update

Steering Committee #5 Meeting | June 7, 2023 | 10:00 – 11:00 AM  
Draft Plan Review

## **WELCOME!**

*If you are attending the webinar on your computer, please add your name, title, and organization(s) to the chat box.*

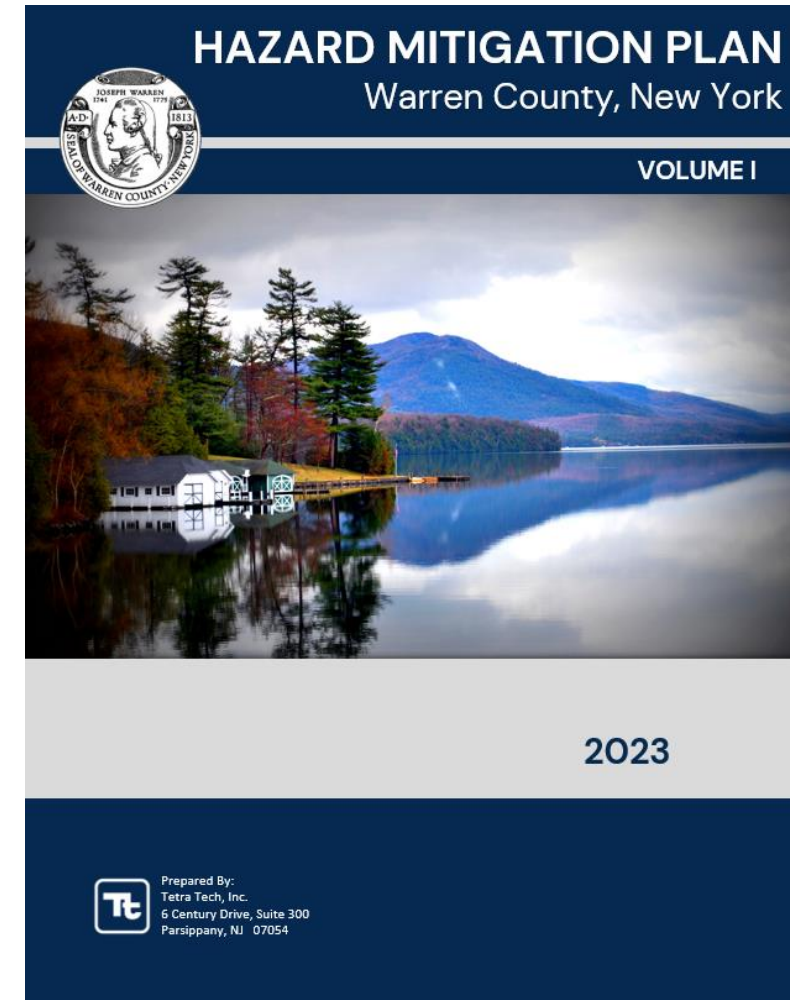
*This will assist in our attendance documentation.*





# Agenda

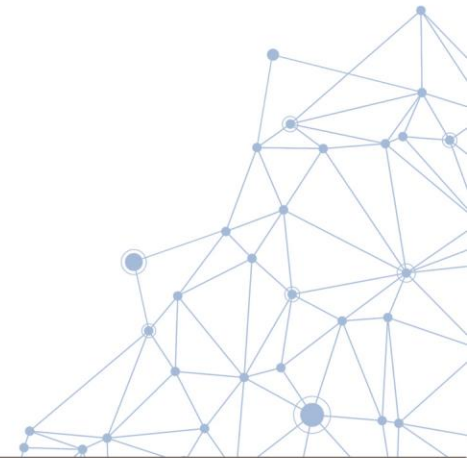
1. Introductions
2. Project Schedule
3. Draft Plan Review
  - What is New?
  - Survey Results
  - Section-by-Section Content Overview
  - Review Guidelines
  - Finalizing the Plan
  - County Mitigation Actions Discussion
4. Next Steps
5. Q&A





# Project Schedule Review

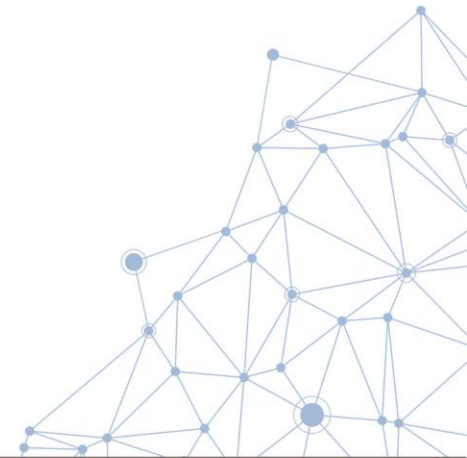
- |   |                         |  |
|---|-------------------------|--|
| ✓ | November 2, 2022        | Municipal Kick-Off Meeting                           |
| ✓ | November – December     | Data Collection                                      |
| ✓ | January 2023 – February | Update hazard profiles                               |
| ✓ | February 15, 2023       | Risk Assessment Presentation to Planning Partnership |
| ✓ | March 15, 2023          | Mitigation Strategy Workshop                         |
| ☐ | June/July 2023          | Review draft plan                                    |
| ☐ | September 2023          | Submit plan to NYSDHSES and FEMA                     |

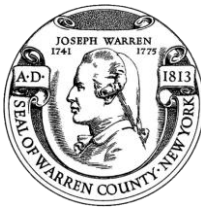




# What is new in the 2023 Update?

- Review of hazard impacts since last plan.
- Updated critical facility inventory, including Community Lifelines
- Updated annexes to align with new FEMA and NYSDHSES Guidance
- Supplementary information appendix to support policy and planning
- Climate Change impacts and Adaptive Capacity to reduce vulnerability used in hazard ranking





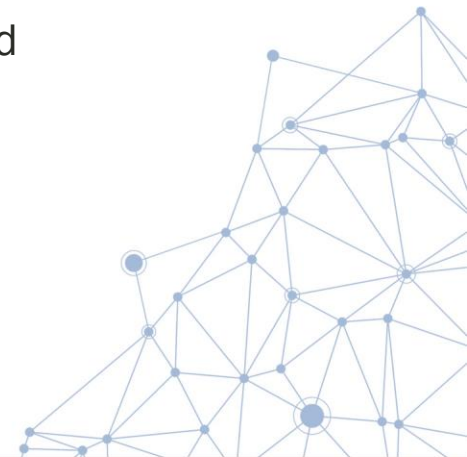
# Neighboring County Survey Results

- **Saratoga (2 responses)**

- Indicated mutual agreements to deploy staff for emergency evacuations/disaster response
- Warren County was instrumental in helping us to develop many of our plans. They are a partner that could be asked for assistance in a variety of disasters.
- Emergency Managers work together to respond to incidents and may work together to mitigate against incidents along shared vulnerabilities.
- Shared hazards of concern: Flooding along the Hudson - which serves as the boundary between a good portion our counties. Additionally, various incidents along the Northway. Also, large scale incidents (e.g .brush fire) along our rural border; All dams/flooding along common county borders.
- Information shared with Saratoga communities by the hazard mitigation plan, intercommunity communication often by the highway department leadership.
- Multi-county evacuations would require collaboration. Historically we have collaborated on shared hazards/events

- **No response**

- Essex accessed survey (No data-will contact to discuss)
- Hamilton County
- Washington County

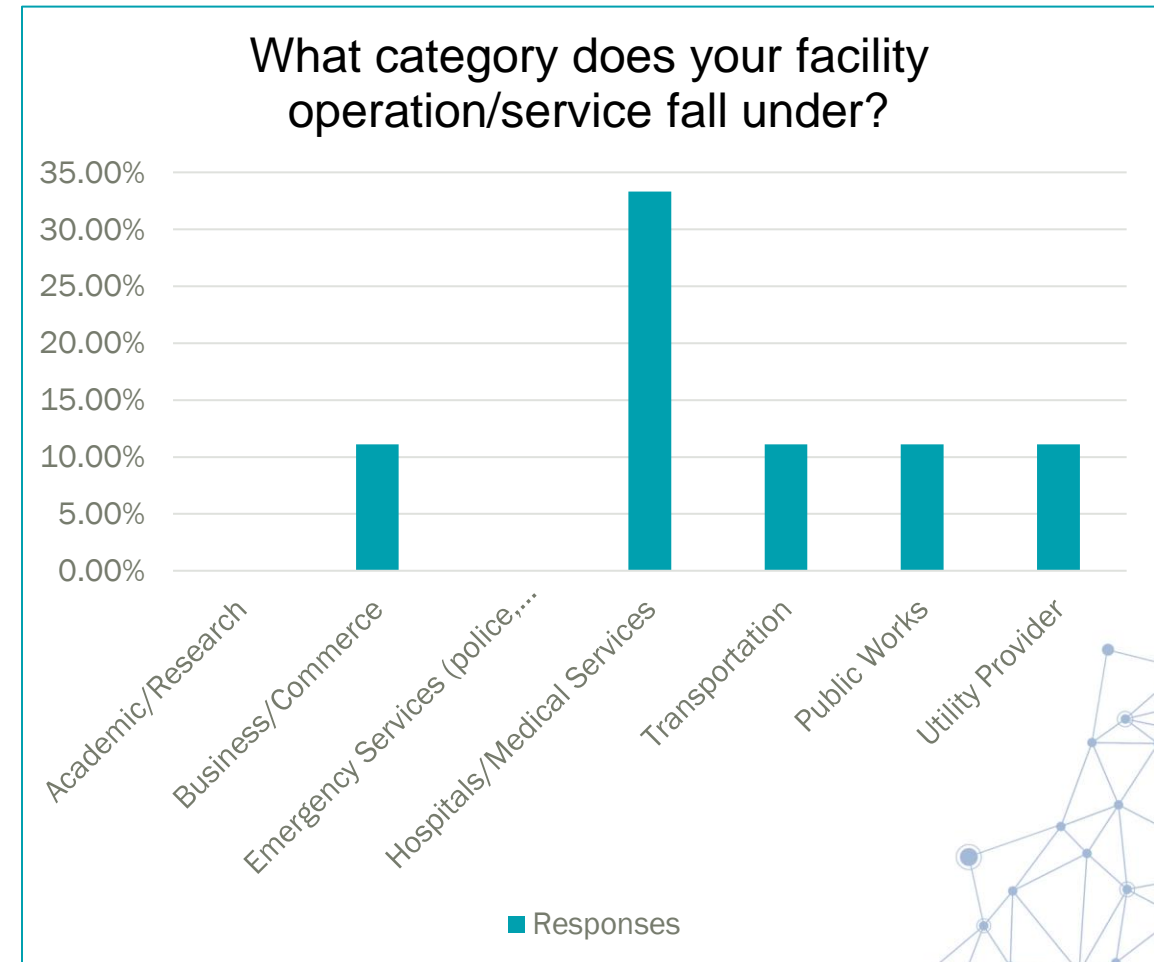






# Agency Survey Results

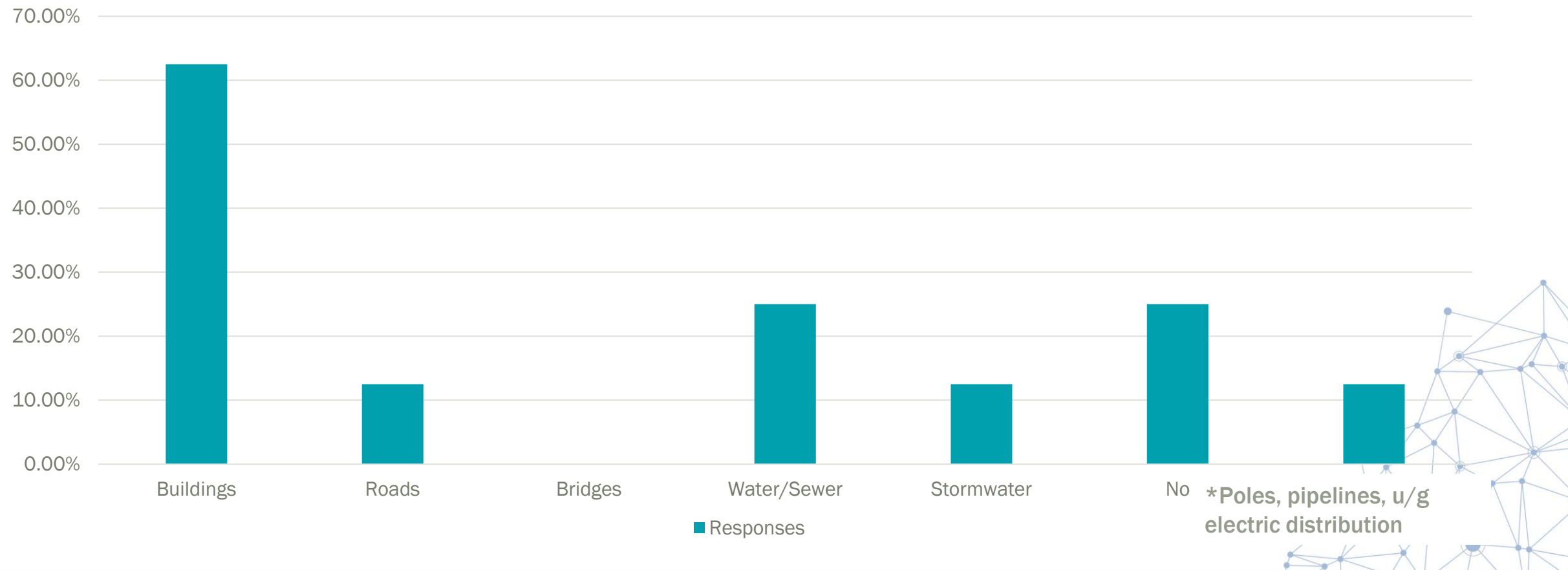
- 9 Respondents
  - National Grid
  - Warren County Health Services
  - SAIL
  - NYS Department of Health Glens Falls District Office
  - Lake George Regional Chamber of Commerce & CVB
  - Southern Adirondack Independent Living
  - Glens Falls Hospital
  - Greater Glens Falls Transit
  - Glens Falls Common Council





# Agency Survey Results

Does your organization maintain or manage any of the following within your designated service area?

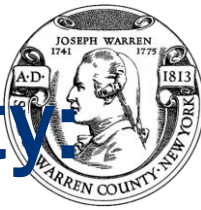


# Agency Survey - Hazard Vulnerability:



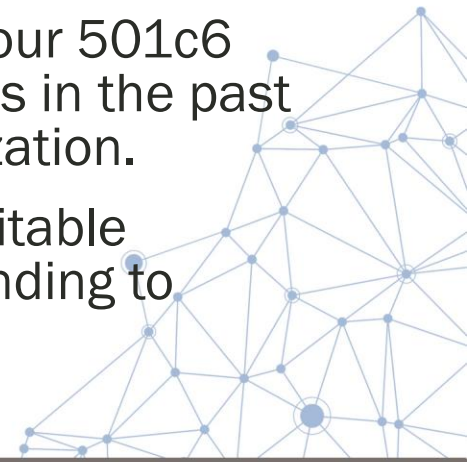
- Electric Substations and gas regulating stations. As we've all seen in the news with the recent vandalism with electric utility equipment, it is high on the priority list for our security teams.
- Salt mitigation to protect the lake. We currently use sand on the backside of our building/parking area and salt/sand mixture on the front. No other hazards as of this writing.
- Reliance on pre-identified municipal buildings and locations that are owned and maintained by City/Town municipalities for many of our activities.
- Our hub is the County Municipal Center. Vulnerabilities include fire, severe weather impacting the facility, loss of internet and utilities caused by weather or man-made factors"
- Road hazards - downed trees, winter driving conditions
- Industry along the river and watershed

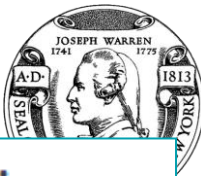




# Agency Survey - Programs to Reduce Vulnerability

- Tree Trimming program - each of our circuits are trimmed on 5-year cycles, that means every 5 years ""Main St in Queensbury"" will be inspected for danger trees and trimmed by one of our tree contractors.
- **"Computapole"** program. This is a program that has us inspect and get eyes on every piece of National Grid electric infrastructure throughout our territory. We identify potential hazards like rotting poles, broken or unbonded guy wires, blown lightening arrestors, or broken cross arms. Once they are reported, the issues are then sent to the field workers for repairs. This is also done in 5-year cycles for each of our circuits.
- We have a similar program for our gas distribution system regarding our Leak Prone Pipe program where we are replacing old cast iron mains and services with plastic. We have a gas corrosion team that inspects our pipelines to make sure they are still in spec.
- We were able to take advantage of the second round of PPP funding because of our 501c6 corporate status that helped us through the pandemic financially. Other strategies in the past have been to cut programs and not people to stay financially stable as an organization.
- Upgrading work from home opportunities if the facility is unusable, ensuring a suitable secondary location is available for staff that have to be in the office, providing funding to ensure IT and other equipment necessary to maintain operations is provided
- Sewage treatment plant power project





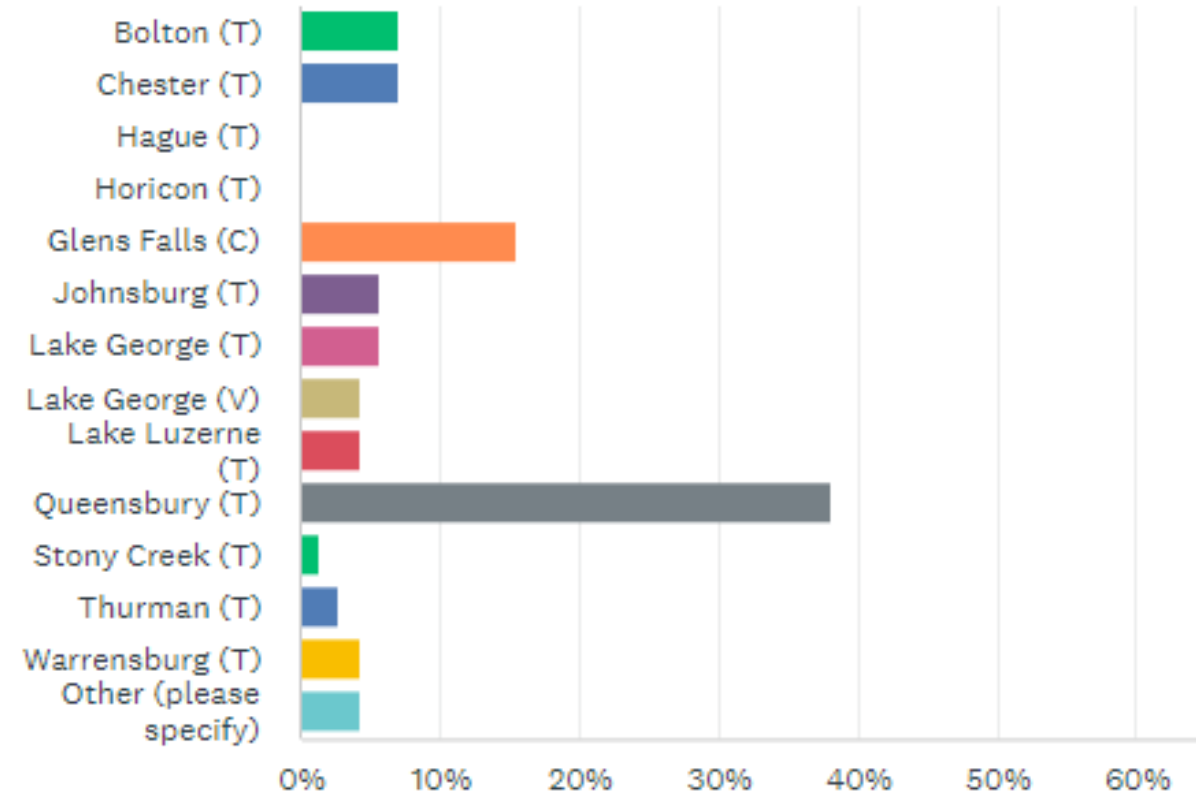
# Public Survey Results

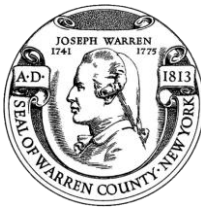
- 81 Responses
- 64% Completion Rate
- 8 Minutes to Complete (Avg)
- ~39 identified vulnerable areas/items

County streets Lake property Glens Falls Rd water due Road River  
flood drainage trees Hudson River None ice

Please indicate the municipality in which you live:

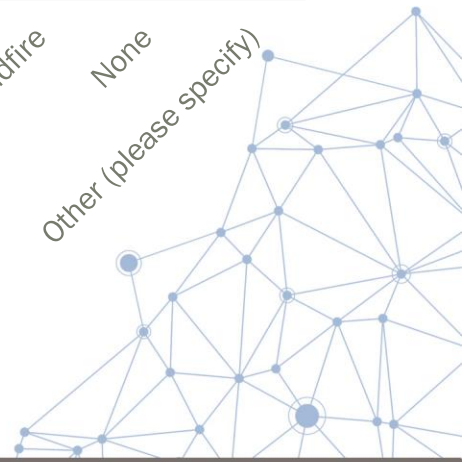
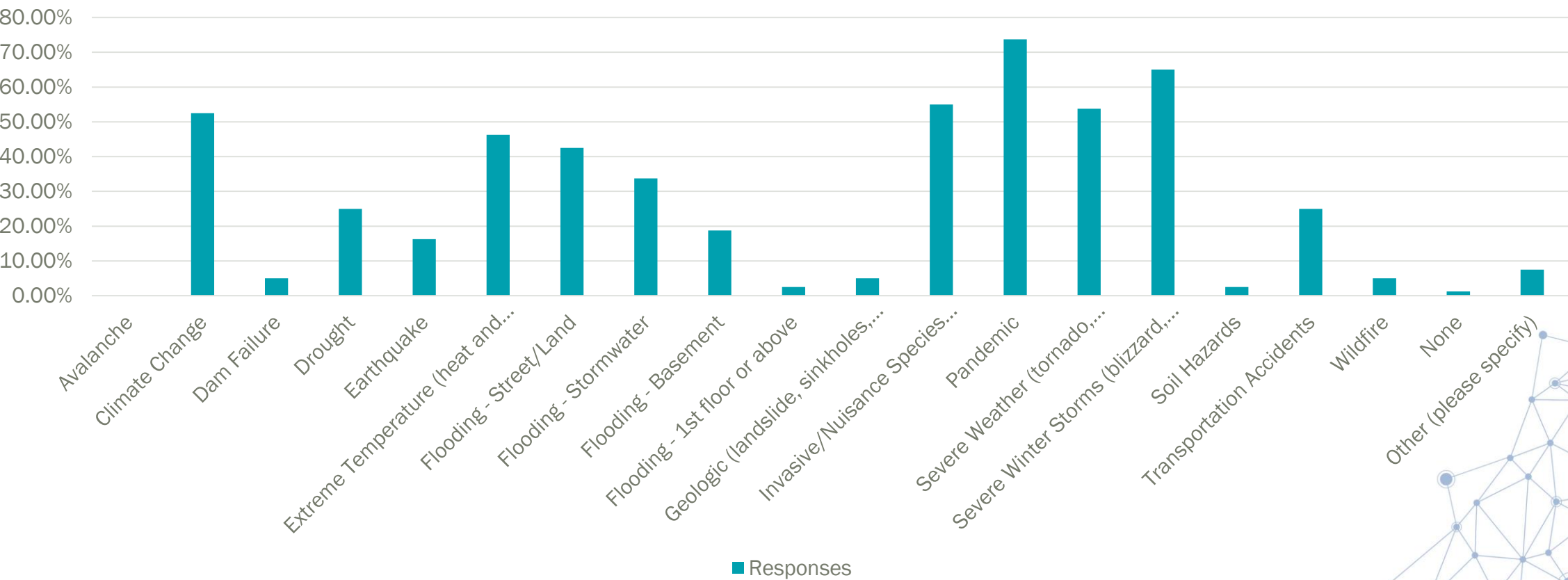
Answered: 71 Skipped: 10





# Public Survey Results: Hazards Experienced

In the past 10 years, which of the following hazard events have you experienced in Warren County?

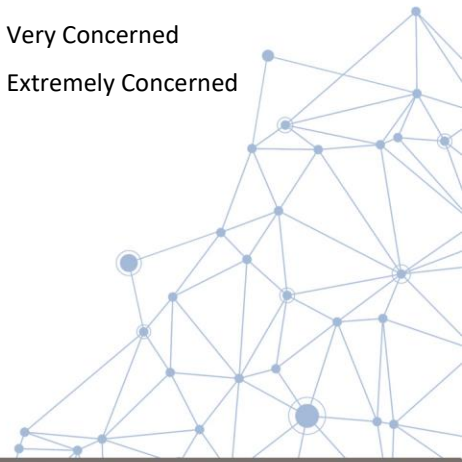
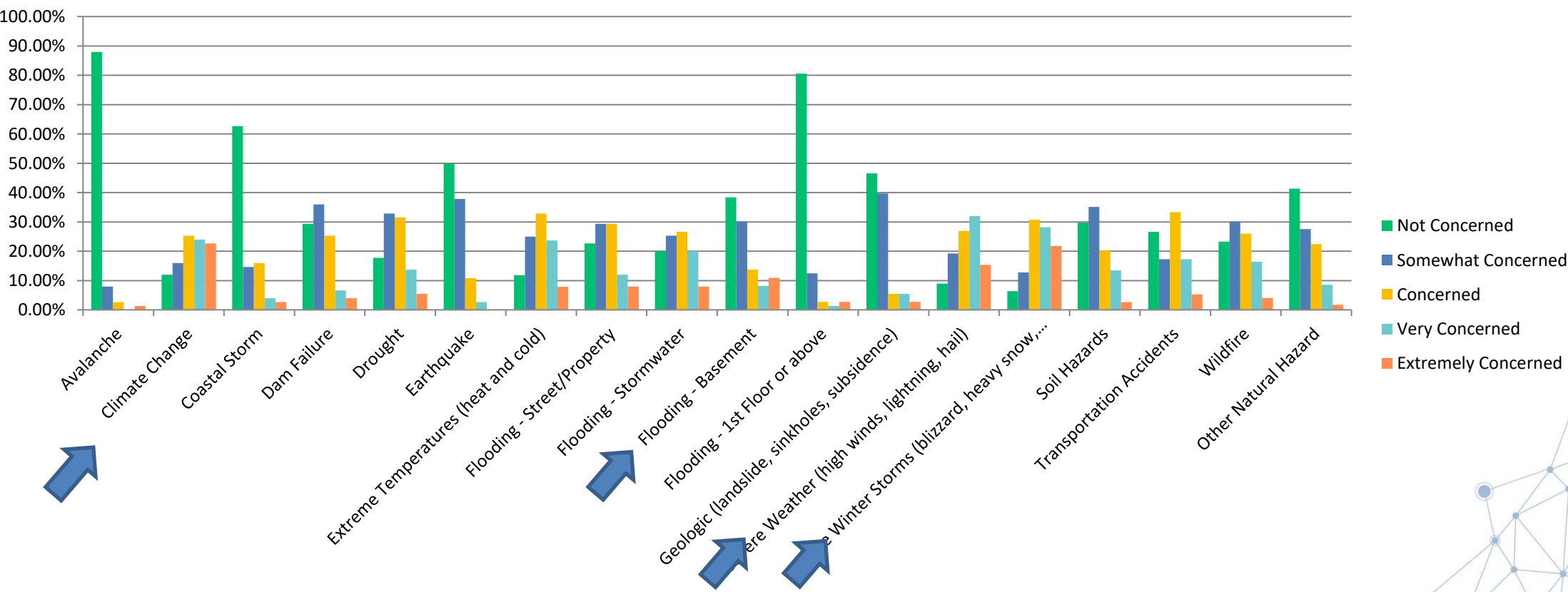






# Public Survey Results - Hazard Concerns

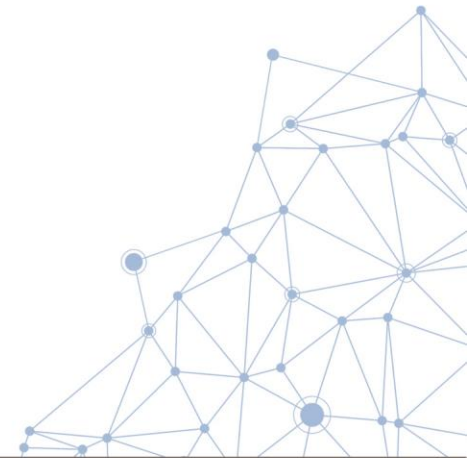
How concerned are you about the following hazards in Warren County? Please check one for each hazard.





# Problem Areas

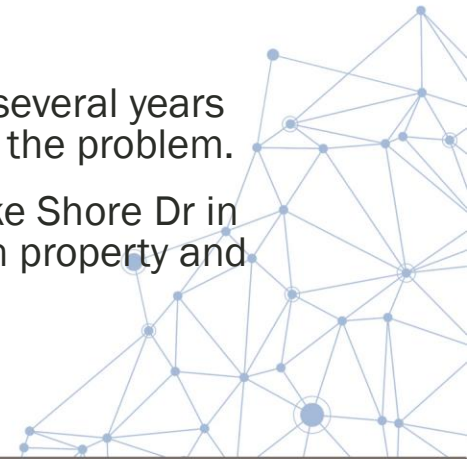
- Pine Tree Lane Diamond Point
- Always having power outages when others don't. They can last up to four days.
- Lack of back up power
- Loon Lake Dam Failure.
- Power outages due to lack of appropriate tree removal along power lines.
- Poor cell service. Lake Luzerne
- Queensbury boat launch, Glen Lake, Lake George, Hudson
- Susceptibility to flooding, poorly maintained dams owned by city of Glens Falls.
- Schools lack of back up power in the event power goes out and lack heating elements. Trees along residential roads that aren't cut back. Power drainage on roadways.
- Prone to power outages from trees on lines
- General back-up power, snow/ice blockage on highways
- Floodprone area on Meadowbrook Road @ Halfway Brook
- Low water levels in Kattskill by Lake George due to water management practices
- Apartment building for disabled and retired with all electric heat. No on demand generator.
- Located at 10 Manor Rd.

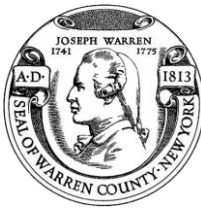




# Problem Areas, continued

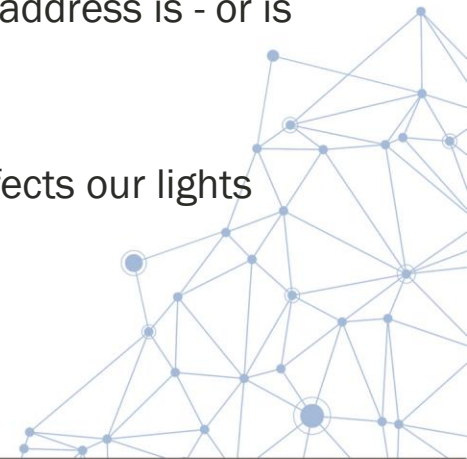
- 13th Lake Road, North River. The gabion walls are pushed out and look like they will give at any time. Also rocks fall in the middle of the road all the time.
- Flooding - 9N S/Hidden Valley Drive (Tubby Tubes-Lake Luzerne, NY 12846), due to a sewer drain that doesn't handle all the water, causing back up and ice/danger in winter. Trees down in my property from recent high winds (1275 Lake Avenue, Lake Luzerne, 12846)
- Water Tank control panel without power backup
- Ice jamming on Hudson River at 418 Bridge.
- Flooding on River Road
- Lake George sewage treatment plant has minimal security and is vulnerable to walk up attacks on infrastructure.
- Numerous roads and stream crossings could be subject to flood/storm damage.
- East End in Glens Falls is known for being a high water table area
- North Bolton Road at the foot of Church Hill Road is continually flooded due to the road having been raised several years ago. Raising the road removed all drainage possibilities and County officials refuse to do anything to correct the problem.
- Storm Drainage system that runs down the Lakeview Circle drive in the town of lake George and crosses Lake Shore Dr in the town of lake George and continues down to the lakefront between the Fairview Improvement association property and the lake view terrace property.

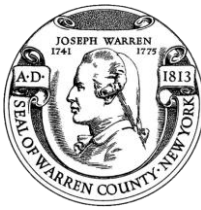




# Problem Areas, continued

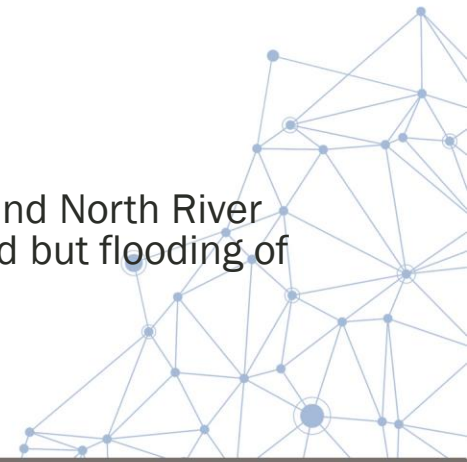
- Lack of municipal sewer and water
- Poor drainage for city streets (most streets in Glens Falls); raw sewage releases into the Hudson River (sometimes even if it only rains briefly); Poor tree maintenance causes downed branches in the high winds we now get for many months of the year.
- My road is collapsing into a stream. Many dead trees along the road. So called protected land around the watershed is not protected or monitored
- C/Glens Falls flood prone streets. Warren St, Mohican St, CR 19 T/Chester. SR 418 bridge & River Rd, Barton Mines RD  
Johnsburg
- Loon Lake Dam, Rt 8/9, Chestertown
- ZERO fragrance-free emergency shelters! Acute respiratory response / reactive airways when exposed for perfumes, scented products (ubiquitous), etc. ALSO: FEMA Flood Map makes ZERO sense! Unable to determine if my address is - or is not - in a flood plain: Fredella Avenue, Glens Falls, NY.
- Hudson River Basin Lake Luzerne to Corinth
- We have experienced power outages for as lengthy as 5 days. being on a deep well, the outage not only effects our lights and heat, but water as well.
- Electric
- Glens Falls dams on West Mountain

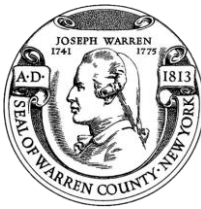




# Problem Areas, continued

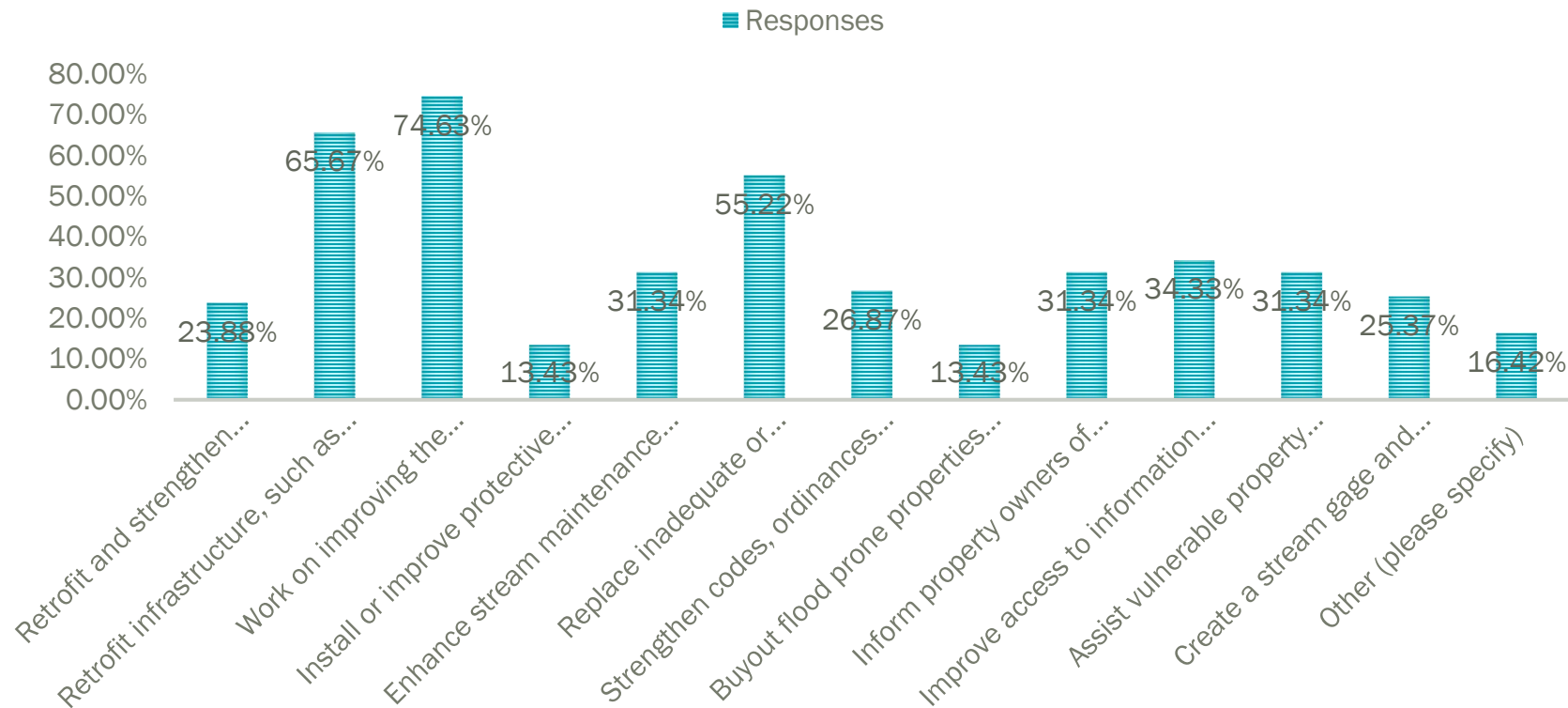
- Federal Hill Rd
- Areas along Hudson River and Schroon River are flooded frequently
- Lack of internet service in rural areas.
- Queensbury - Halfway Brook Area/flooding
- Warrensburg - Schroon River Area/flooding
- Chester & Horicon - Schroon River Area/flooding
- Meadowbrook Road, Queensbury - Flooding
- Lakeview Circle Drive Town of Lake George
- GFWWTP releasing sewage into Hudson after every heavy rainstorm.
- Inadequate storm drainage on streets
- Power cybersecurity concerns
- Flooding of the Hudson River in the spring occasionally that affects the State rt. 28 between North Creek and North River and includes part of the town North Creek at the train station. The historic Train station has been preserved but flooding of the Hudson in the spring has caused concern a number of years in the past ten.
- Thurman bridge
- Downtown Warrensburg from Schroon River flooding





# Priority Projects

What types of projects do you believe local, county, state, or federal government agencies could be doing to reduce the damage and disruption of disasters in Warren County?



## Top 3 project types to fund:

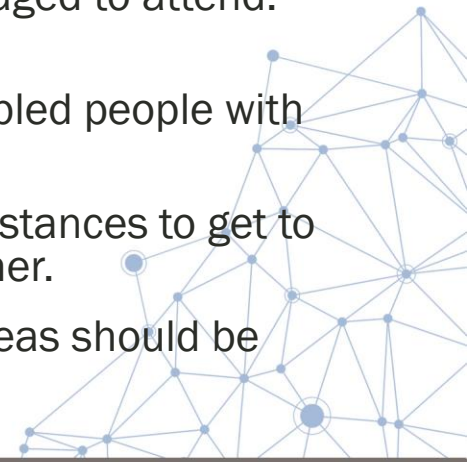
- 74.8% - Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities etc.)
- 65.6% - Retrofit infrastructure, such as elevating roadways and improving drainage systems
- 55.2% - Replace inadequate or vulnerable bridges and causeways





# Concerns

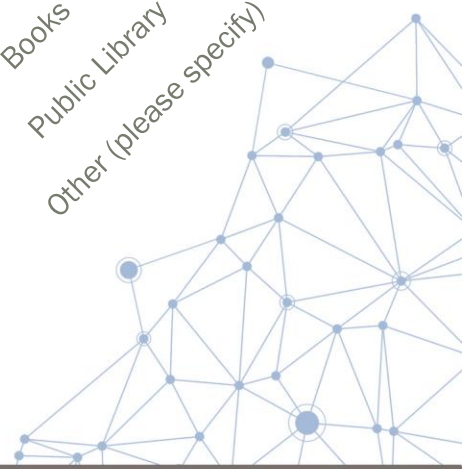
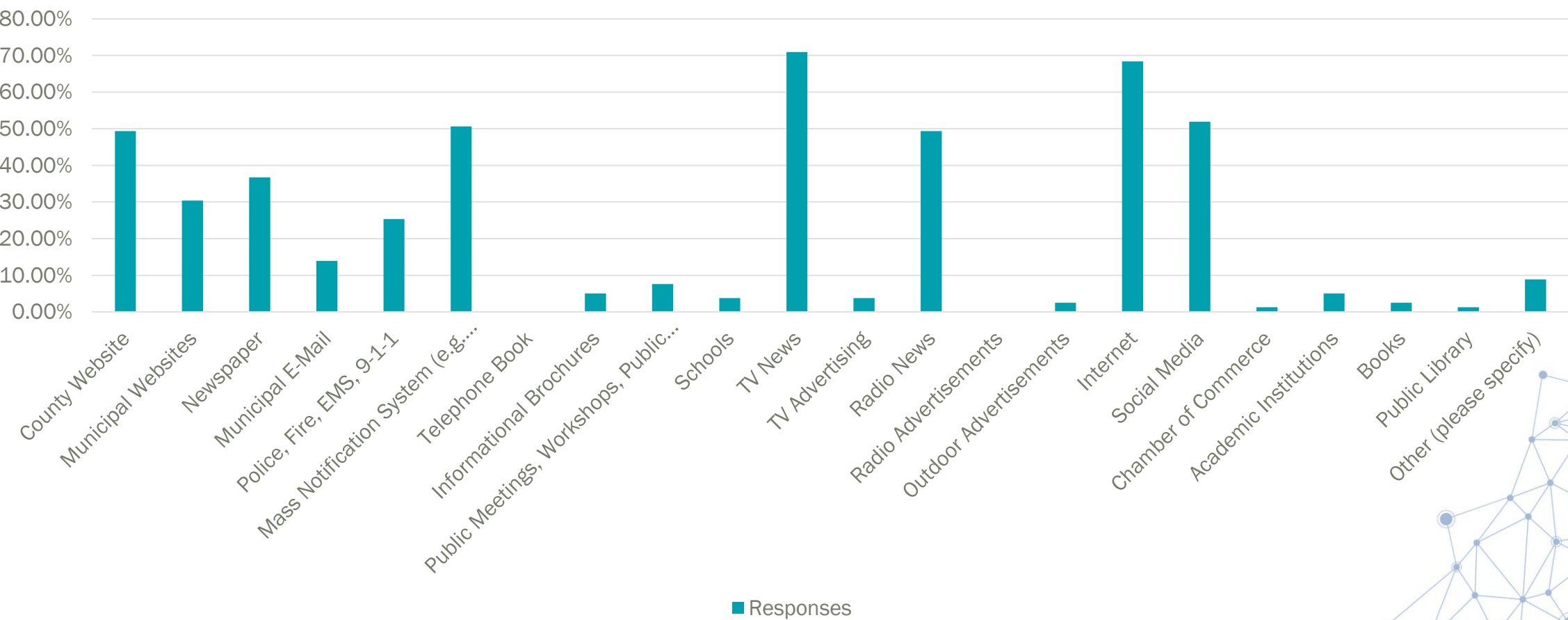
- Inadequate shelters in case of emergencies
- Remove tree limbs that hang over the 9L road before someone gets seriously injured
- I would appreciate receiving real time alerts from Warren County similarly to FEMA
- Each municipal government should be required to participate in this process. They should assess their community for potential hazards and develop a mitigation plan.
- Warren County needs to fix the drainage issue it CAUSED.
- I see that climate change is affecting us. One problem that we never experienced until recent years is algae blooms.
- I see climate change as one of the biggest concerns now and in the future that could and would impact a lot of weather -related hazard events. I think more projects that focus on taking care of our environment, like adopt a highway and stream clean up days, as a good thing to consider.
- Annual preparedness training at senior centers, at schools and in locations that citizens are encouraged to attend. create a citizen team to work with Emergency Management for Warren County
- Vastly improve ACCESSIBILITY for disabled people and Disaster Planning to include INPUT from disabled people with various disabilities; including respiratory
- During severe winter storms, county buildings need to close or open late as employees travel long distances to get to Warren County Municipal Center and should not have to use personal time in case of extreme weather.
- Extreme weather (heavy downpours and sudden storms) have increased greatly. Review of runoff areas should be reviewed.





# Effective Messaging Resources

How do you receive your information concerning a disaster? Check all that apply.





# Document Review on Sharepoint

- Access for document review
- Review in “desktop app” in track changes

OneDrive interface showing the 'Warren County (NY) HMP' folder. The 'Steering Committee' folder is circled in green, and a blue arrow points to it from the right.

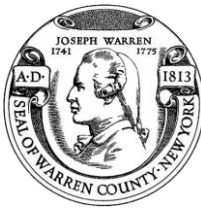
Name	Modified	Modified By	File size	Sharing
GIS	November 14, 2022	frankenfelds@warrencoun	4 items	Shared
Letters of Intent to Participate	September 16, 2022	Bianco, Cynthia	14 items	Shared
Outreach Materials	November 30, 2022	Bianco, Cynthia	10 items	Shared
<b>Steering Committee</b>	January 24	Bianco, Cynthia	1 item	Shared
Survey				
SWCD				

OneDrive interface showing the 'Documents for Review' folder. The '5.2 - HOC ID\_Warren\_rev.docx' file is circled in green, and a blue arrow points to it from the left.

Name	Modified	Modified By	File size
Old	January 31	Bianco, Cynthia	6 items
Warren_TOC.docx	January 25	Bianco, Cynthia	205 KB
<b>5.2 - HOC ID_Warren_rev.docx</b>	6 days ago	Bianco, Cynthia	422 KB
Section 1-Introduction_rev.docx	6 days ago	Bianco, Cynthia	1.05 MB
Section 2-Plan Adoption.docx	January 25	masona@warrencountyny	360 KB
Section 5.1_Methodology_rev.docx	6 days ago	Bianco, Cynthia	517 KB

OneDrive interface showing the 'Steering Committee' folder. The 'Documents for Review' folder is circled in green, and a blue arrow points to it from the left.

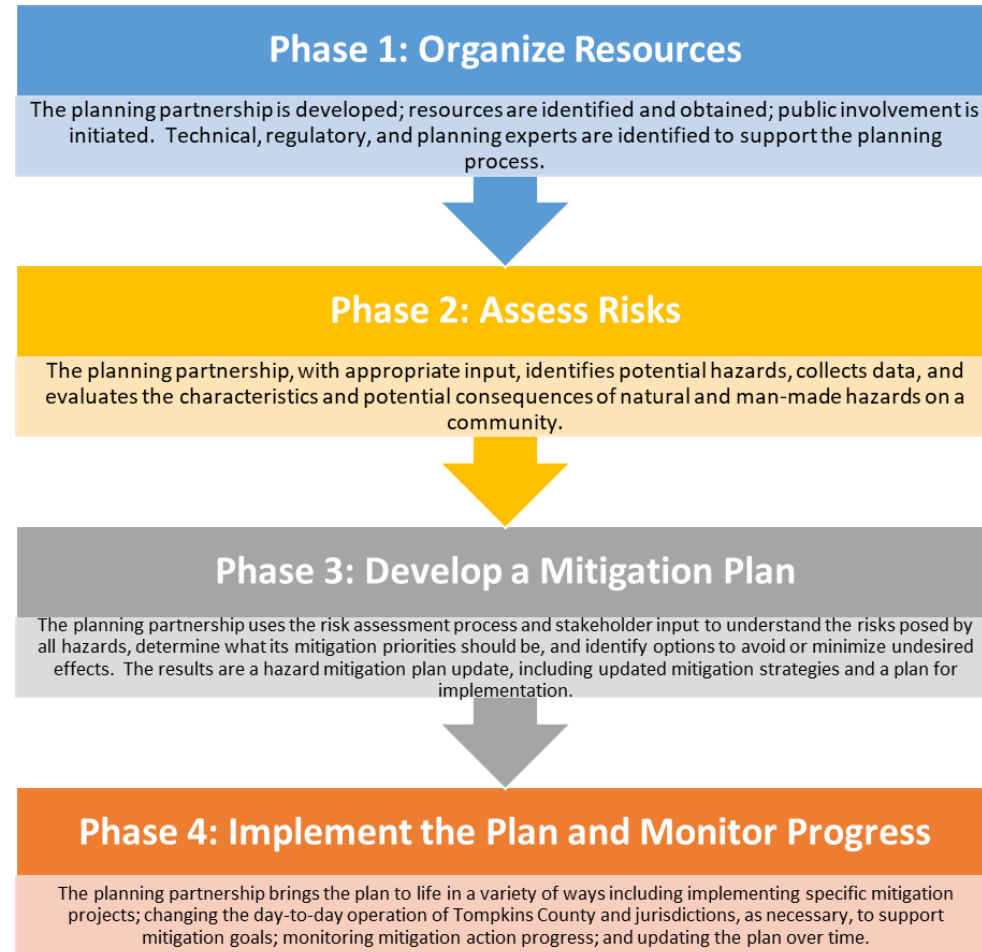
Name	Modified	Modified By	File size	Sharing
<b>Documents for Review</b>	January 24	Bianco, Cynthia	6 items	Shared



# Draft Plan Review – Section Contents

## Volume I

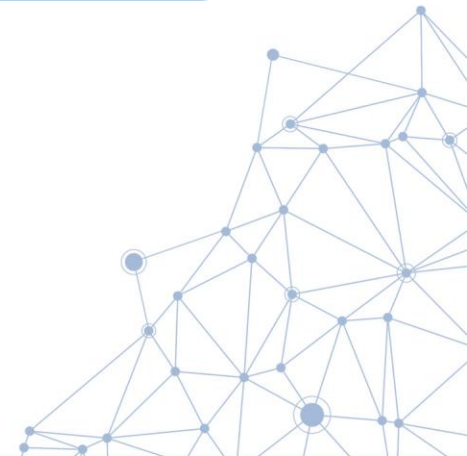
- **Section 1 – Introduction**
  - Mitigation Planning Overview
  - Participating Jurisdictions
  - 2023 Updates
- **Section 2 – Plan Adoption**
  - Adoption Process
- **Section 3 – Planning Process**
  - Participants
  - Activities
  - Ongoing Process



HAZUS-MH was applied to

- Identify Hazards (Phase 2)
- Profile Hazards (Phase 2)
- Perform a Vulnerability Assessment (Phase 2) including:
  - Inventory Assets
  - Estimate Losses
  - Evaluate Development Trends
  - Present Results of Risk Assessment

These results provide an input to Phase 3.

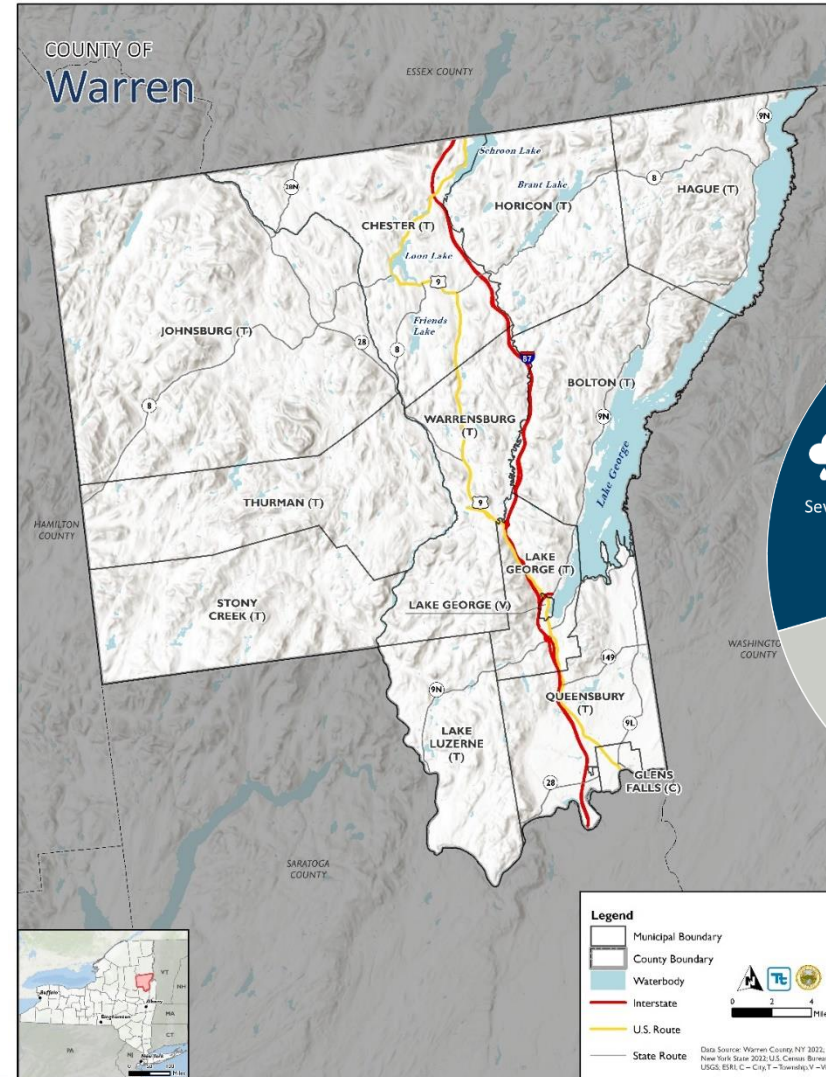




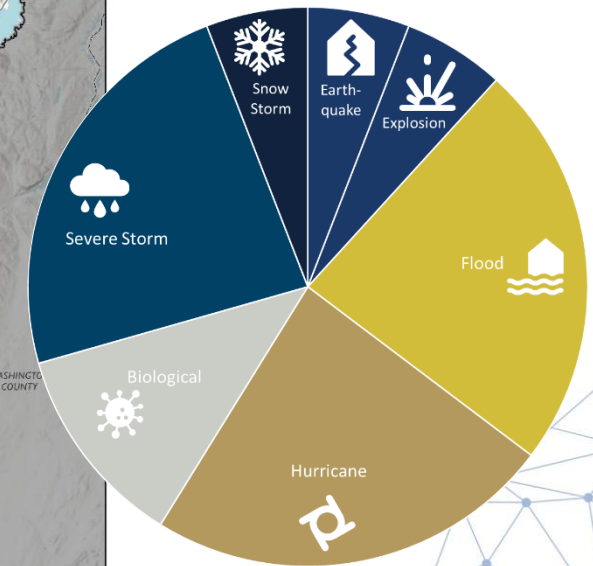


# Draft Plan Review – Section Contents

- **Section 4 – County Profile**
  - History & Physical Setting
  - Population and Demographics
  - Major Hazard Event History
  - General Building Stock
  - Land Use and Population Trends
  - Critical Facilities & Lifelines
- **Section 5 – Risk Assessment**
  - Hazards of Concern
  - Hazard Ranking
  - Hazard Profiles

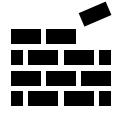


Warren County Hazard Events





# Hazards Profiles – Section 5.4



- Dam Failure



- Disease Outbreak



- Earthquake



- Extreme Temperature



- Flood



- Infestation and Invasive Species



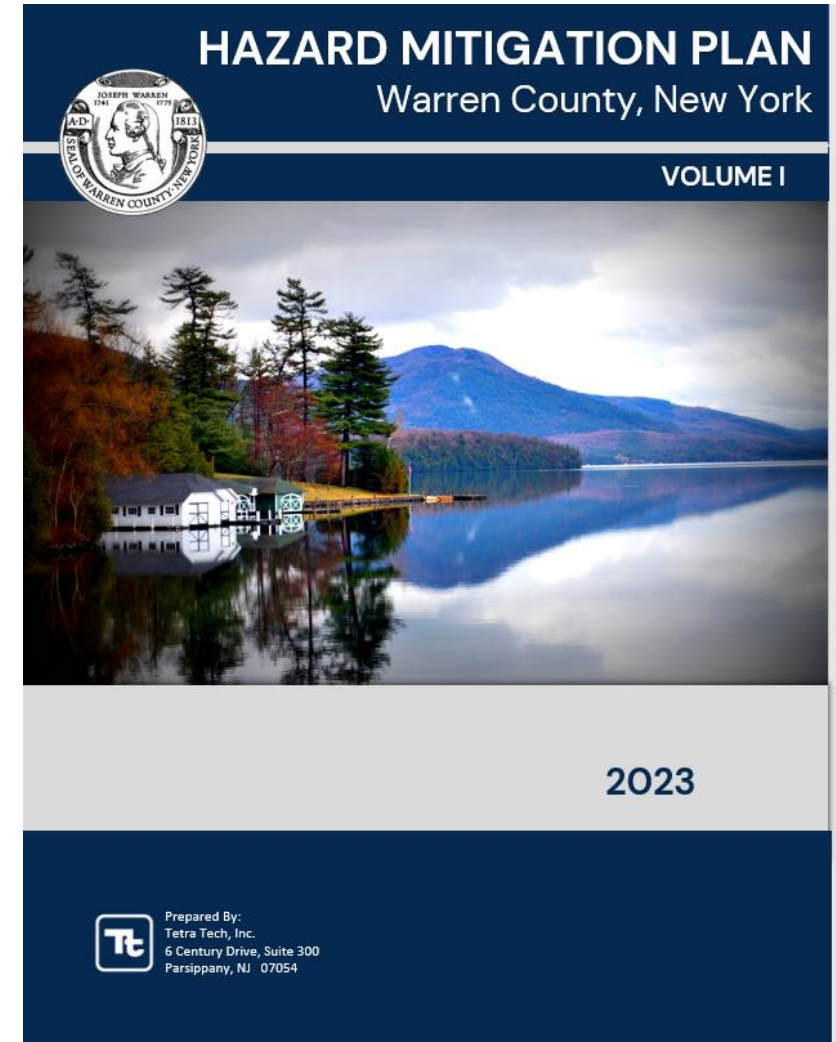
- Severe Storm



- Severe Winter Storm



- Wildfire







# Draft Plan Review – Section Contents

- Section 6 – Mitigation Strategies
  - Past accomplishments
  - Goals and Objectives
  - Capability Assessment
    - Available plans, programs, & resources
    - Administrative and technical capabilities
    - Fiscal capabilities
  - Mitigation strategy development and update
    - Action identification
    - Evaluation and prioritization
    - Benefit/cost review

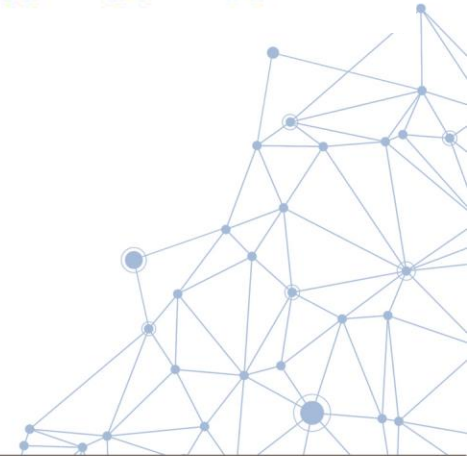
*To create communities whose daily activities reflect a comprehensive commitment by government, business, non-profit organizations, socially vulnerable populations, and the public to eliminate or reduce risks and adverse impacts from natural, **and human-caused** hazards.*

Discussion item: Omit human-caused hazards to align with FEMA HMP focus.



# Draft Plan Review – Section Contents

- Section 7 – Plan Maintenance
  - HMP Coordinator
  - Ongoing Planning Committee
  - Monitoring
  - Continuous evaluation and progress reports
    - FEMA Worksheets and BATool<sup>SM</sup>
  - Updating
  - Integration of hazard mitigation with existing and future programs
  - Continued public involvement





# BATool<sup>SM</sup>

- Online progress reporting for individual mitigation actions – pre-populated by Tetra Tech

[Prev Action](#) \* Action ID: TPQ - 1 [Next Action](#)

*Review of this Action has not started* [Add New Action](#)

[View Update History](#)

Please review and update this action by following the steps below and updating any/all fields (as needed).

*Step 1: Enter your name as the 'Reviewer' (then step 2 will be enabled for selection).*

\* Reviewer:

*Step 2: Update the 'Action Status' field. Please continue to review and update all other fields, as needed.*

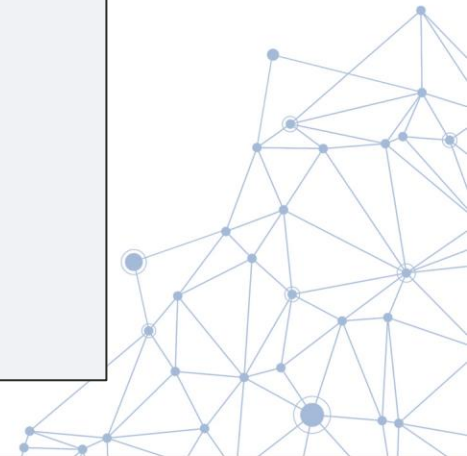
\* Action Status:

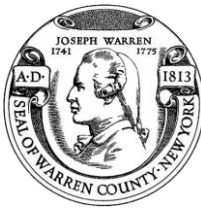
Previous Action Status:

Project/Action Status Comments:

\* Description of the Action:

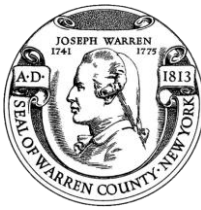
Specific Problem Mitigated:





# Plan Maintenance Matrix

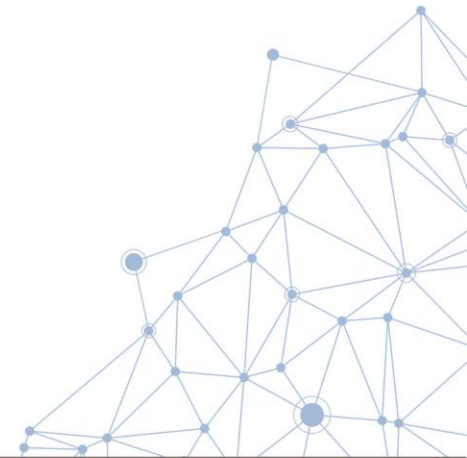
Task	Approach	Timeline	Lead Responsibility	Support Responsibility
Monitoring	Preparation of status updates and action implementation tracking as part of submission <b>for Annual Progress Report.</b>	January or upon major update to Comprehensive Plan or major disaster	Jurisdictional points of contact identified in Section 8 (Planning Partnership) and Section 9 (Jurisdictional Annexes)	Jurisdictional implementation lead identified in Section 8 (Planning Partnership) and Section 9 (Jurisdictional Annexes)
Integration	In order for integration of mitigation principles action to become an organic part of the ongoing county and municipal activities, <b>the county will incorporate the distribution of the safe growth worksheet (see 7.1.2 below) for annual review</b> and update by all participating jurisdictions.	January each year with interim email reminders to address integration in county and municipal activities.	HMP Coordinator and jurisdictional points of contact identified in Section 8 (Planning Partnership) and Section 9 (Jurisdictional Annexes)	HMP Coordinator
Evaluation	Review the status of previous actions as submitted by the monitoring task lead and support to assess the effectiveness of the plan; compile and finalize the Annual Progress Report	Finalized progress report completed by January 15 of each year	Steering Committee; Plan Maintenance element	Jurisdictional points of contacts identified in Section 9 (Jurisdictional Annexes)
Update	<b>Reconvene the planning partners</b> , at a minimum, every 5 years to guide a comprehensive update to review and revise the plan.	Every 5 years or upon major update to Comprehensive Plan or major disaster	Warren County HMP Coordinator	Jurisdictional points of contacts identified in Section 9 (Jurisdictional Annexes)

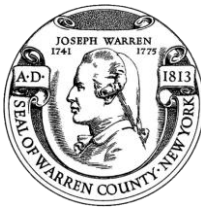


# Draft Plan Review – Section Contents

## Volume II

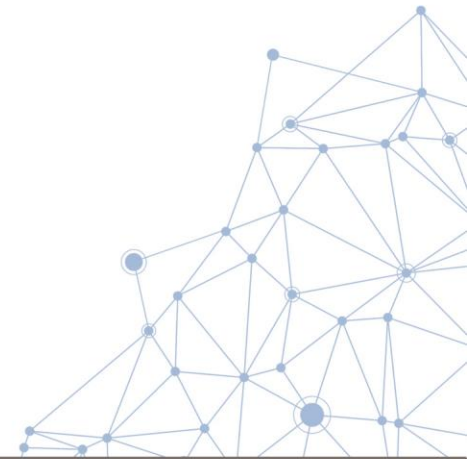
- **Section 8 – Planning Partnership**
  - Participating jurisdictions
  - Introduce jurisdictional annexes
- **Section 9 – Municipal Annexes**
  - Point of Contact
  - Municipal Profile
  - Capabilities
  - NFIP Participation
  - Risk Assessment
  - Critical Facilities
  - Status of Past Mitigation Actions
  - Current Mitigation Actions
  - Future Needs





# Draft Plan Review – Section Contents

- Appendices
  - Appendix A – Plan Adoption
  - Appendix B – Participation Matrix
  - Appendix C – Meeting Documentation
  - Appendix D – Public and Stakeholder Outreach Documentation
  - Appendix E – County Profile and Risk Assessment Supplementary Data
  - Appendix F – Critical Facilities
  - Appendix G – FEMA Plan Review Tools
  - Appendix H – NYS DHSES 2017 Mitigation Planning Standards







# Steering Committee Review Guidance

- Documents posted on OneDrive for collaborative review
  - OneDrive guidance will provide direction on how to edit/comment
- Input requested
  - Provide additional or specific information
  - Correct errors or omissions
- All feedback requested on or before July 12<sup>th</sup>
  - Feedback will be incorporated as appropriate before Public Review
- Plan sections to be posted on the Warren HMP website for a 30-day review period
- Public feedback to be incorporated as appropriate prior to submittal to NYSDHSES/FEMA for agency review





# Plan Adoption and Timeline

- Information on the planning process is available here: (<https://www.warrencountynyorkhmp.com>)
- Draft plan sections will be posted for public review and comment beginning August 1st for 30 days
- The plan will be submitted for review and approval by NYSDHSES and FEMA in November
- Adoption of the plan by the community is required to be deemed APPROVED by FEMA.

The screenshot shows the website for the Warren County Hazard Mitigation Plan 2023 Update. The header is dark blue with the Warren County seal and the title 'WARREN COUNTY HAZARD MITIGATION PLAN 2023 UPDATE'. Below the header is a navigation bar with links: Home, About, What Is Mitigation, Meetings, Calendar, Explore the Plan, and Additional Information. The main content area is white and features the heading 'Explore the Plan'. Below this, it says '2023 Warren County Hazard Mitigation Plan Update' and 'Sections of the 2023 Warren County HMP update will be posted as available.' There is a section titled 'Municipal Annexes' with a list of annexes and a 'Download' link for each:


Municipal Annexes	Download
• 9.02_Town of Bolton	Download
• 9.03_Town of Chester	Download
• 9.04_City of Glens Falls	Download
• 9.05_Town of Hague	Download
• 9.06_Town of Horicon	Download
• 9.07_Town of Johnsbury	Download
• 9.08_Town of Lake George	Download
• 9.09_Village of Lake George	Download
• 9.10_Town of Lake Luzerne	Download



# In-Kind Services Tracking

- Use on-line survey: <https://www.surveymonkey.com/r/WarrenNYHMPInKind>
- Submit form to Jim Lieberum at [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Name of Team Member:							
Correspondence Type	Meeting Name, Municipality	Date	Start Time	End Time	# of Hours	Agenda/ Sign In?	Notes (include meeting topic, how HMP was discussed, etc.)
Meeting	Chiefs and Fire Advisory Board Meeting					Yes - sign-in	Discussed the HMP update
Meeting	Town of ?? Board Meeting						Discussed the HMP update
Phone Call	Town of ??phone call					No	Spoke with the Town about the HMP process and their responsibilities in participating
Meeting	Town of ?? Board Meeting					Yes - agenda	



### Warren County HMP - In-Kind Tracker

Warren County received FEMA funding to update the Hazard Mitigation Plan (HMP). To help meet the required 25% match, the County will use in-kind services.

Please use this form to document your time spent working on the HMP. This includes attending meeting, conference calls, working on your municipal annex, reviewing sections of the plan, etc.

If you have any questions, please reach out to Cynthia Bianco ([cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com) | 973.630.8044).

\* Name

\* Title

\* Jurisdiction

Please document your time spent working on the HMP:

Date

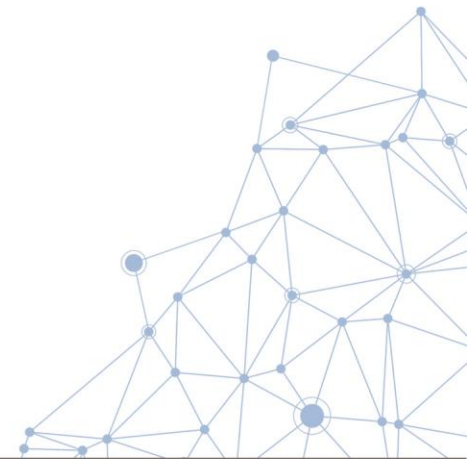
# Hours





# Next Steps

- Finalize Jurisdictional Annexes – in progress, drafts posted on OneDrive and [www.warren](http://www.warren)
- Steering Committee Plan Review – Now through July 12th
- Update Plan Based on Steering Committee Feedback
- Draft Posted for Public Review and Comment – August 1<sup>st</sup> – 30 Days
- Submit to NYS DHSES and FEMA – September 2023
  - Estimated 45-day review period
- BATool<sup>SM</sup> Webinar to Review Plan Maintenance
- Plan Adoption by County and Participating Municipalities



# Questions?





## Warren County Emergency Services Project Contacts

Jim Lieberum, CPESC  
[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)

Ann Marie Mason  
Emergency Services Director  
[masona@WarrenCountyNY.gov](mailto:masona@WarrenCountyNY.gov)

## Tetra Tech Project Contacts

Cynthia Addonizio-Bianco, Project Manager  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM, Lead Planner  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



Thank  
You!





## APPENDIX D. PUBLIC AND STAKEHOLDER OUTREACH

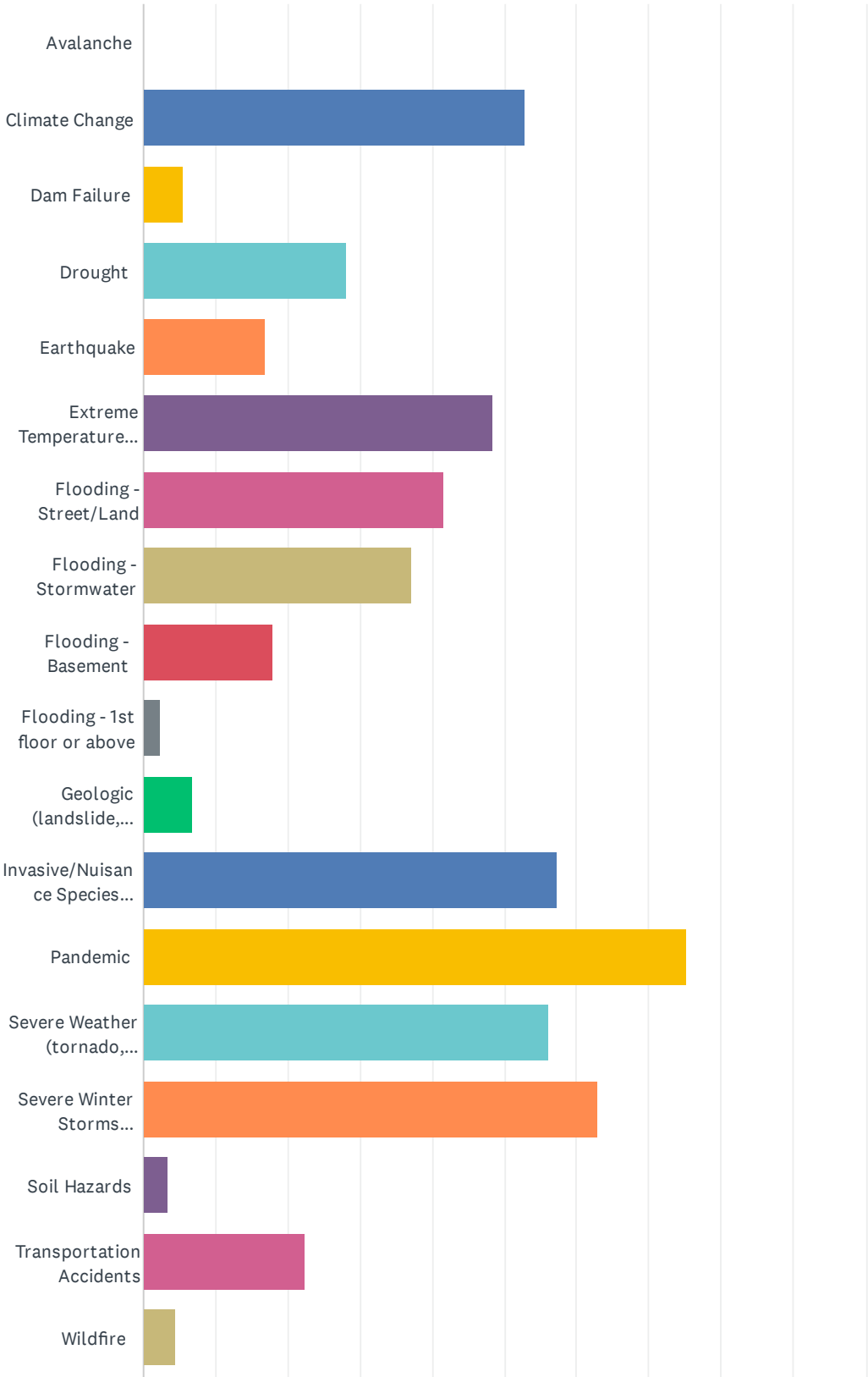
This appendix provides documentation of public and stakeholder outreach. Stakeholder involvement in this planning process was broad and productive as discussed and further documented in Section 3 (Planning Process). Public and stakeholder input has been incorporated throughout this HMP as appropriate, as identified in Section 3 and the References section, as well as within specific mitigation initiatives identified within the jurisdictional annexes (Section 9). Respondent feedback filtered by jurisdiction is included in each jurisdictional annex as available to provide an indication of community resident concerns related to natural hazards.

### D.1 WARREN COUNTY CITIZEN SURVEY RESULTS

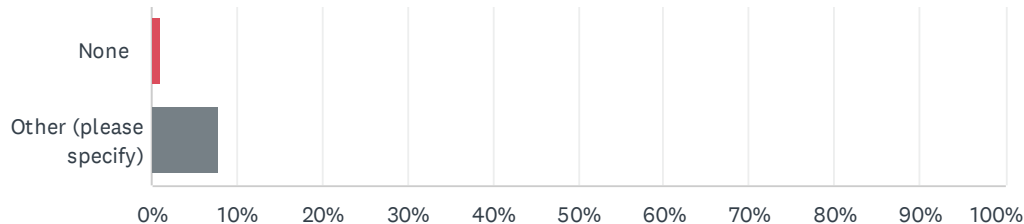
This section contains information and results gathered from the Warren County Citizen Survey. The main objective of this survey was to gather information from citizens regarding their level of knowledge regarding hazard vulnerability and knowledge of hazard mitigation information for their local communities. Over 90 respondents completed this survey over a period of 12 months during the planning process. The survey was available on Warren County website and the HMP website at: <https://www.warrencountynewyorkhmp.com>. The survey results are provided in the following pages, with personal information redacted.

Q1 In the past 10 years, which of the following hazard events have you experienced in Warren County? Check all that apply.

Answered: 89    Skipped: 1



# Warren County Hazard Mitigation Plan Update - Public Survey



ANSWER CHOICES	RESPONSES	
Avalanche	0.00%	0
Climate Change	52.81%	47
Dam Failure	5.62%	5
Drought	28.09%	25
Earthquake	16.85%	15
Extreme Temperature (heat and cold)	48.31%	43
Flooding - Street/Land	41.57%	37
Flooding - Stormwater	37.08%	33
Flooding - Basement	17.98%	16
Flooding - 1st floor or above	2.25%	2
Geologic (landslide, sinkholes, subsidence)	6.74%	6
Invasive/Nuisance Species (harmful algal bloom, spotted lanternfly, etc.)	57.30%	51
Pandemic	75.28%	67
Severe Weather (tornado, thunderstorm, hail)	56.18%	50
Severe Winter Storms (blizzard, heavy snow, ice)	62.92%	56
Soil Hazards	3.37%	3
Transportation Accidents	22.47%	20
Wildfire	4.49%	4
None	1.12%	1
Other (please specify)	7.87%	7
Total Respondents: 89		

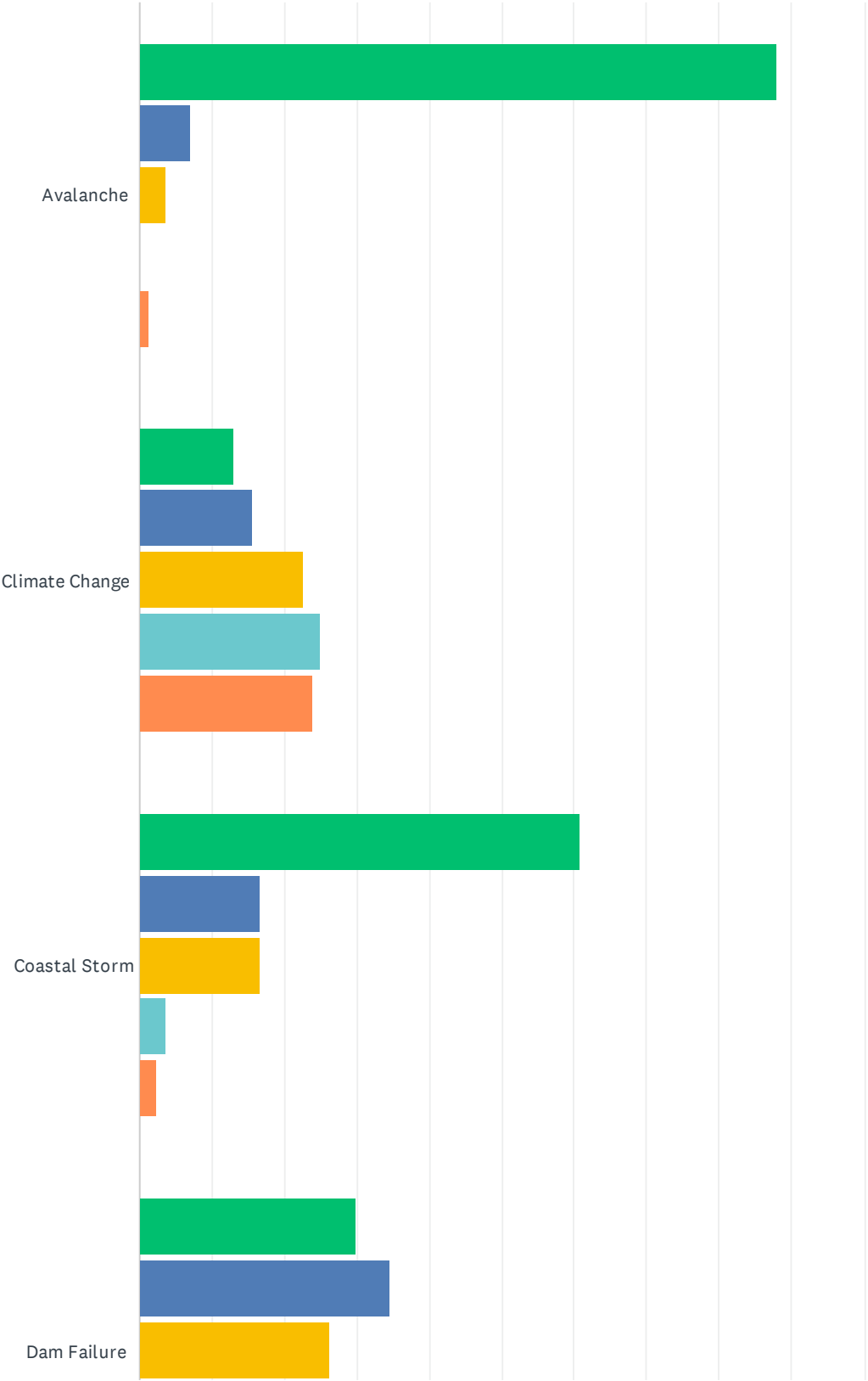
#	OTHER (PLEASE SPECIFY)	DATE
1	Air Quality Danger from Canadian Wildfires	8/2/2023 8:24 AM
2	Spongy Moths	12/21/2022 10:17 AM
3	salt runoff into my private well near Church Hill Road in Bolton Landing	12/11/2022 10:06 AM
4	high winds; raw sewage releases into the Hudson River	12/10/2022 11:36 AM
5	Tree failures. Blocking the road	12/10/2022 8:19 AM

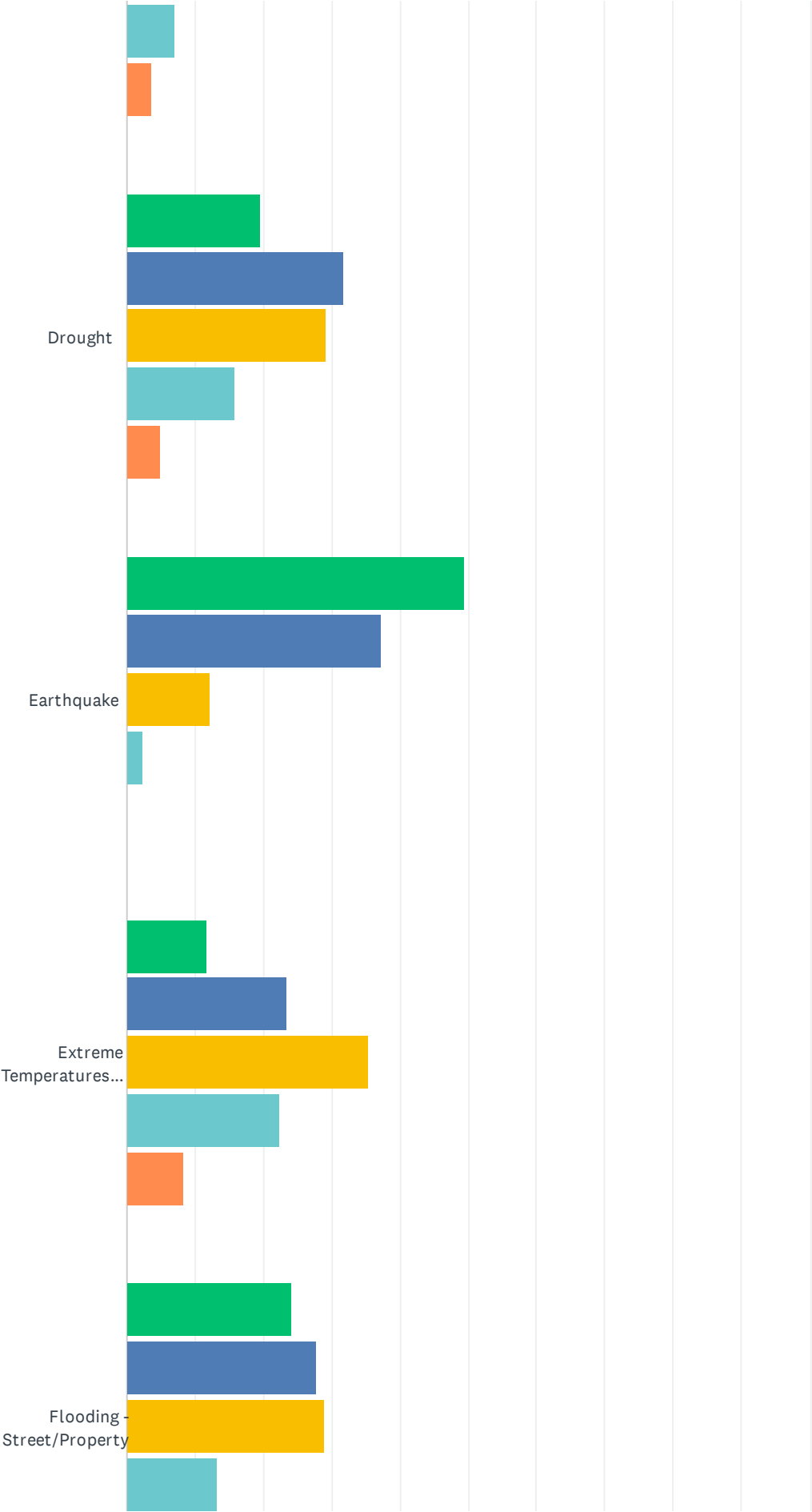
## Warren County Hazard Mitigation Plan Update - Public Survey

6	Sewage backup from street to basement, sewage gas fumes in HVAC floor vents	12/9/2022 9:35 PM
7	tree fell on house	12/9/2022 8:50 PM

Q2 How concerned are you about the following hazards in Warren County?  
Please check one for each hazard.

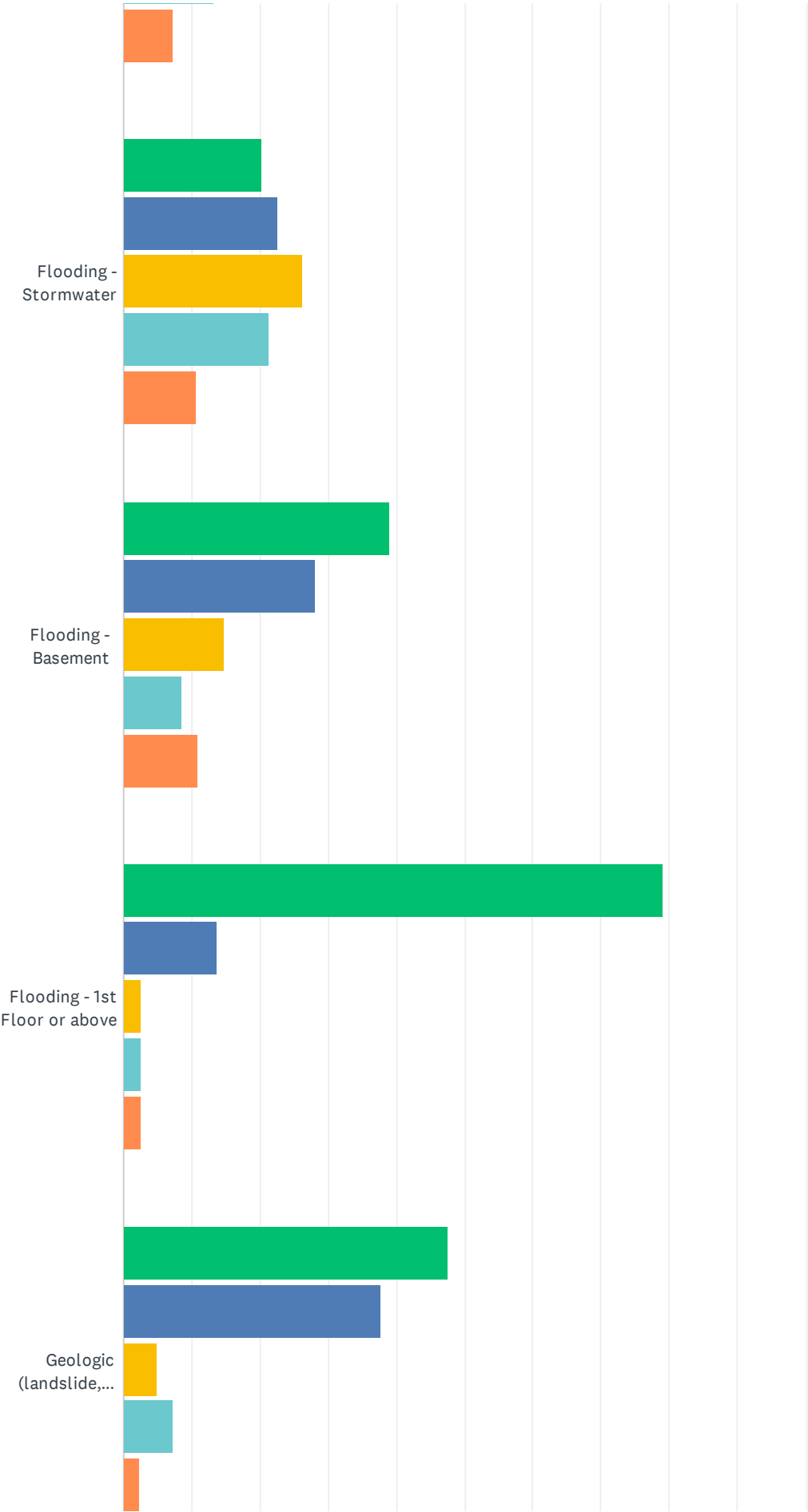
Answered: 89    Skipped: 1



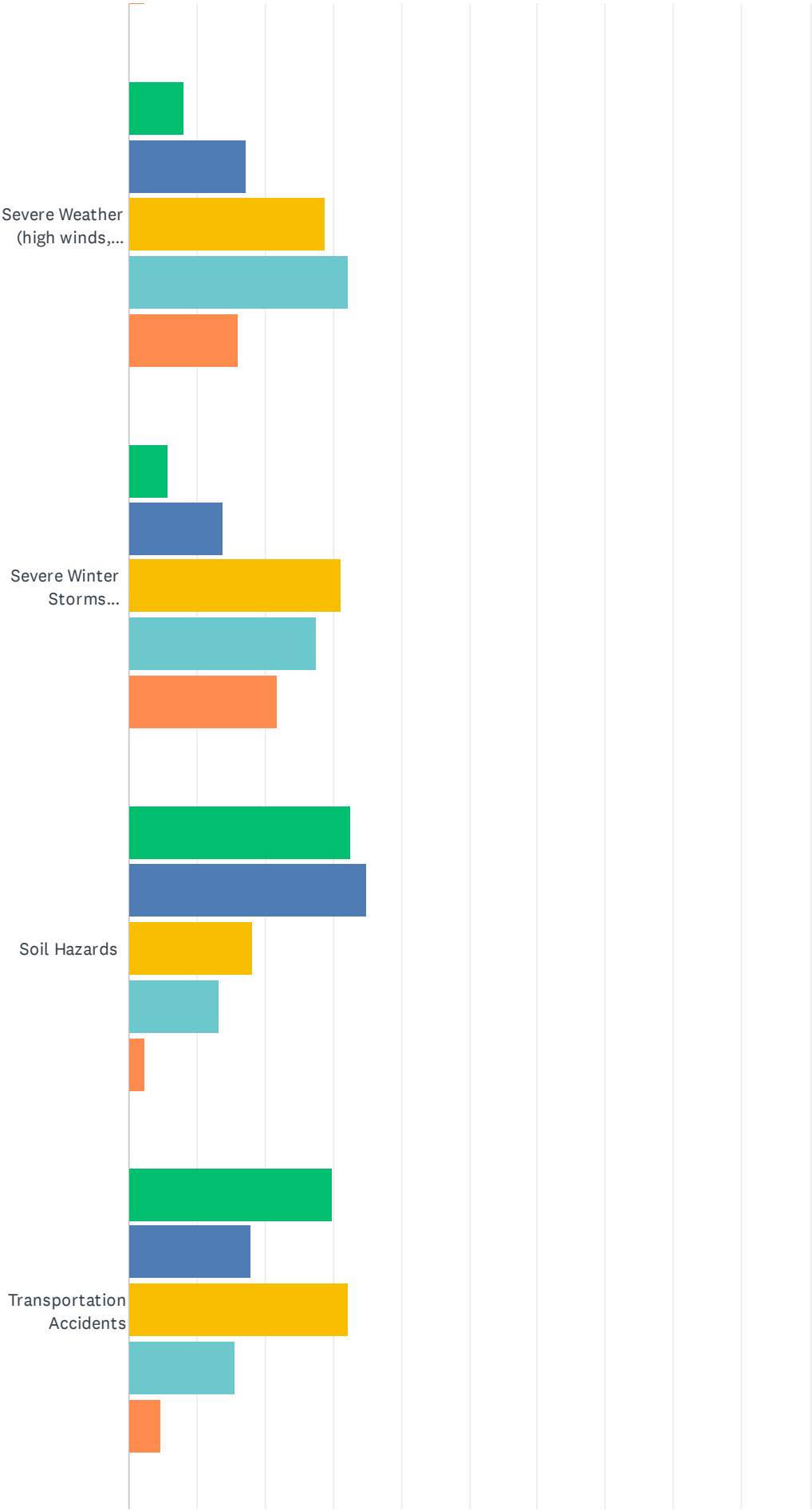




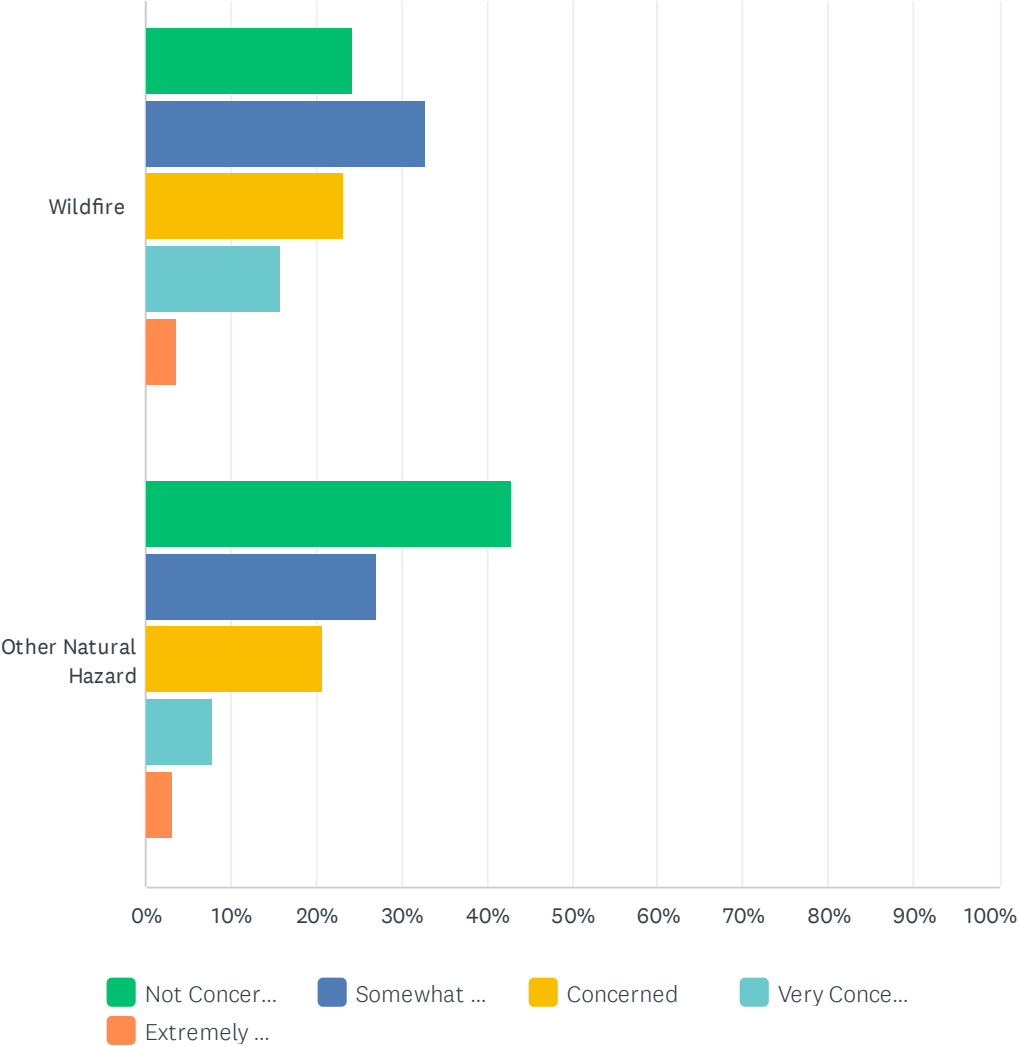
Warren County Hazard Mitigation Plan Update - Public Survey



Warren County Hazard Mitigation Plan Update - Public Survey



Warren County Hazard Mitigation Plan Update - Public Survey



# Warren County Hazard Mitigation Plan Update - Public Survey

	NOT CONCERNED	SOMEWHAT CONCERNED	CONCERNED	VERY CONCERNED	EXTREMELY CONCERNED	TOTAL RESPONDENTS
Avalanche	88.10% 74	7.14% 6	3.57% 3	0.00% 0	1.19% 1	84
Climate Change	13.10% 11	15.48% 13	22.62% 19	25.00% 21	23.81% 20	84
Coastal Storm	60.71% 51	16.67% 14	16.67% 14	3.57% 3	2.38% 2	84
Dam Failure	29.76% 25	34.52% 29	26.19% 22	7.14% 6	3.57% 3	84
Drought	19.51% 16	31.71% 26	29.27% 24	15.85% 13	4.88% 4	82
Earthquake	49.40% 41	37.35% 31	12.05% 10	2.41% 2	0.00% 0	83
Extreme Temperatures (heat and cold)	11.76% 10	23.53% 20	35.29% 30	22.35% 19	8.24% 7	85
Flooding - Street/Property	24.10% 20	27.71% 23	28.92% 24	13.25% 11	7.23% 6	83
Flooding - Stormwater	20.24% 17	22.62% 19	26.19% 22	21.43% 18	10.71% 9	84
Flooding - Basement	39.02% 32	28.05% 23	14.63% 12	8.54% 7	10.98% 9	82
Flooding - 1st Floor or above	79.01% 64	13.58% 11	2.47% 2	2.47% 2	2.47% 2	81
Geologic (landslide, sinkholes, subsidence)	47.56% 39	37.80% 31	4.88% 4	7.32% 6	2.44% 2	82
Severe Weather (high winds, lightning, hail)	8.05% 7	17.24% 15	28.74% 25	32.18% 28	16.09% 14	87
Severe Winter Storms (blizzard, heavy snow, ice)	5.75% 5	13.79% 12	31.03% 27	27.59% 24	21.84% 19	87
Soil Hazards	32.53% 27	34.94% 29	18.07% 15	13.25% 11	2.41% 2	83
Transportation Accidents	29.76% 25	17.86% 15	32.14% 27	15.48% 13	4.76% 4	84
Wildfire	24.39% 20	32.93% 27	23.17% 19	15.85% 13	3.66% 3	82
Other Natural Hazard	42.86% 27	26.98% 17	20.63% 13	7.94% 5	3.17% 2	63

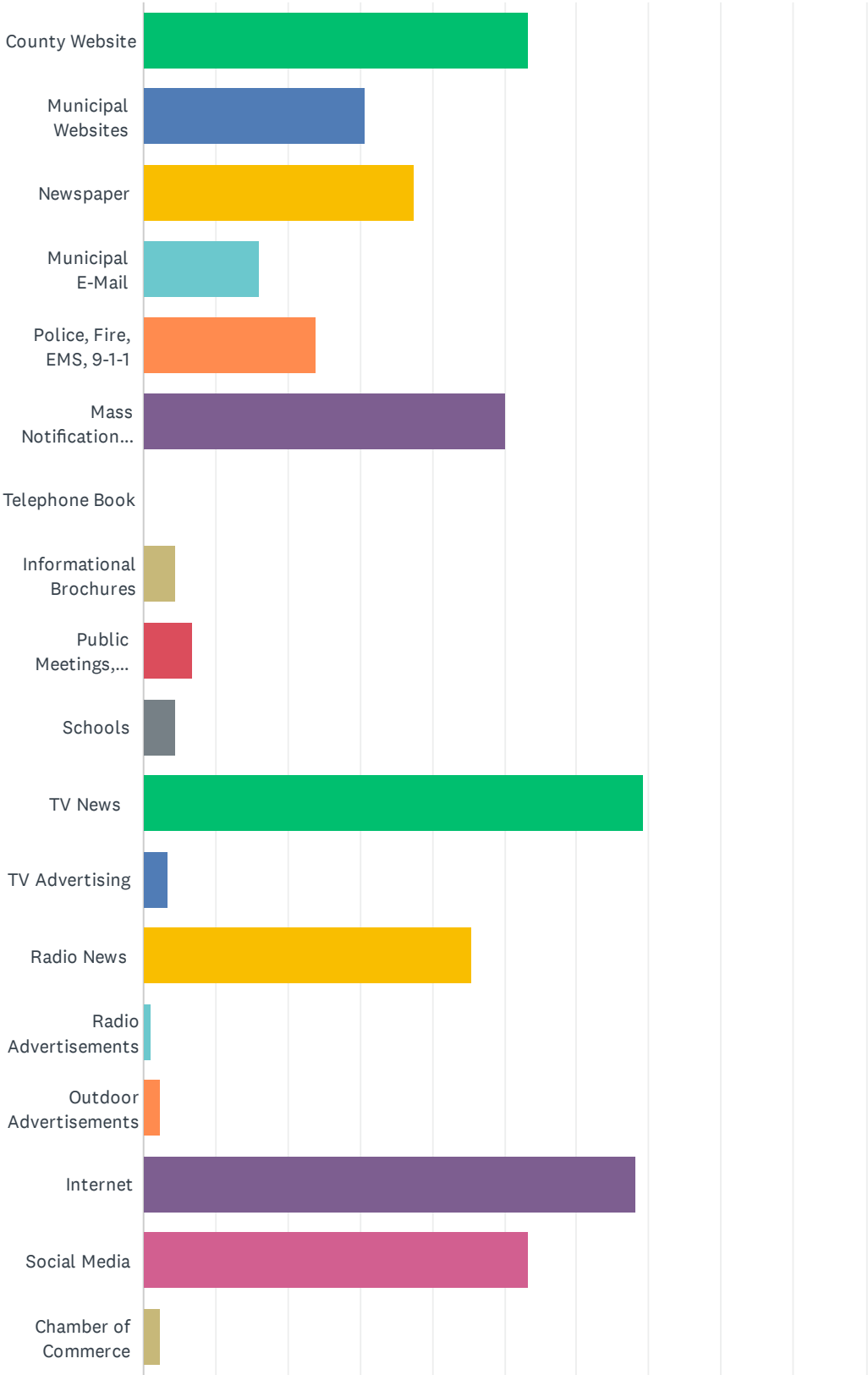
#	OTHER (PLEASE SPECIFY)	DATE
1	Air Quality Dangers	8/2/2023 8:24 AM
2	invasive species ie ash borers	3/15/2023 8:40 AM
3	mass shootings	3/11/2023 6:56 AM
4	Invasive species	3/10/2023 9:13 PM
5	G E and Finch landfills, Hudson River	3/10/2023 7:41 PM
6	Invasive insect forest destruction, power grid failure	1/12/2023 1:43 PM

# Warren County Hazard Mitigation Plan Update - Public Survey

7	Aging Infrastructure	12/27/2022 7:03 AM
8	Invasive species impacts	12/21/2022 10:17 AM
9	Invasive insects	12/20/2022 1:35 PM
10	oil/gas/antifreeze seepage from dock storage at North Bolton Road/Church Hill Road into my pond/catch-basin	12/11/2022 10:06 AM
11	algae blooms	12/10/2022 11:45 AM
12	Power service interruptions should be on your list as they are a very big concern.	12/10/2022 6:52 AM
13	aquifer drainage by Just Water. Toxic air pollution by Finch Pruyn etc	12/9/2022 10:21 PM
14	Tornado	12/9/2022 9:35 PM
15	Invasive species	12/6/2022 10:16 AM

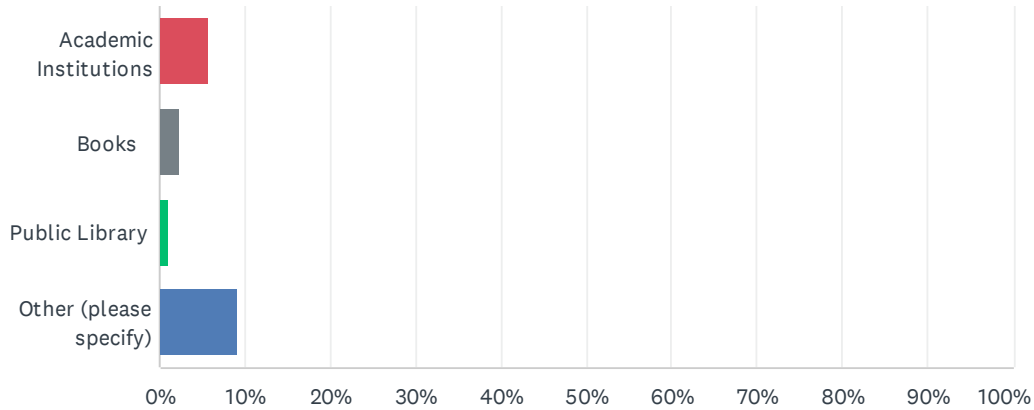
Q3 How do you receive your information concerning a disaster? Check all that apply.

Answered: 88 Skipped: 2





## Warren County Hazard Mitigation Plan Update - Public Survey



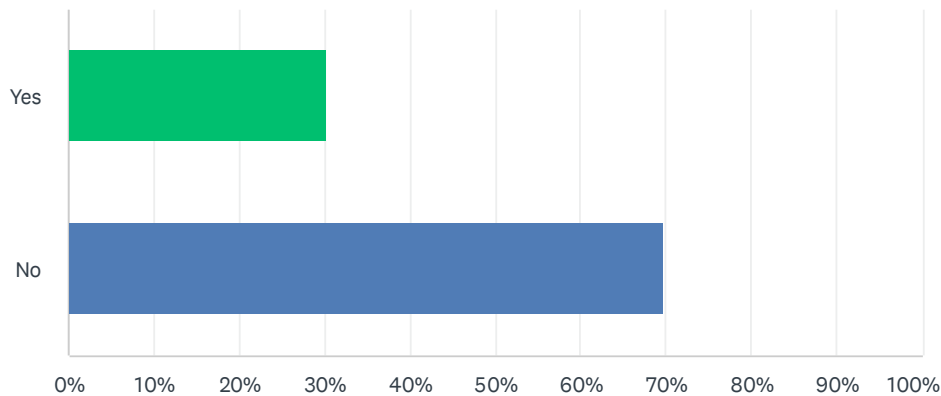
ANSWER CHOICES	RESPONSES	
County Website	53.41%	47
Municipal Websites	30.68%	27
Newspaper	37.50%	33
Municipal E-Mail	15.91%	14
Police, Fire, EMS, 9-1-1	23.86%	21
Mass Notification System (e.g. NYAlert)	50.00%	44
Telephone Book	0.00%	0
Informational Brochures	4.55%	4
Public Meetings, Workshops, Public Awareness Events	6.82%	6
Schools	4.55%	4
TV News	69.32%	61
TV Advertising	3.41%	3
Radio News	45.45%	40
Radio Advertisements	1.14%	1
Outdoor Advertisements	2.27%	2
Internet	68.18%	60
Social Media	53.41%	47
Chamber of Commerce	2.27%	2
Academic Institutions	5.68%	5
Books	2.27%	2
Public Library	1.14%	1
Other (please specify)	9.09%	8
Total Respondents: 88		

# Warren County Hazard Mitigation Plan Update - Public Survey

#	OTHER (PLEASE SPECIFY)	DATE
1	Google phone alerts	7/13/2023 9:20 AM
2	Word of mouth	3/9/2023 6:24 AM
3	Phone/text communication w/ colleagues, friends, family	1/12/2023 1:05 PM
4	Utility Company Alerts (National Grid/Spectrum)	1/8/2023 4:40 PM
5	I am responding	12/14/2022 8:12 AM
6	NY.gov text alerts	12/12/2022 12:02 PM
7	National Grid notifications (Town of Bolton & Warren County do not send emails)	12/11/2022 10:06 AM
8	Friends who work in the fields	12/9/2022 9:35 PM

## Q4 In the past, has your home been damaged by a hazard event? For example, the basement of your home flooded and damaged the hot water heater.

Answered: 86 Skipped: 4



ANSWER CHOICES	RESPONSES	
Yes	30.23%	26
No	69.77%	60
TOTAL		86

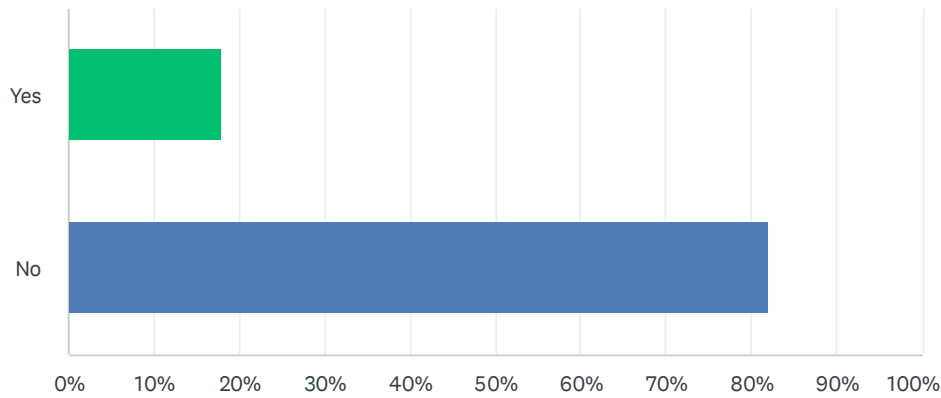
#	PLEASE EXPLAIN THE TYPE OF DAMAGE SUSTAINED AND WHEN IT OCCURRED.	DATE
1	Severe storm with lightening damage. Furnace, Door Opener, Elec Damage.	7/24/2023 9:37 AM
2	Extreme cold, frozen water pipes	7/13/2023 7:58 AM
3	roof shingles torn off in wind event in summer 2022	7/12/2023 4:26 PM
4	Wind damage to roof, water damage to ceilings, ice damage, electric system damage from lightning strike	7/11/2023 2:16 PM
5	Tree fell on house	3/11/2023 3:55 AM
6	Wind damage to roof and eaves	3/10/2023 9:13 PM
7	Wind damaged roof, lightning hit tree and traveled into house, damaging electrical system	3/9/2023 1:37 PM
8	Trees falling, high winds	3/9/2023 6:24 AM
9	We had severe rain and driving winds and our basement floor had water soaked through the concrete foundation; this was in the past year. About 3-4 years ago, we had an earthquake which caused some cracking in our house walls and shifting so the interior doors didn't close correctly anymore.	2/15/2023 1:01 PM
10	Sewer backup flooded into basement after a storm event.	1/12/2023 1:05 PM
11	I did have some flooding from a recent severe rain storm and my contractor was able to fix the roof issue that happened due to severe rain and then immediate 40 mph winds.	1/8/2023 4:40 PM
12	Basement flooded	12/20/2022 1:35 PM
13	Basement flood caused furnace outage and resulted in frozen pipes	12/14/2022 7:24 AM

# Warren County Hazard Mitigation Plan Update - Public Survey

14	Basement in home flooded from ice storm causing flooring and walls needing to be replaced.	12/12/2022 12:02 PM
15	Due to the constant flooding from climate change and no longer just the spring thaw my basement floors have cracked and pieces of the concrete flooring are eroding/chipping and white mold has appeared	12/12/2022 9:31 AM
16	There's a county storm drain underneath Brook St, in the town of Bolton, that shoots huge volumes of water onto three other properties including mine, with it, we receive rocks, raw sewage, sand, glass, soil from upstream tributaries, and road debris. This is in addition to the widened culvert drain pipe running under Brook and Stewart Ave.	12/11/2022 5:05 PM
17	My garage is sinking because Warren County raised the road ~5 feet at the brook so my garage is now the lowest point on North Bolton Road at the foot of Church Hill Road. This resulted in NO drainage from the west side to east side of the road, almost no drainage north-to-south from garage to brook. This causes flooding in the road (as well as my former garden area and my garage foundation) all spring and summer AND ice all winter across North Bolton Road. Repeated requests for drainage solutions have been repulsed.	12/11/2022 10:06 AM
18	Storm drainage system failure in 30" CMP, caused wash out and beach failure. From the washout silts and stones washed into lake George causing a delta of sand and stone and asphalt	12/11/2022 7:50 AM
19	Basement flood	12/10/2022 2:31 PM
20	high winds have caused tree branches to come down and hit the house; roof shingle damage	12/10/2022 11:36 AM
21	Roof damage and leak from strong wind thunderstorm resulted in interior damage	12/10/2022 7:27 AM
22	Broken sewer line backed up into the basement with sewer gas fumes into my HVAC floor vents a few months ago. I developed both polycythemia and obstructive sleep apnea that may be related to previously diagnosed rare autoimmune neuromuscular disease OR the sewer line may have contributed	12/9/2022 9:35 PM
23	Tree fell on house in high wind - 2016 & 2022 Crawl space flooded - 2011	12/9/2022 8:50 PM
24	hot water heater	12/9/2022 4:50 PM
25	Hail storm. House roof had to be replaced. Additionally, car needed major (auto body) repair.	12/9/2022 2:14 PM
26	Severe thunderstorms, roof damage.	12/6/2022 10:16 AM

Q5 If you answered 'yes' above, did you report the damages to your local police or fire departments or to an emergency management agency?

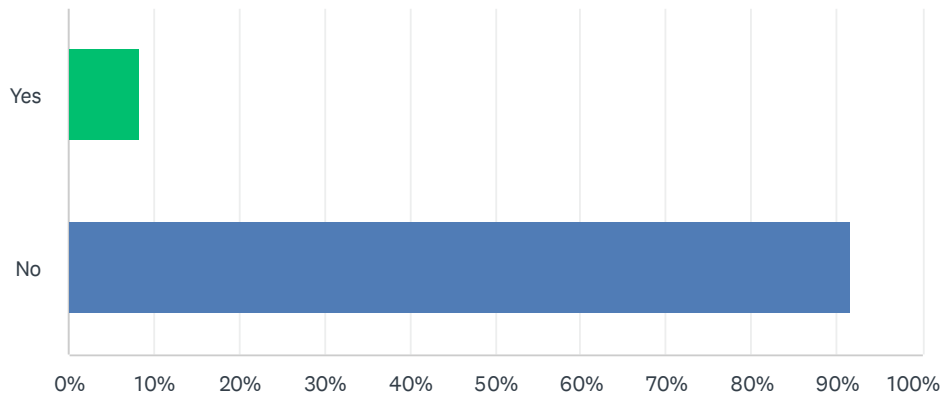
Answered: 56    Skipped: 34



ANSWER CHOICES	RESPONSES	
Yes	17.86%	10
No	82.14%	46
TOTAL		56

Q6 To the best of your knowledge, is your property located in a designated floodplain? If you do not know, click here to find out.

Answered: 85    Skipped: 5

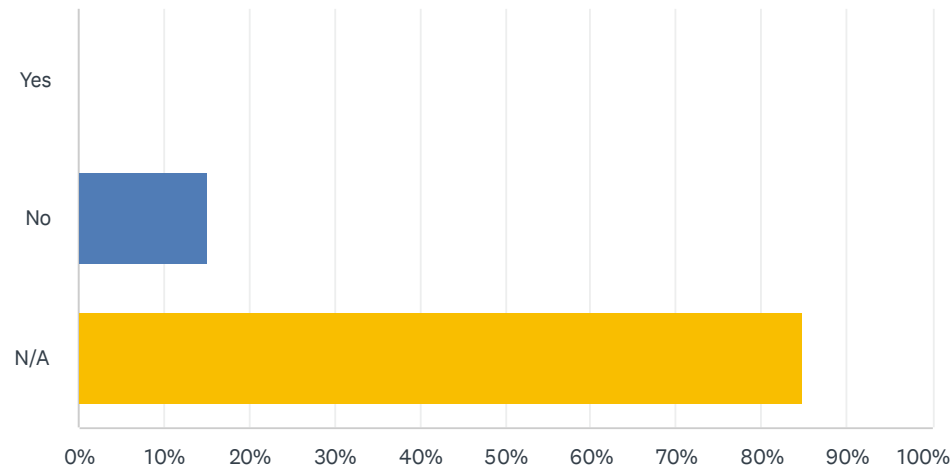


ANSWER CHOICES	RESPONSES	
Yes	8.24%	7
No	91.76%	78
TOTAL		85



Q7 If your property is in the floodplain, do you have flood insurance?

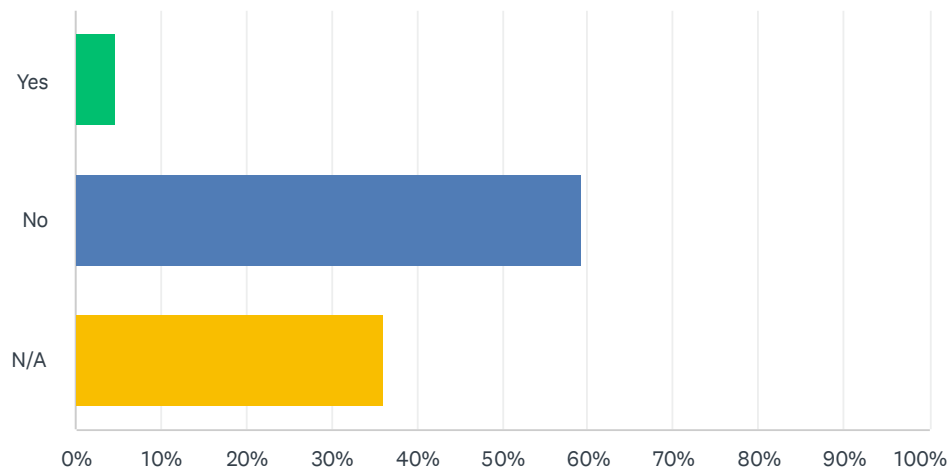
Answered: 79    Skipped: 11



ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		15.19%	12
N/A		84.81%	67
TOTAL			79

Q8 If your property is located outside of the floodplain, do you have flood insurance?

Answered: 86    Skipped: 4



ANSWER CHOICES	RESPONSES	
Yes	4.65%	4
No	59.30%	51
N/A	36.05%	31
TOTAL		86

**Q9 Please identify any specific vulnerabilities that you are aware of in your city/town/village (e.g. floodprone areas or specific properties, critical facilities that lack backup power, etc.). Please list street names and other specific identifiers if possible.**

Answered: 45 Skipped: 45

#	RESPONSES	DATE
1	All of Warren County is susceptible to air quality dangers, as recently experienced from the Canadian Wildfires. The Hazard Mitigation plan is critically deficient regarding this danger.	8/2/2023 8:29 AM
2	13th Lake Road, North River, NY - 1st mile gabion wall.	7/14/2023 12:32 PM
3	The above-ground electric poles along Bloody Pond Road (and elsewhere in LG) are prone to outages due to wind and snow. Buried lines would be safer.	7/13/2023 9:23 AM
4	Thurman Bridge Spring Ice Jam 418	7/13/2023 8:02 AM
5	Stormwater washing out roads	7/12/2023 4:33 PM
6	Glens Falls watershed dams had concerns. Stormwater basins frequently overflow in Queensbury	7/11/2023 2:18 PM
7	Pine Tree Lane Diamond Point Always having power outages when others don't. They can last up to four days.	3/11/2023 10:56 AM
8	lack of back up power	3/11/2023 8:36 AM
9	Loon Lake Dam Failure. Power outages due to lack of appropriate tree removal along power lines.	3/11/2023 7:01 AM
10	Poor cell service. Lake Luzerne	3/10/2023 8:44 PM
11	Queensbury boat launch, Glen Lake, Lake George, Hudson	3/10/2023 7:45 PM
12	Susceptibility to flooding, poorly maintained dams owned by city of Glens Falls.	3/9/2023 1:38 PM
13	Schools lack of back up power in the event power goes out and lack heating elements. Trees along residential roads that aren't cut back. Power drainage on road ways.	3/9/2023 6:32 AM
14	I only work in Warren County; I live in Saratoga County. I don't believe this question is applicable to me.	2/24/2023 8:55 AM
15	prone to power outages from trees on lines	2/16/2023 2:05 PM
16	general back-up power, snow/ice blockage on highways	2/15/2023 1:58 PM
17	Floodprone area on Meadowbrook Road @ Halfway Brook	2/15/2023 1:34 PM
18	low water levels in kattskill bay lake george due to water management practices	2/15/2023 1:33 PM
19	None that I'm	2/15/2023 12:41 PM
20	n/a	2/15/2023 12:40 PM
21	None known	1/15/2023 10:53 PM
22	Apartment building for disabled and retired with all electric heat. No on demand generator. Located at 10 Manor Rd.	1/13/2023 2:03 PM
23	13th Lake Road, North River. The gabion walls are pushed out and look like they will give at any time. Also rocks fall in the middle of the road all the time.	1/12/2023 3:57 PM
24	Flooding - 9N S/Hidden Valley Drive (Tubby Tubes-Lake Luzerne, NY 12846), due to a sewer	1/8/2023 4:44 PM

## Warren County Hazard Mitigation Plan Update - Public Survey

drain that doesn't handle all the water, causing back up and ice/danger in winter. Trees down in my property from recent high winds (1275 Lake Avenue, Lake Luzerne, 12846)

25	Water Tank control panel without power backup	12/27/2022 7:07 AM
26	None	12/23/2022 3:24 PM
27	Ice jamming on Hudson River at 418 Bridge. Flooding on River Road	12/21/2022 10:22 AM
28	See initial list of environmental threats experienced in this region	12/14/2022 3:47 PM
29	Lake George sewage treatment plant has minimal security and is vulnerable to walk up attacks on infrastructure.	12/14/2022 7:27 AM
30	None	12/14/2022 6:49 AM
31	Numerous roads and stream crossings could be subject to flood/storm damage.	12/14/2022 6:03 AM
32	East End in Glens Falls is known for being a high water table area	12/12/2022 9:33 AM
33	North Bolton Road at the foot of Church Hill Road is continually flooded due to the road having been raised several years ago. Raising the road removed all drainage possibilities and County officials refuse to do anything to correct the problem.	12/11/2022 10:09 AM
34	Storm Drainage system that runs down the Lakeview Circle drive in the town of lake George and crosses Lake Shore Dr in the town of lake George and continues down to the lakefront between the Fairview Improvement association property and the lake view terrace property.	12/11/2022 8:00 AM
35	Lack of municipal sewer and water	12/10/2022 2:32 PM
36	na	12/10/2022 11:49 AM
37	poor drainage for city streets (most streets in Glens Falls); raw sewage releases into the Hudson River (sometimes even if it only rains briefly); Poor tree maintenance causes downed branches in the high winds we now get for many months of the year.	12/10/2022 11:44 AM
38	My road is collapsing into a stream. Many dead trees along the road. So called protected land around the watershed is not protected or monitored	12/10/2022 8:22 AM
39	C/Glens Falls flood prone streets. Warren St, Mohican St, CR 19 T/Chester. SR 418 bridge & River Rd, Barton Mines RD Johnsburg	12/10/2022 7:39 AM
40	Loon Lake Dam, Rt 8/9, Chestertown	12/10/2022 6:57 AM
41	ZERO fragrance-free emergency shelters! Acute respiratory response / reactive airways when exposed for perfumes, scented products (ubiquitous), etc. ALSO: FEMA Flood Map makes ZERO sense! Unable to determine if my address is - or is not - in a flood plain: Fredella Avenue, Glens Falls, NY.	12/9/2022 9:47 PM
42	Hudson River Basin Lake Luzerne to Corinth	12/9/2022 8:54 PM
43	We have experienced power outages for as lengthy as 5 days. being on a deep well, the outage not only effects our lights and heat, but water as well.	12/9/2022 7:25 PM
44	Electric	12/9/2022 12:13 PM
45	Glens Falls dams on West Mountain	12/9/2022 9:03 AM

**Q10 Please identify any specific vulnerable areas outside of your city/town/village (e.g. flood-prone areas or specific properties, critical facilities that lack backup power, etc.). Please list the city/town/village, street names, and other specific identifiers if possible.**

Answered: 33 Skipped: 57

#	RESPONSES	DATE
1	n/a	8/2/2023 8:29 AM
2	n/a	7/13/2023 9:23 AM
3	Post office is located on Number 9 Brook.	7/13/2023 8:14 AM
4	Hague Brook flooding	7/12/2023 4:33 PM
5	Schroon and Hudson Rivers flooding	7/11/2023 2:18 PM
6	Federal Hill Rd	3/11/2023 8:36 AM
7	See above	3/10/2023 7:45 PM
8	Areas along Hudson River and Schroon River are flooded frequently	3/9/2023 1:38 PM
9	Lack of internet service in rural areas.	3/9/2023 6:32 AM
10	I only work in Warren County. I live in Saratoga County.	2/24/2023 8:55 AM
11	Queensbury - Halfway Brook Area/flooding Warrensburg - Schroon River Area/flooding Chester&Horicon - Schroon River Area/flooding	2/16/2023 2:05 PM
12	same	2/15/2023 1:58 PM
13	na	2/15/2023 1:33 PM
14	None that I'm aware of	2/15/2023 12:41 PM
15	n/a	2/15/2023 12:40 PM
16	Unknown	1/15/2023 10:53 PM
17	None I can think of	1/13/2023 2:03 PM
18	Meadowbrook rd, Qby - Flooding	1/12/2023 1:24 PM
19	Unsure.	1/8/2023 4:44 PM
20	None	12/23/2022 3:24 PM
21	Unaware	12/14/2022 3:47 PM
22	None.	12/14/2022 7:27 AM
23	None	12/14/2022 6:49 AM
24	None known of	12/11/2022 10:09 AM
25	Lakeview Circle Drive Town of Lake George	12/11/2022 8:00 AM
26	na	12/10/2022 11:49 AM
27	don't know.	12/10/2022 11:44 AM
28	GFWWTP releasing sewage into Hudson after every heavy rainstorm. Inadequate storm drainage on streets	12/9/2022 10:31 PM

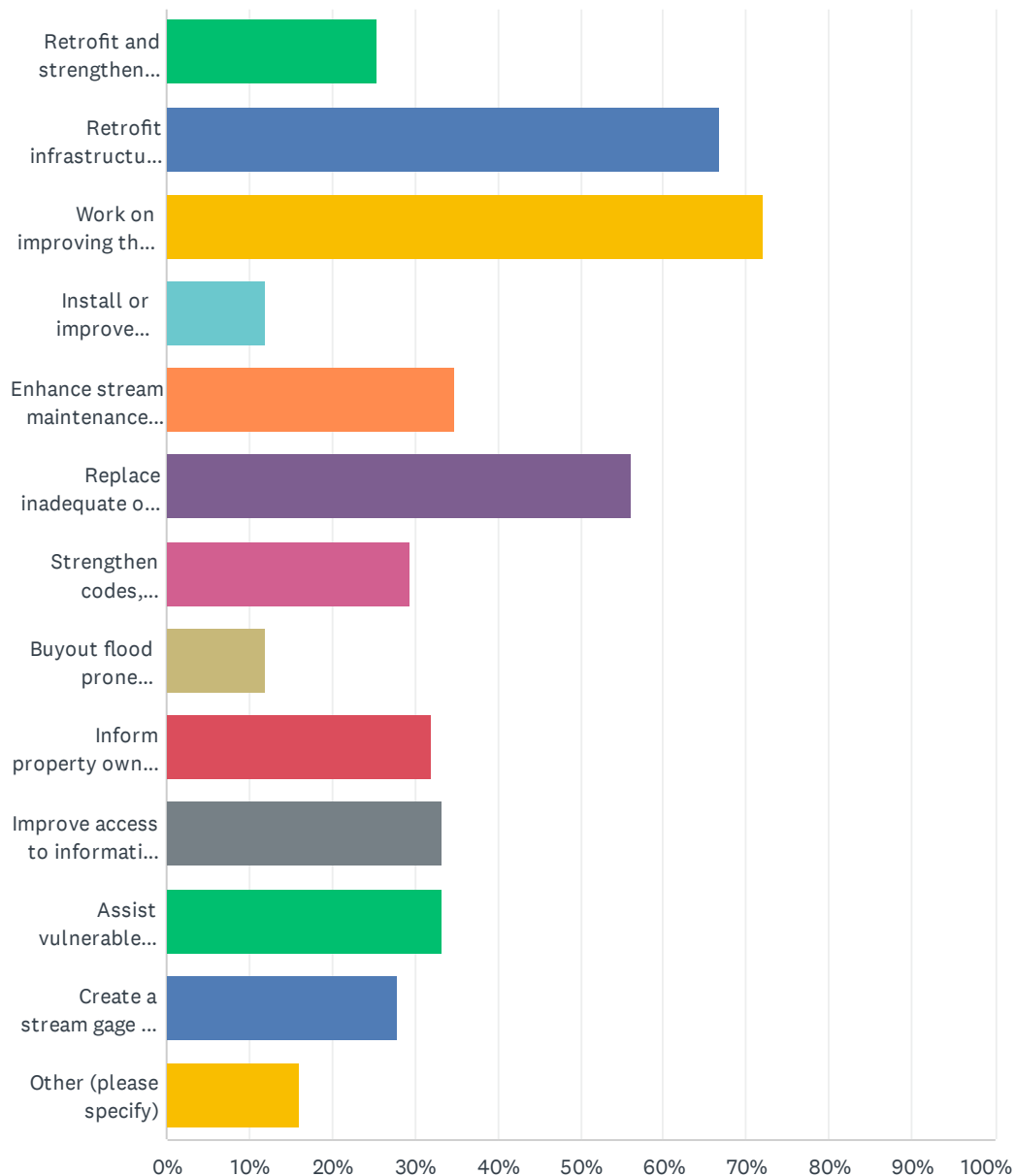
## Warren County Hazard Mitigation Plan Update - Public Survey

29	Still ZERO fragrance-free emergency shelters - I would not be able to survive in an emergency shelter due to respiratory distress when exposed to fragranced / scented products (body, laundry, cleaning, etc.)	12/9/2022 9:47 PM
30	Power cybersecurity concern	12/9/2022 8:10 PM
31	Flooding of the Hudson River in the spring occasionally that affects the State rt. 28 between North Creek and North River, and includes part of the town North Creek at the train station where Teddy Roosevelt learned McKinley had died from his wound, and he was now President. The historic Train station has been preserved, but flooding of the Hudson in the spring has caused concern a number of years in the past ten.	12/9/2022 7:25 PM
32	Thurman bridge	12/9/2022 12:13 PM
33	Downtown Warrensburg from Schroon River flooding	12/9/2022 9:03 AM



# Q11 What types of projects do you believe local, county, state, or federal government agencies could be doing to reduce the damage and disruption of disasters in Warren County? Select your top three choices.

Answered: 75 Skipped: 15



# Warren County Hazard Mitigation Plan Update - Public Survey

ANSWER CHOICES	RESPONSES	
Retrofit and strengthen essential facilities such as police, schools, and hospitals	25.33%	19
Retrofit infrastructure, such as elevating roadways and improving drainage systems	66.67%	50
Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities etc.)	72.00%	54
Install or improve protective structures, such as floodwalls, levees, bulkheads, and firebreaks	12.00%	9
Enhance stream maintenance programs/projects	34.67%	26
Replace inadequate or vulnerable bridges and causeways	56.00%	42
Strengthen codes, ordinances and plans to require higher hazard risk management standards and/or provide greater control over development in high hazard areas	29.33%	22
Buyout flood prone properties and maintain as open space	12.00%	9
Inform property owners of ways they can mitigate damage to their properties	32.00%	24
Improve access to information about hazard risks and high-hazard areas	33.33%	25
Assist vulnerable property owners with securing funding to mitigate their properties	33.33%	25
Create a stream gage and weather monitoring program to provide more accurate data and warnings	28.00%	21
Other (please specify)	16.00%	12
Total Respondents: 75		

#	OTHER (PLEASE SPECIFY)	DATE
1	Install PurpleAir air monitoring sensors in the Northern & Western areas of Warren County to improve the Air Quality Forecasts provided by the EPA and NYS DEC.	8/2/2023 8:29 AM
2	Require power companies to be more proactive in maintain power lines from tree damage, put power source lines underground	3/11/2023 8:36 AM
3	Underground utilities!	3/10/2023 7:45 PM
4	Burying utilities and power lines to prevent damage from storms, and accidents	3/9/2023 6:32 AM
5	Encourage all property owners to assist with capturing & infiltrating stormwater.	1/12/2023 1:24 PM
6	I think some of the projects listed here are already being mitigated/worked on.	1/8/2023 4:44 PM
7	None	12/14/2022 6:49 AM
8	Retrofit infrastructure by LOWERING North Bolton Road at the foot of Church Hill Road to where it was years ago when drainage was NEVER A PROBLEM.	12/11/2022 10:09 AM
9	Infrastructure improvements drainage	12/11/2022 8:00 AM
10	Assist utilities in ROW acquisition on bridge projects and to support new critical ethic redundancy projects	12/10/2022 7:39 AM
11	emergency preparedness training for natural disasters for citizens, and in schools	12/9/2022 10:31 PM
12	Ensure town's have emergency plans and backup or mobile power	12/9/2022 2:25 PM

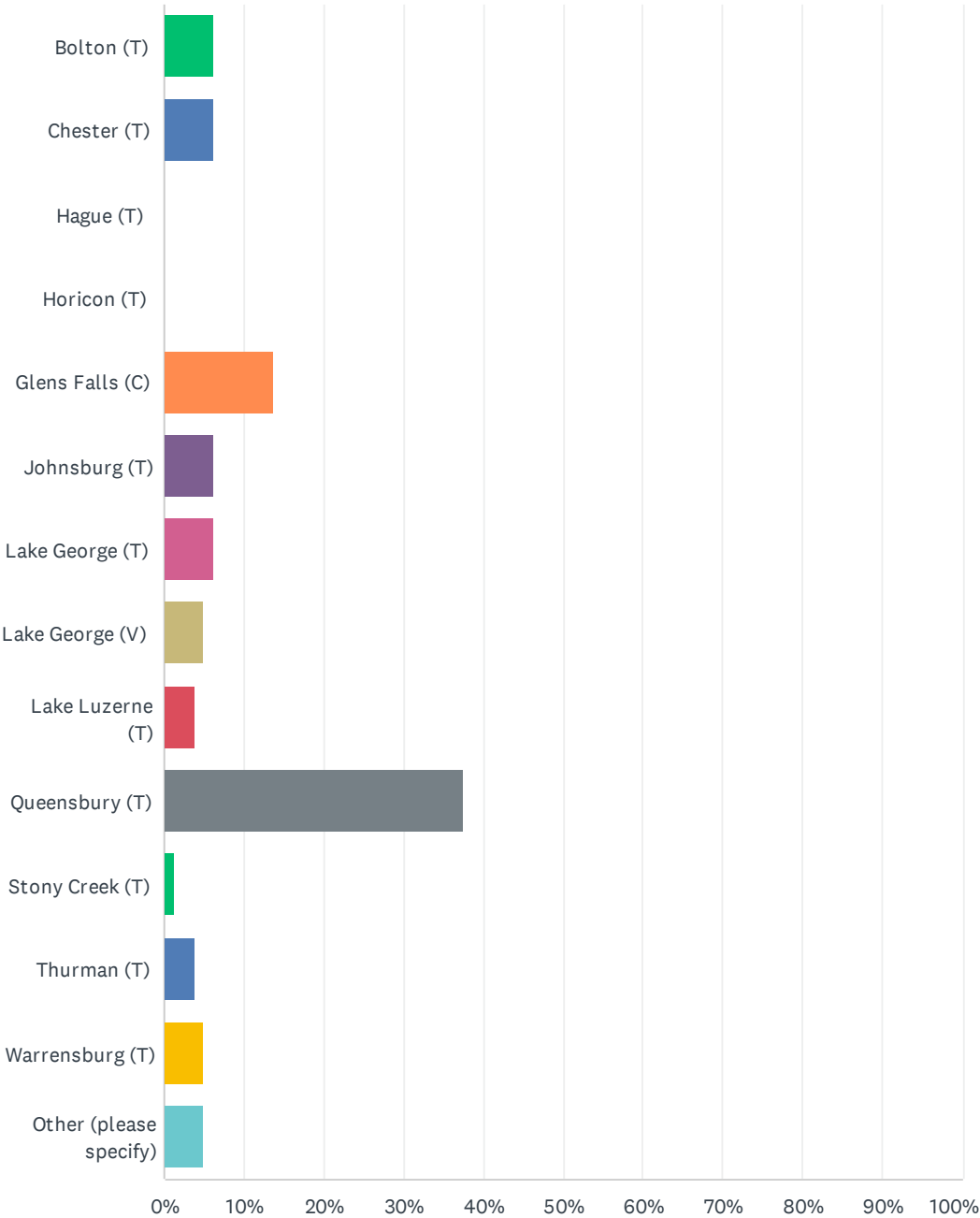
## Q12 Do you have any other comments, questions, or concerns regarding hazard mitigation in Warren County?

Answered: 23    Skipped: 67

#	RESPONSES	DATE
1	Air Quality emergencies must be incorporated into this hazard mitigation plan. This plan is critically deficient without this obvious hazard.	8/2/2023 8:29 AM
2	Inadequate shelters in case of emergencies	3/11/2023 7:01 AM
3	Use the health Dept	3/10/2023 7:45 PM
4	no	3/9/2023 1:38 PM
5	no	2/24/2023 8:55 AM
6	no, thanks	2/15/2023 1:58 PM
7	remove tree limbs that hang over the 9L road before someone gets seriously injured	2/15/2023 1:33 PM
8	I see climate change as one of the biggest concerns now and in the future that could and would impact a lot of weather related hazard events. I think more projects that focus on taking care of our environment, like adopt a highway and stream clean up days, as a good thing to consider.	2/15/2023 12:41 PM
9	No	1/13/2023 2:03 PM
10	Looking forward to the outcomes of these surveys.	1/8/2023 4:44 PM
11	Nope	12/23/2022 3:24 PM
12	I would appreciate receiving real time alerts from Warren County similarly to FEMA	12/14/2022 3:47 PM
13	The area looks pretty safe to me!!!....JMO	12/14/2022 6:49 AM
14	Each municipal government should be required to participate in this process. They should assess their community for potential hazards and develop a mitigation plan.	12/14/2022 6:03 AM
15	Warren County needs to fix the drainage issue it CAUSED.	12/11/2022 10:09 AM
16	Funding	12/11/2022 8:00 AM
17	I see that climate change is affecting us. One problem that we never experienced until recent years is algae blooms.	12/10/2022 11:49 AM
18	Until now, I've never heard of it.	12/10/2022 8:22 AM
19	No	12/10/2022 6:57 AM
20	Annual preparedness training at senior centers, at schools and in locations that citizens are encouraged to attend. create a citizen team to work with Emergency Management for Warren County	12/9/2022 10:31 PM
21	Vastly improve ACCESSIBILITY for disabled people and Disaster Planning to include INPUT from disabled people with various disabilities; including respiratory	12/9/2022 9:47 PM
22	during severe winter storms, county buildings need to close or open late as employees travel long distances to get to Warren County Municipal Center and should not have to use personal time in case of extreme weather.	12/9/2022 4:54 PM
23	Extreme weather (heavy downpours and sudden storms) have increased greatly. Review of runoff areas should be reviewed.	12/9/2022 2:25 PM

Q13 Please indicate the municipality in which you live:

Answered: 80    Skipped: 10



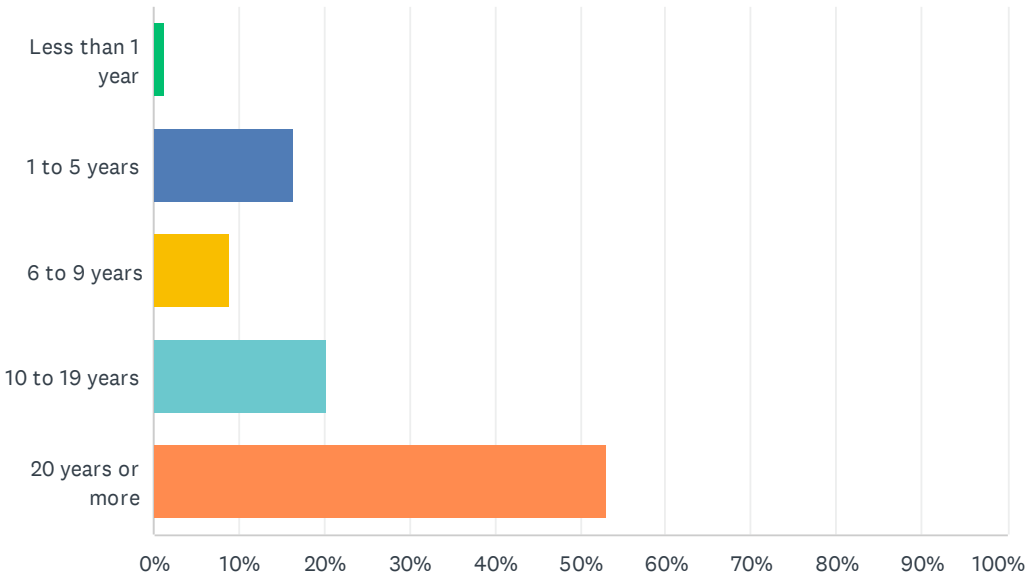
# Warren County Hazard Mitigation Plan Update - Public Survey

ANSWER CHOICES	RESPONSES	
Bolton (T)	6.25%	5
Chester (T)	6.25%	5
Hague (T)	0.00%	0
Horicon (T)	0.00%	0
Glens Falls (C)	13.75%	11
Johnsburg (T)	6.25%	5
Lake George (T)	6.25%	5
Lake George (V)	5.00%	4
Lake Luzerne (T)	3.75%	3
Queensbury (T)	37.50%	30
Stony Creek (T)	1.25%	1
Thurman (T)	3.75%	3
Warrensburg (T)	5.00%	4
Other (please specify)	5.00%	4
Total Respondents: 80		

#	OTHER (PLEASE SPECIFY)	DATE
1	live outside Warren County in Ticonderoga but work in Hague	7/12/2023 4:35 PM
2	Hadley	3/15/2023 8:42 AM
3	Corinth	2/24/2023 8:56 AM
4	Ticonderoga, but work in Queensbury	2/15/2023 1:34 PM

Q14 How long have you lived here?

Answered: 79    Skipped: 11

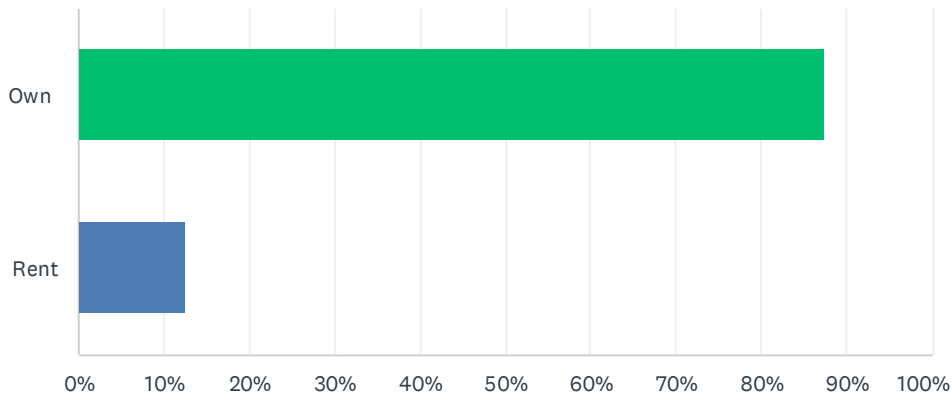


ANSWER CHOICES		RESPONSES	
Less than 1 year		1.27%	1
1 to 5 years		16.46%	13
6 to 9 years		8.86%	7
10 to 19 years		20.25%	16
20 years or more		53.16%	42
TOTAL			79



Q15 Do you own or rent your place of residence?

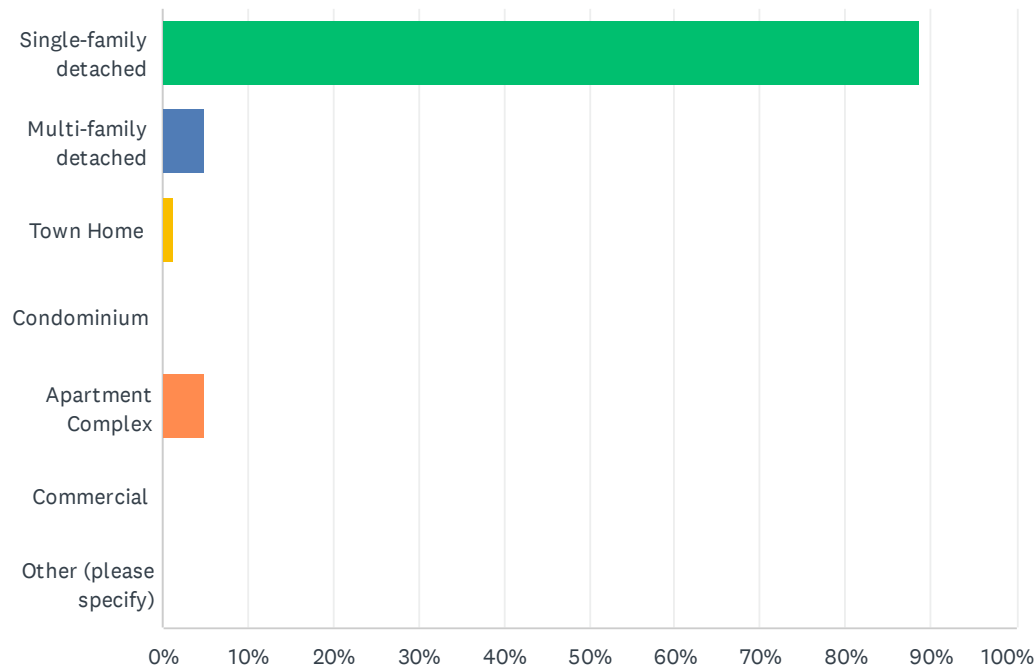
Answered: 80    Skipped: 10



ANSWER CHOICES	RESPONSES	
Own	87.50%	70
Rent	12.50%	10
TOTAL		80

Q16 What type of residence do you live in?

Answered: 80    Skipped: 10



ANSWER CHOICES		RESPONSES	
Single-family detached		88.75%	71
Multi-family detached		5.00%	4
Town Home		1.25%	1
Condominium		0.00%	0
Apartment Complex		5.00%	4
Commercial		0.00%	0
Other (please specify)		0.00%	0
TOTAL			80

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q17 What is the address of your property? (optional, will be kept confidential - only used to identify hazard areas such as flooding)

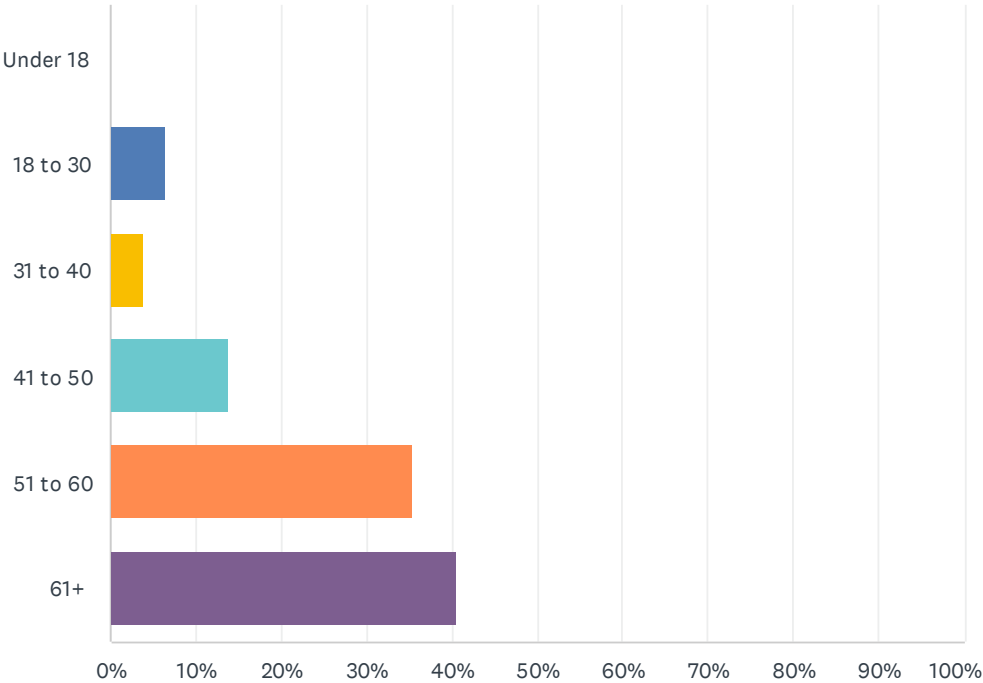
Answered: 40    Skipped: 50

#	RESPONSES	
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Q18 Please indicate your age range:

Answered: 79    Skipped: 11



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18 to 30	6.33%	5
31 to 40	3.80%	3
41 to 50	13.92%	11
51 to 60	35.44%	28
61+	40.51%	32
TOTAL		79



## D.2 STAKEHOLDER SURVEYS

In addition to collecting information from residents of Warren County, surveys were developed for the agencies and stakeholders in the county. Unlike steering committee or planning partnership members, stakeholders may not be involved in all stages of the planning process, but they may have information or input to provide. In order to gather that information, the surveys were sent to the following stakeholders: law enforcement, firefighters, emergency medical services, highway and public works, business and commerce, hospitals and health care providers, and utilities. Results of the surveys are provided in the following pages, with personal information redacted.



## Q1 Name of your department/office/institution

Answered: 15   Skipped: 0

#	RESPONSES	DATE
1	Glens Falls City School District	7/24/2023 2:55 PM
2	Warren/Hamilton Counties OFA	7/13/2023 3:09 PM
3	Silver Bay YMCA	7/13/2023 1:18 PM
4	Glens Falls Police Department	7/13/2023 11:05 AM
5	Center for Disability Services , Prospect School	7/13/2023 7:36 AM
6	Warren County Parks Recreation & Railroad	7/13/2023 7:22 AM
7	National Grid	1/18/2023 8:39 AM
8	WARREN COUNTY HEALTH SERVICES	1/9/2023 10:39 AM
9	NYS Department of Health Glens Falls District Office	1/9/2023 9:28 AM
10	Lake George Regional Chamber of Commerce & CVB	1/8/2023 4:26 PM
11	Southern Adirondack Independent Living	1/6/2023 8:13 AM
12	Health Services	1/6/2023 8:08 AM
13	Glens Falls Hospital	1/5/2023 4:55 PM
14	Greater Glens Falls Transit	1/5/2023 4:26 PM
15	Glens Falls common council	12/14/2022 7:26 PM

## Q2 Name of Respondent

Answered: 15   Skipped: 0

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### Q3 What is your position/title/role with your department/office/institution?

Answered: 15 Skipped: 0

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## Q4 Please provide your contact information.

Answered: 15 Skipped: 0

ANSWER CHOICES	RESPONSES	
Name	0.00%	0
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	15
Phone Number	93.33%	14

#	NAME	DATE
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There are no responses.

#	COMPANY	DATE
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There are no responses.

#	ADDRESS	DATE
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There are no responses.

#	ADDRESS 2	DATE
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There are no responses.

#	CITY/TOWN	DATE
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There are no responses.

#	STATE/PROVINCE	DATE
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There are no responses.

#	ZIP/POSTAL CODE	DATE
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There are no responses.

#	COUNTRY	DATE
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There are no responses.

#	EMAIL ADDRESS	DATE
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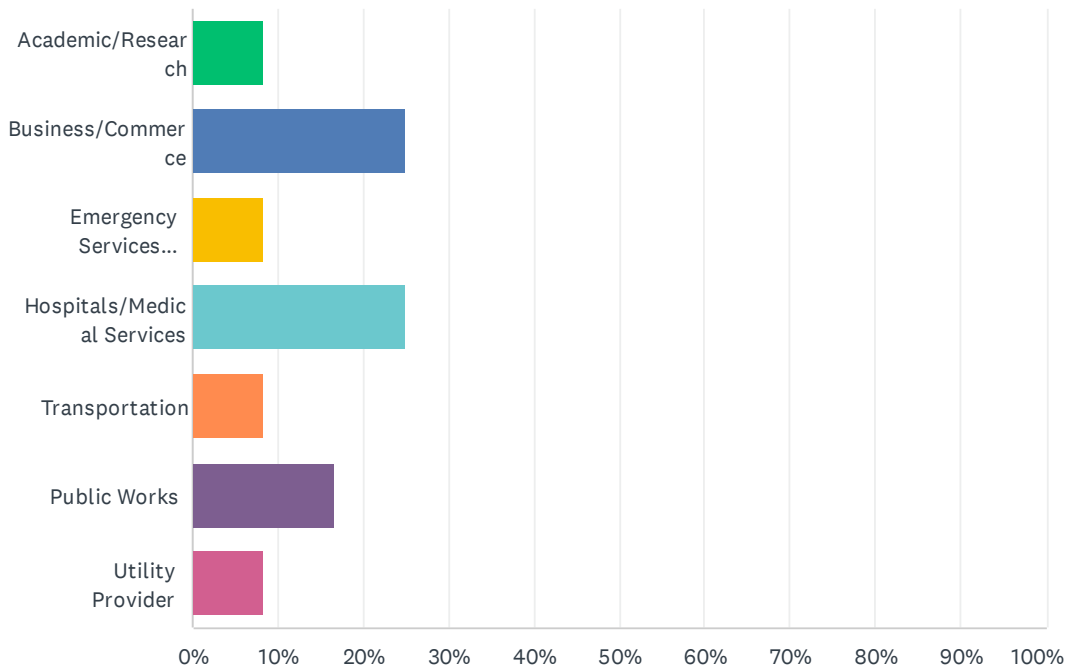
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## Warren County Hazard Mitigation Plan - Stakeholder Survey

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## Q5 What category does your facility operation/service fall under?

Answered: 12 Skipped: 3



ANSWER CHOICES	RESPONSES	
Academic/Research	8.33%	1
Business/Commerce	25.00%	3
Emergency Services (police, fire, EMS)	8.33%	1
Hospitals/Medical Services	25.00%	3
Transportation	8.33%	1
Public Works	16.67%	2
Utility Provider	8.33%	1
<b>TOTAL</b>		<b>12</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	School	7/13/2023 7:38 AM
2	Environmental Health	1/9/2023 9:32 AM
3	We work with more than 460 hospitality focused businesses to ensure our economic vitality throughout Warren County and beyond. We also promote Warren County as the destination of choice for group (business/association/bus tours/reunions/weddings) business. Lastly, we operate the Adirondacks Welcome Center TasteNY / Tourism programs.	1/8/2023 4:30 PM
4	Local Health Department	1/6/2023 8:18 AM



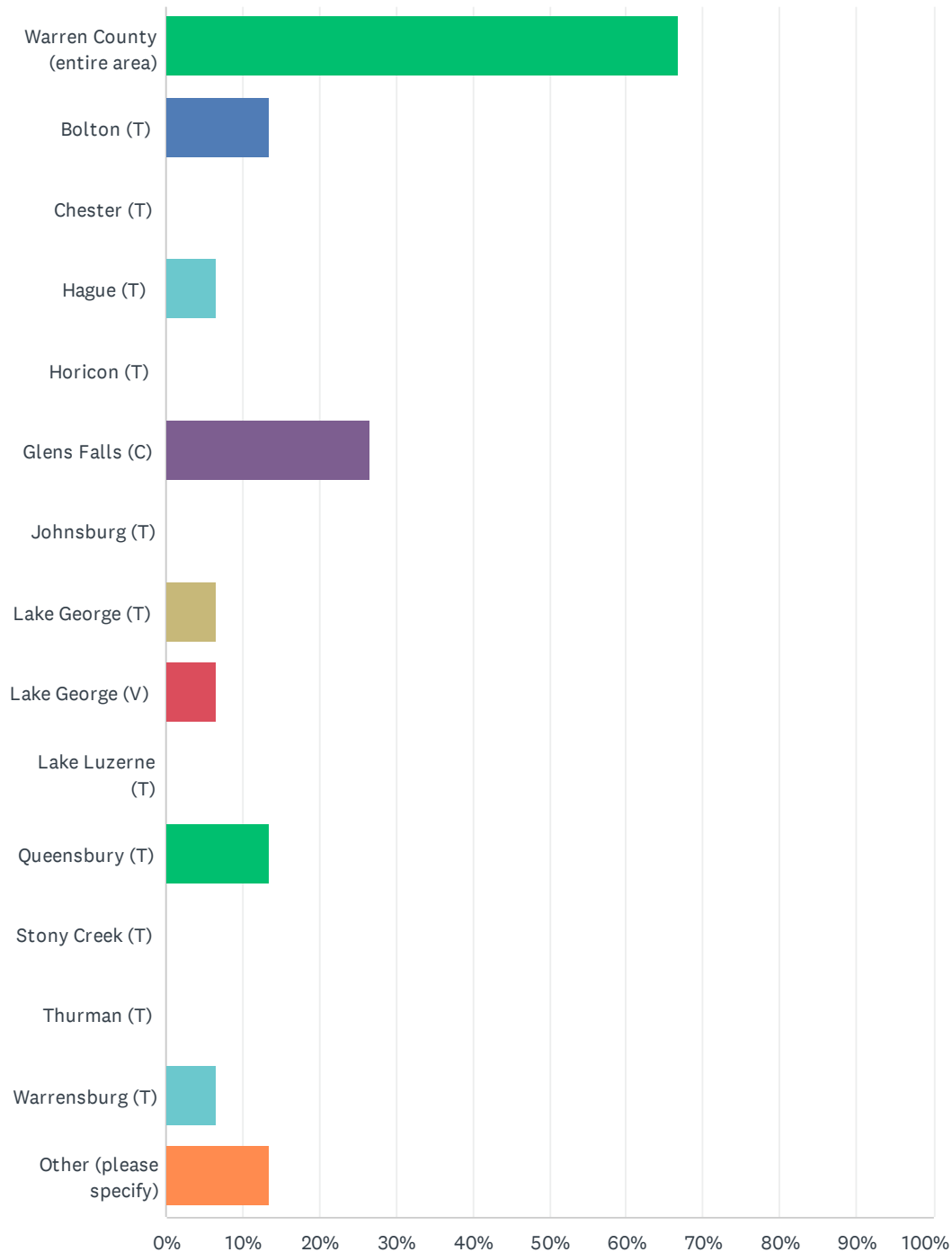
## Q6 Based on the above category, please provide additional description and information as to what your organization does or offers (please explain)

Answered: 14 Skipped: 1

#	RESPONSES	DATE
1	Public School	7/24/2023 2:58 PM
2	Office for the Aging - provide assistance to seniors	7/13/2023 3:11 PM
3	YMCA Family Retreat and Conference Center offers lodging, hospitality services, meals, programs and indoor and outdoor recreation to visitors and community members.	7/13/2023 1:21 PM
4	Police	7/13/2023 11:06 AM
5	We provide educational services for school age children	7/13/2023 7:38 AM
6	We manage and maintain the Warren County Fish Hatchery, Bikeway, Fairgrounds, Canoe access sites and Up Yonda Farm Environmental Education Center	7/13/2023 7:27 AM
7	Electricity and Natural Gas Utility.	1/18/2023 8:41 AM
8	MEDICAL ASSITANCE TO THE ILL AND ELDERLY, VACCINATIONS, RABIES CLINICS	1/9/2023 10:40 AM
9	Provide environmental health oversight of facilities permitted and regulated by our office.	1/9/2023 9:32 AM
10	We offer information outreach, tourism marketing/promotional activities, direct contact with visitors and community partners.	1/8/2023 4:30 PM
11	we are responsible for completing the requirements of NYSDOH Article 6 General Public Health Work Program which includes completing a Community Health Assessment & Improvement Plann every 3 years, chronic disease prevention (CVD, cancer, diabetes, obesity, tobacco prevention), communicable disease surveillance and control, vector borne disease monitoring and control, rabies control, lead poisoning prevention, and family health. In addition to the Article 6 programs we are also responsible for public health emergency preparedness planning which includes pandemic planning and response, isolation and quarantine protocols, medical countermeasures distribution and dispensing, participation in mass shelter/casualty/fatality planning and more.	1/6/2023 8:18 AM
12	SAIL is a non-profit organization that helps people live more independently through an array of programs and services.	1/6/2023 8:14 AM
13	Operates public transportation services in Glens Falls, Queensbury, Lake George (T & V), Bolton	1/5/2023 4:28 PM
14	Legislative	12/14/2022 7:27 PM

**Q7 Please identify the location of your facility(ies) and/ or primary service area. You may choose more than one if your service area covers multiple communities, or “Warren County (entire area) ” if your service area is county-wide:**

Answered: 15 Skipped: 0



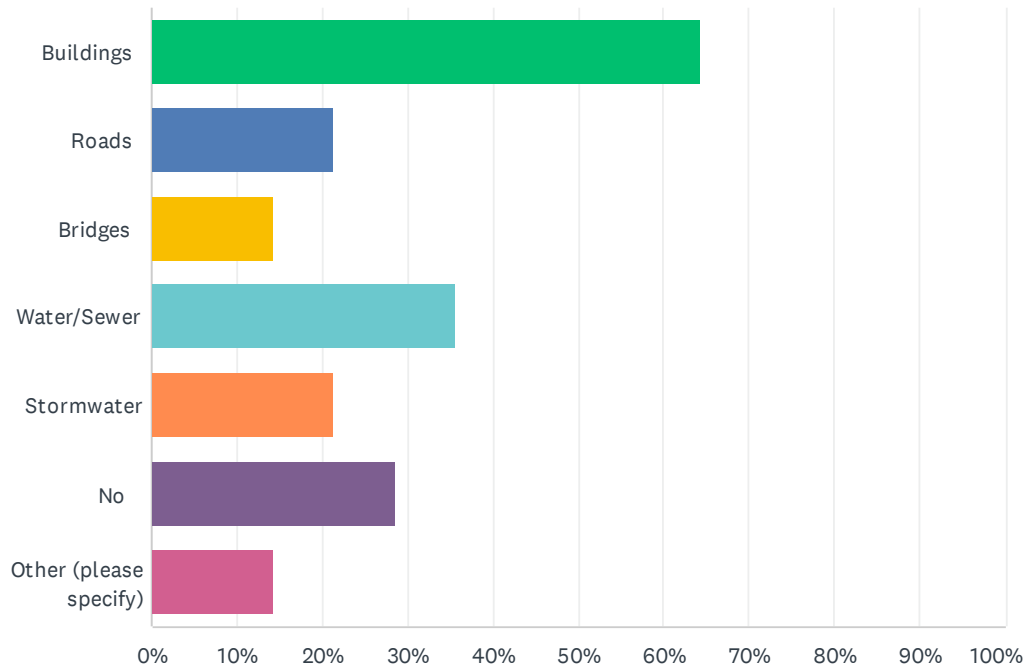
# Warren County Hazard Mitigation Plan - Stakeholder Survey

ANSWER CHOICES	RESPONSES	
Warren County (entire area)	66.67%	10
Bolton (T)	13.33%	2
Chester (T)	0.00%	0
Hague (T)	6.67%	1
Horicon (T)	0.00%	0
Glens Falls (C)	26.67%	4
Johnsburg (T)	0.00%	0
Lake George (T)	6.67%	1
Lake George (V)	6.67%	1
Lake Luzerne (T)	0.00%	0
Queensbury (T)	13.33%	2
Stony Creek (T)	0.00%	0
Thurman (T)	0.00%	0
Warrensburg (T)	6.67%	1
Other (please specify)	13.33%	2
Total Respondents: 15		

#	OTHER (PLEASE SPECIFY)	DATE
1	Hamilton County	7/13/2023 3:11 PM
2	Other partners throughout the Adirondacks as well as statewide.	1/8/2023 4:30 PM

**Q8 Does your organization maintain or manage any of the following within your designated service area? If not, answer “No” at the bottom, otherwise check all that apply.**

Answered: 14 Skipped: 1

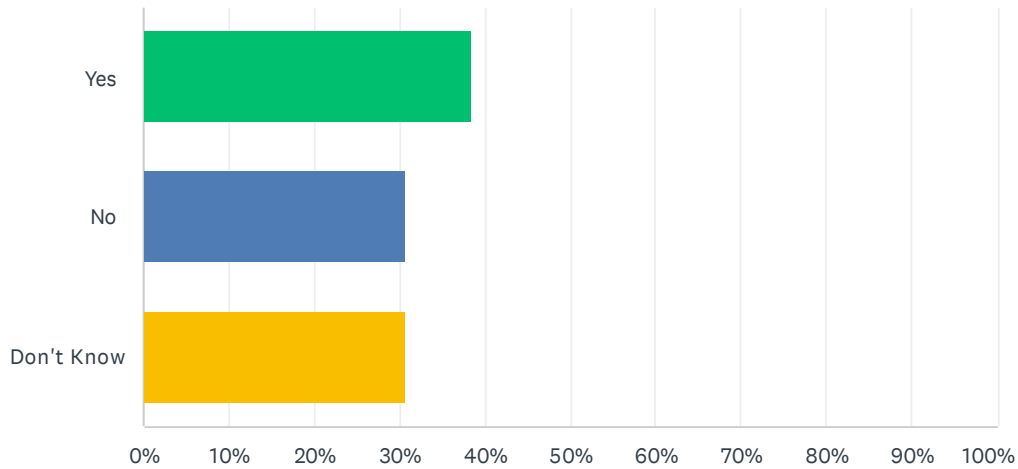


ANSWER CHOICES	RESPONSES
Buildings	64.29% 9
Roads	21.43% 3
Bridges	14.29% 2
Water/Sewer	35.71% 5
Stormwater	21.43% 3
No	28.57% 4
Other (please specify)	14.29% 2
Total Respondents: 14	

#	OTHER (PLEASE SPECIFY)	DATE
1	Bikeway path	7/13/2023 7:27 AM
2	Utility Poles, pipelines, underground electric distribution facilities.	1/18/2023 8:41 AM

# Q9 Looking back at previous hazard events, have buildings/facilities/structures you have worked in and/ or are responsible for been impacted by a hazard (ex. damage/closures/etc.)?

Answered: 13 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	38.46%	5
No	30.77%	4
Don't Know	30.77%	4
TOTAL		13

Q10 If you answered “Yes” to the above question, please describe the event that caused or is causing (if recurring) damage and loss of service/property. If quantifiable data is available, please provide that as well (number of damaged structures, monetary loss, etc.) (please explain)

Answered: 7   Skipped: 8

#	RESPONSES	DATE
1	Sewage back up in Middle School when storm water was visible in the streets (not draining).	7/24/2023 3:08 PM
2	Road Closure; Power Outages; Telephone Outages	7/13/2023 3:13 PM
3	Significant rain event washed out road	7/13/2023 1:25 PM
4	Flooding and tree hazards along bikeway. Power outages at Up Yonda Farm, flooding at the Fish Hatchery. Blocked culverts on railroad, due to beaver activity.	7/13/2023 7:35 AM
5	N/A	1/9/2023 9:32 AM
6	Fire in the municipal center	1/6/2023 8:22 AM
7	NA	1/5/2023 4:30 PM



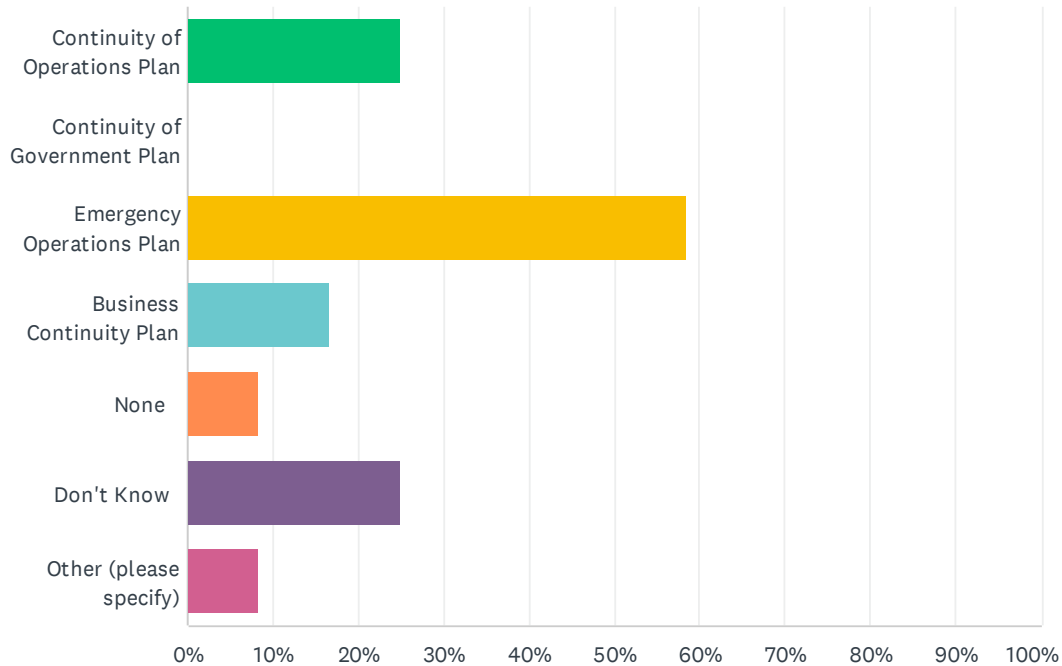
**Q11 Looking at where your facilities or services are located in Warren County, what areas do you believe to be the most vulnerable to hazards? What are these hazards? (please explain).**

Answered: 12 Skipped: 3

#	RESPONSES	DATE
1	The streets around the Middle and High Schools, Administrative Offices on Quade St, West Notre Dame, and Shippey Ave regularly have standing storm water.	7/24/2023 3:08 PM
2	North Country near bodies of water; Areas with significant snow storms, wind storms; Rainfall	7/13/2023 3:13 PM
3	Power outages, fallen trees, stormwater washing out roads, water supply (Lake George)	7/13/2023 1:25 PM
4	City Hall/Police Station Possible Fire	7/13/2023 11:07 AM
5	severe storms	7/13/2023 7:39 AM
6	The bikeway constantly has issues with trees down or blocking the bikeway. At the Fish Hatchery, every spring we need to be prepared for ice jams and flooding.	7/13/2023 7:35 AM
7	Electric Substations and gas regulating stations. As we've all seen in the news with the recent vandalism with electric utility equipment, it is high on the priority list for our security teams.	1/18/2023 9:13 AM
8	N/A	1/9/2023 9:32 AM
9	Salt mitigation to protect the lake. We currently use sand on the backside of our building/parking area and salt/sand mixture on the front. No other hazards as of this writing.	1/8/2023 4:31 PM
10	We rely on pre-identified municipal buildings and locations that are owned and maintained by City/Town municipalities for many of our activities. Our hub is the County Municipal Center. Vulnerabilities include fire, severe weather impacting the facility, loss of internet and utilities caused by weather or man made factors	1/6/2023 8:22 AM
11	Road hazards - downed trees, winter driving conditions	1/5/2023 4:30 PM
12	Industry along the river and watershed	12/14/2022 7:28 PM

## Q12 Is your organization covered by any of the following plans? Check all that apply

Answered: 12 Skipped: 3

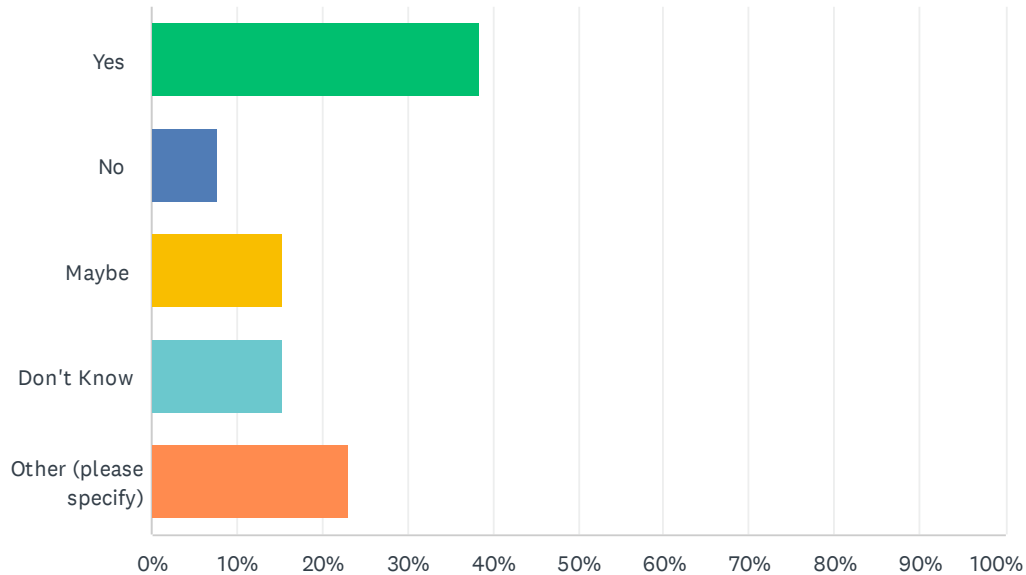


ANSWER CHOICES	RESPONSES
Continuity of Operations Plan	25.00% 3
Continuity of Government Plan	0.00% 0
Emergency Operations Plan	58.33% 7
Business Continuity Plan	16.67% 2
None	8.33% 1
Don't Know	25.00% 3
Other (please specify)	8.33% 1
Total Respondents: 12	

#	OTHER (PLEASE SPECIFY)	DATE
1	GFSD Safety Plan	7/24/2023 3:08 PM

# Q13 Do you believe the facilities and infrastructure for your organization are equipped to handle a disaster and/or resilient to damages?

Answered: 13 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	38.46%	5
No	7.69%	1
Maybe	15.38%	2
Don't Know	15.38%	2
Other (please specify)	23.08%	3
TOTAL		13

#	OTHER (PLEASE SPECIFY)	DATE
1	Some are and some not as well	7/13/2023 7:39 AM
2	We have systems in place to maintain our infrastructure while also performing continuous improvement projects for storm hardening/reliability on our networks.	1/18/2023 9:13 AM
3	We were able to operate successfully throughout the pandemic shutdown and help our community overcome the challenges for economic success. Unsure about other potential disasters as we haven't had them other than economic downturns (2008-2010, 1990's).	1/8/2023 4:33 PM

## Q14 Can you identify projects or programs that will reduce your facility/organization's vulnerability to damages and losses, including loss of operation/service, to hazard events? (Please explain)

Answered: 9    Skipped: 6

#	RESPONSES	DATE
1	No	7/24/2023 3:11 PM
2	Improved stormwater management, additional power generators,	7/13/2023 1:33 PM
3	Frequent inspections of facilities and regular maintenance	7/13/2023 7:52 AM
4	We have an emergency plan in place for fire, natural disasters and man made disasters and we conduct drills	7/13/2023 7:41 AM
5	Tree Trimming program - each of our circuits are trimmed on 5 year cycles, that means every 5 years "Main St in Queensbury" will be inspected for danger trees and trimmed by one of our tree contractors. "Computapole" program. This is a program that has us inspect and get eyes on every piece of National Grid electric infrastructure throughout our territory. We identify potential hazards like rotting poles, broken or unbonded guy wires, blown lightening arrestors, or broken cross arms. Once they are reported, the issues are then sent to the field workers for repairs. This is also done in 5 year cycles for each of our circuits. We have a similar program for our gas distribution system in regards to our Leak Prone Pipe program where we are replacing old cast iron mains and services with plastic. We have a gas corrosion team that inspects our pipe lines to make sure they are still in spec.	1/18/2023 9:13 AM
6	N/A	1/9/2023 9:33 AM
7	We were able to take advantage of the second round of PPP funding because of our 501c6 corporate status that helped us through the pandemic financially. Other strategies in the past have been to cut programs and not people to stay financially stable as an organization.	1/8/2023 4:36 PM
8	Upgrading work from home opportunities if the facility is unusable, ensuring a suitable secondary location is available for staff that have to be in the office, providing funding to ensure IT and other equipment necessary to maintain operations is provided	1/6/2023 8:32 AM
9	Sewage treatment plant power project	12/14/2022 7:29 PM

**Q15 Can you identify projects or programs that have been recently been implemented to reduce your facility's/organization's vulnerability, damage and losses, including loss of operation/service, to hazard events? (please explain)**

Answered: 12 Skipped: 3

#	RESPONSES	DATE
1	No	7/24/2023 3:11 PM
2	Warren County Continuity of Operations Plan implemented by Amy Hirsch; Response to COVID	7/13/2023 3:14 PM
3	Installed manmade wetland to help manage stormwater, installed limited number of generators to offset power losses	7/13/2023 1:33 PM
4	Frequent inspections of facilities and regular maintenance	7/13/2023 7:52 AM
5	Drilling our disaster plan	7/13/2023 7:41 AM
6	See Above.	1/18/2023 9:13 AM
7	N/A	1/9/2023 9:33 AM
8	We are reworking our strategic plan and have begun a five year financial look-back and a five year forecast CAGR - (compound annual growth rate).	1/8/2023 4:36 PM
9	none at a County level. Public Health initiatives to mitigate the impacts of a disaster have been undertaken as a requirement of the NYSDOH Office of Health Emergency Preparedness annual core deliverables which must be completed to receive funding from NYSDOH for the Warren County Public Health Emergency Preparedness program	1/6/2023 8:32 AM
10	SAIL has an internal emergency preparedness plan that we will exercise in the event of an emergency.	1/6/2023 8:16 AM
11	Installation of an emergency back-up generator	1/5/2023 4:31 PM
12	Storm water and sewage decoupling projects	12/14/2022 7:29 PM

## Q16 Do you have any questions or comments for Warren County?

Answered: 8   Skipped: 7

#	RESPONSES	DATE
1	No	7/24/2023 3:12 PM
2	NO	7/13/2023 7:52 AM
3	no	7/13/2023 7:41 AM
4	Warren County has been a great partner in National Grid's restoration and community efforts. I look forward to working with you for years to come.	1/18/2023 9:13 AM
5	No	1/9/2023 9:33 AM
6	None as of this writing.	1/8/2023 4:36 PM
7	What steps are being taken to prepare for the impacts of climate change? NYSDOH is making that a priority in Public Health Emergency Preparedness Planning? Also what steps are being taken to identify populations within Warren County with access and functional needs so planning considerations can be made and gaps can be filled as funding becomes available. Is there a plan to create or does one exist for a work pool for County workers if a department temporarily needs extra help to respond to and recovery from a disaster? Are the elected leaders in Warren County required to attend emergency preparedness trainings and participate in the hazard mitigation planning process?	1/6/2023 8:38 AM
8	None	1/6/2023 8:16 AM



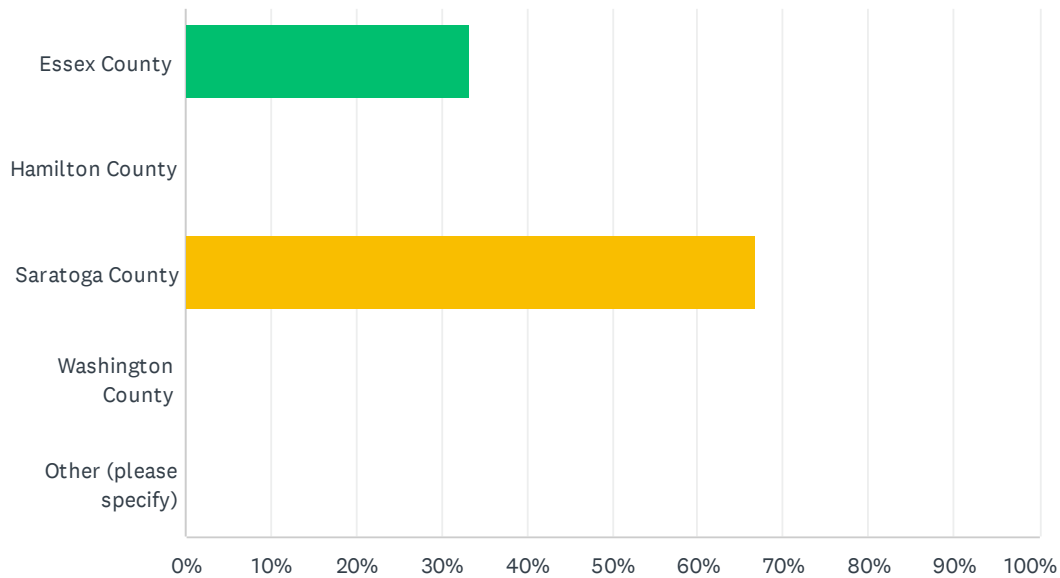


## D.3 NEIGHBORING COUNTY SURVEY

A neighboring county survey was sent to the surrounding counties of Warren due to their proximity to the County and because the effects of hazard events that impact Warren County would be similar to that of their neighbors. A summary of the results are included on the following pages.

## Q1 Please indicate the community in which you represent

Answered: 3   Skipped: 0



ANSWER CHOICES		RESPONSES	
Essex County		33.33%	1
Hamilton County		0.00%	0
Saratoga County		66.67%	2
Washington County		0.00%	0
Other (please specify)		0.00%	0
TOTAL			3

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

## Q2 Name and Title of Respondent

Answered: 3    Skipped: 0

#	RESPONSES	DATE
1		
2		
3		

### Q3 What department do you represent?

Answered: 3   Skipped: 0

#	RESPONSES	DATE
1	Saratoga County Emergency Management	5/1/2023 10:28 AM
2	Essex County Emergency Services	5/1/2023 8:14 AM
3	OEM	1/9/2023 2:35 PM

Q4 Please provide your contact information.

Answered: 3    Skipped: 0

ANSWER CHOICES	RESPONSES	
Name	0.00%	0
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	3
Phone Number	100.00%	3

#	NAME	DATE
	There are no responses.	
#	COMPANY	DATE
	There are no responses.	
#	ADDRESS	DATE
	There are no responses.	
#	ADDRESS 2	DATE
	There are no responses.	
#	CITY/TOWN	DATE
	There are no responses.	
#	STATE/PROVINCE	DATE
	There are no responses.	
#	ZIP/POSTAL CODE	DATE
	There are no responses.	
#	COUNTRY	DATE
	There are no responses.	
#	EMAIL ADDRESS	DATE
1		
2		
3		
#		
1		

## Warren County Hazard Mitigation Plan - Neighboring Community Survey

2

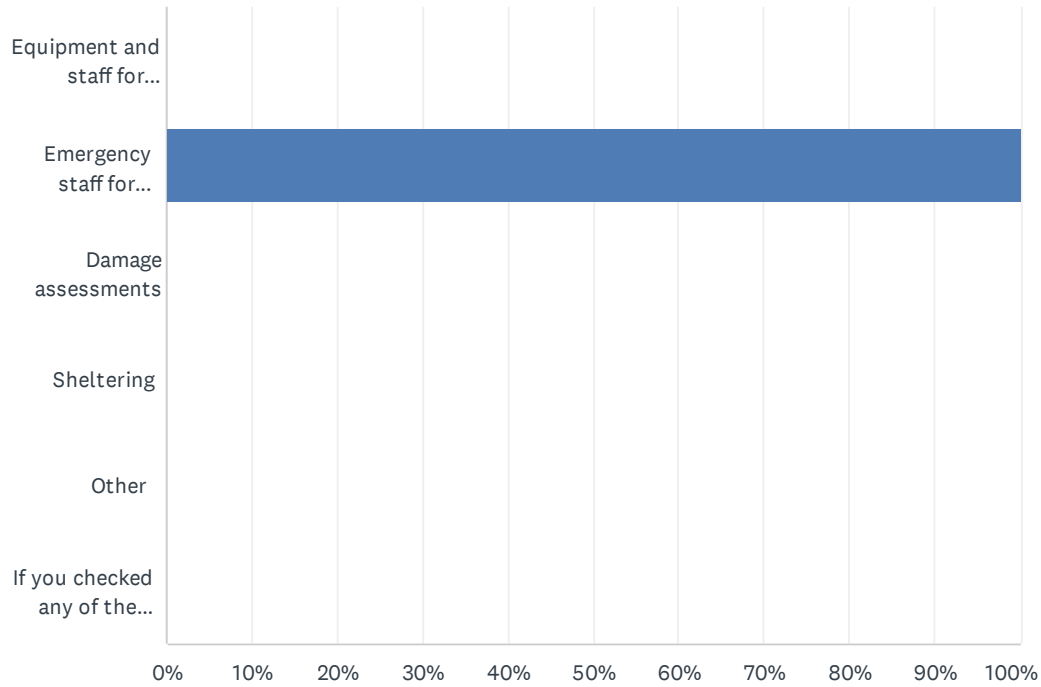
3

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## Q5 Do you have any shared service agreements or mutual aid agreements in place with Warren County for the following?

Answered: 1 Skipped: 2

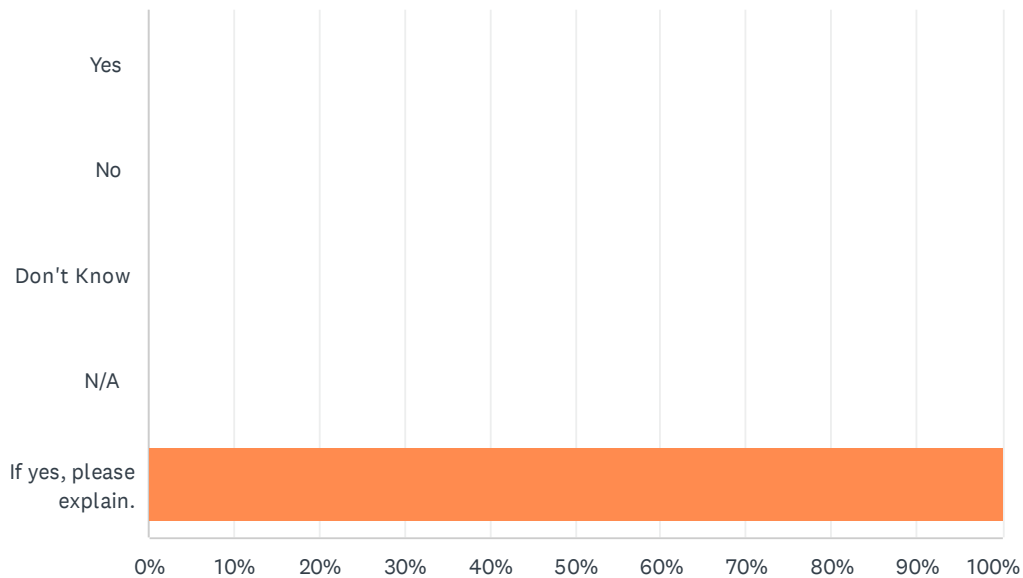


ANSWER CHOICES	RESPONSES	
Equipment and staff for debris cleanup and removal	0.00%	0
Emergency staff for evacuations/disaster response	100.00%	1
Damage assessments	0.00%	0
Sheltering	0.00%	0
Other	0.00%	0
If you checked any of the above, please explain.	0.00%	0
Total Respondents: 1		

#	IF YOU CHECKED ANY OF THE ABOVE, PLEASE EXPLAIN.	DATE
	There are no responses.	

## Q6 Is Warren County involved in your community's comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

Answered: 2   Skipped: 1

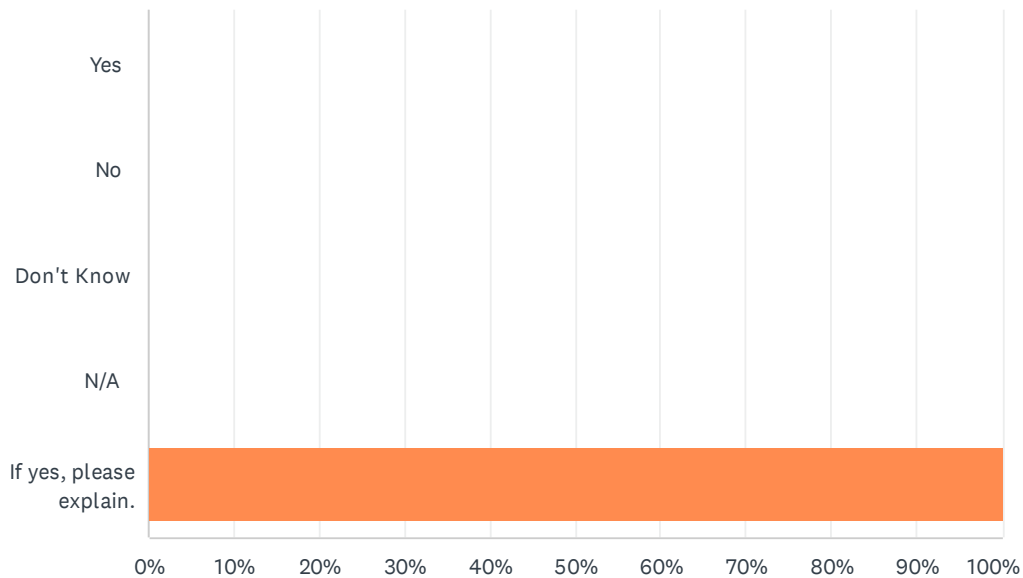


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
Don't Know	0.00% 0
N/A	0.00% 0
If yes, please explain.	100.00% 2
<b>TOTAL</b>	<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	Fire/EMS mutual aid plans	5/1/2023 3:10 PM
2	Warren County was instrumental in helping us to develop many of our plans. They are a partner that could be asked for assistance in a variety of disasters	1/9/2023 2:38 PM

## Q7 Is your community involved in Warren County's comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

Answered: 2   Skipped: 1

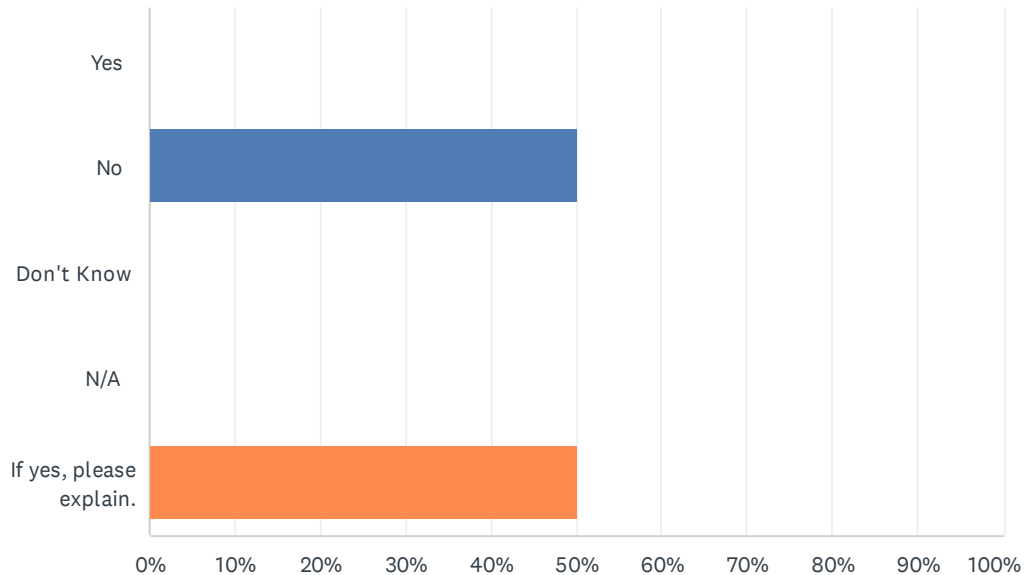


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
Don't Know	0.00% 0
N/A	0.00% 0
If yes, please explain.	100.00% 2
<b>TOTAL</b>	<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	Fire/EMS mutual aid plans	5/1/2023 3:10 PM
2	Same as above	1/9/2023 2:38 PM

**Q8 Is Warren County involved in your community's Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of your community's essential functions for a period of time?**

Answered: 2   Skipped: 1

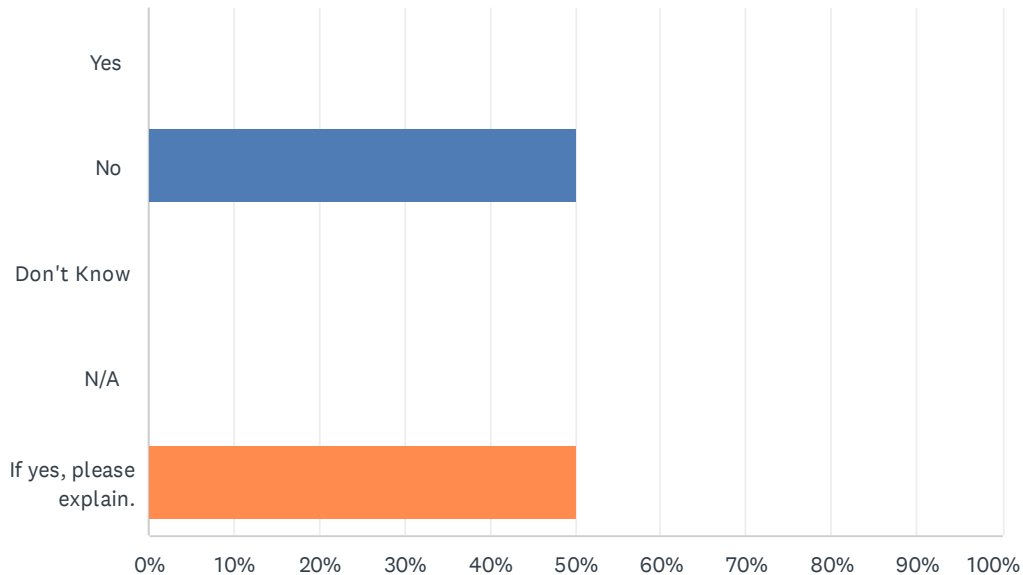


ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		50.00%	1
Don't Know		0.00%	0
N/A		0.00%	0
If yes, please explain.		50.00%	1
TOTAL			2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Mutual aid plans Fire/EMS/Law	1/9/2023 2:38 PM

**Q9 Is your community involved in Warren County's Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of Warren County's essential functions for a period of time?**

Answered: 2   Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	50.00%	1
<b>TOTAL</b>		<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	Mutual aid plans Fire/EMS/Law	1/9/2023 2:38 PM

## Q10 Thinking about emergency operations and disaster response, please explain how these actions are communicated between communities.

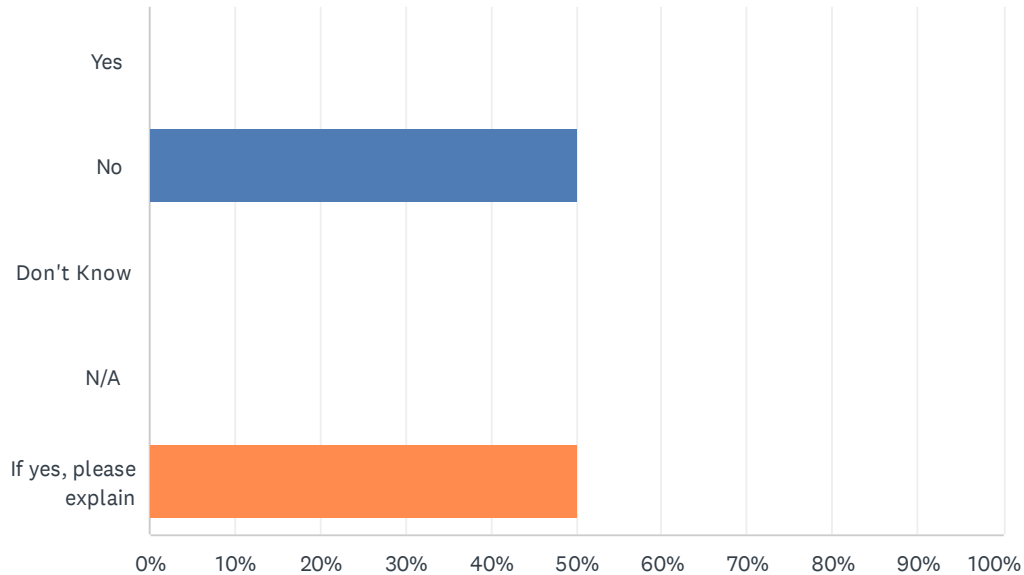
Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	Phone, email, NY Responds	5/1/2023 3:10 PM
2	Emergency Managers work together to respond to incidents and may work together to mitigate against incidents along shared vulnerabilities.	1/9/2023 2:38 PM



## Q11 Does your community share risk and vulnerability assessments (flood mapping, HAZUS, etc.) with Warren County?

Answered: 2 Skipped: 1

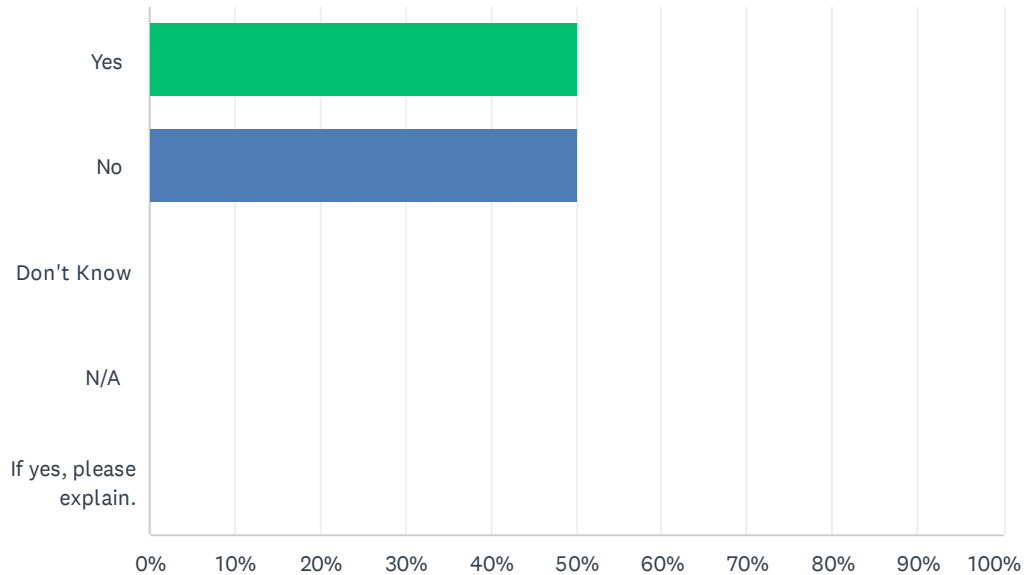


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain	50.00%	1
TOTAL		2

#	IF YES, PLEASE EXPLAIN	DATE
1	Flood mapping	5/1/2023 3:11 PM

## Q12 Do you collaborate with Warren County on establishing evacuation routes and alternate evacuation routes?

Answered: 2 Skipped: 1

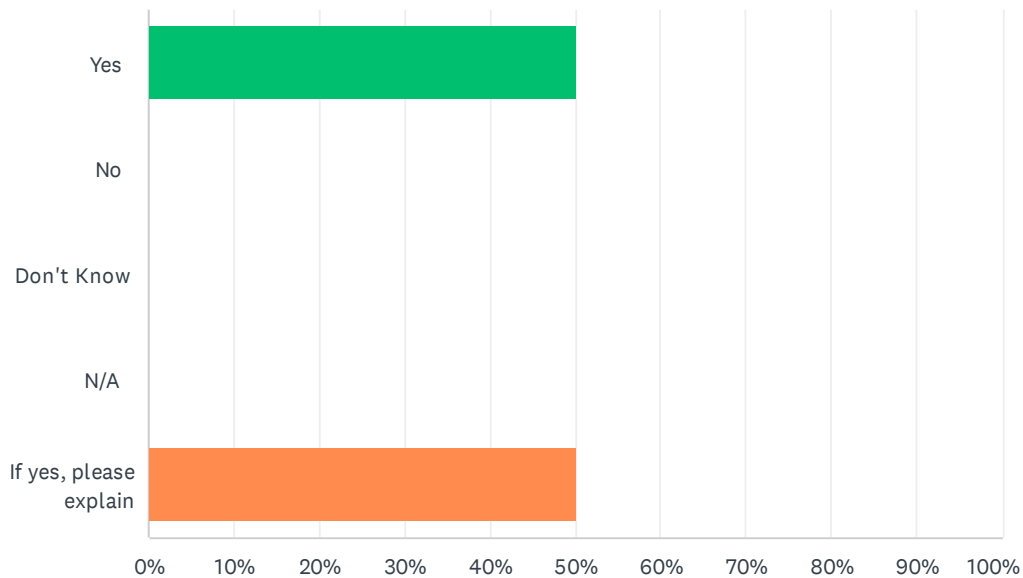


ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

### Q13 Do you and Warren County consult with one another before making evacuation decisions that would impact one another (recommending evacuation routes into neighboring jurisdictions)?

Answered: 2 Skipped: 1

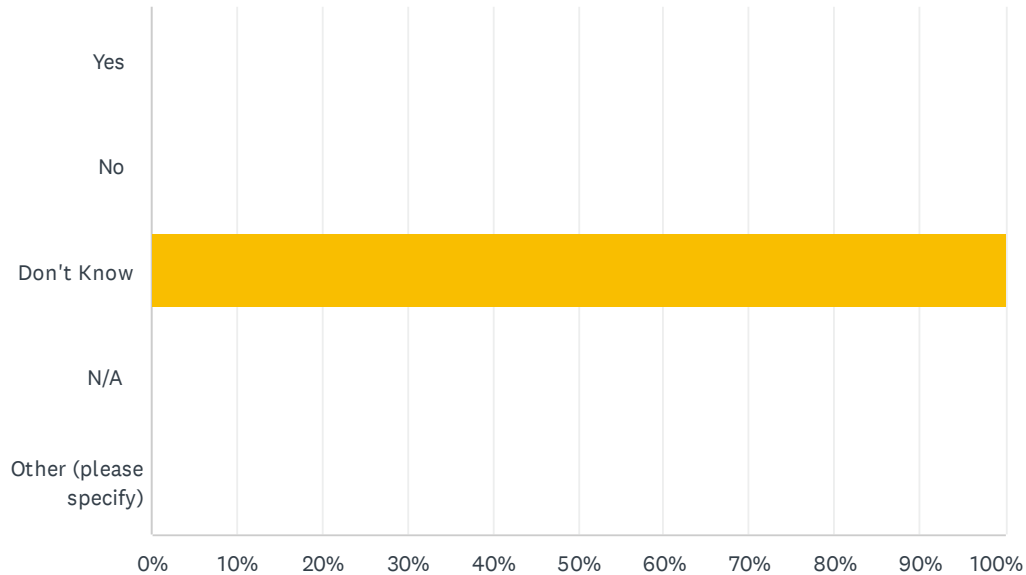


ANSWER CHOICES	RESPONSES
Yes	50.00% 1
No	0.00% 0
Don't Know	0.00% 0
N/A	0.00% 0
If yes, please explain	50.00% 1
<b>TOTAL</b>	<b>2</b>

#	IF YES, PLEASE EXPLAIN	DATE
1	Multi-county evacuations would require collaboration	5/1/2023 3:14 PM

## Q14 Are evacuation routes maintained to the same level of protection across jurisdictional lines?

Answered: 2 Skipped: 1

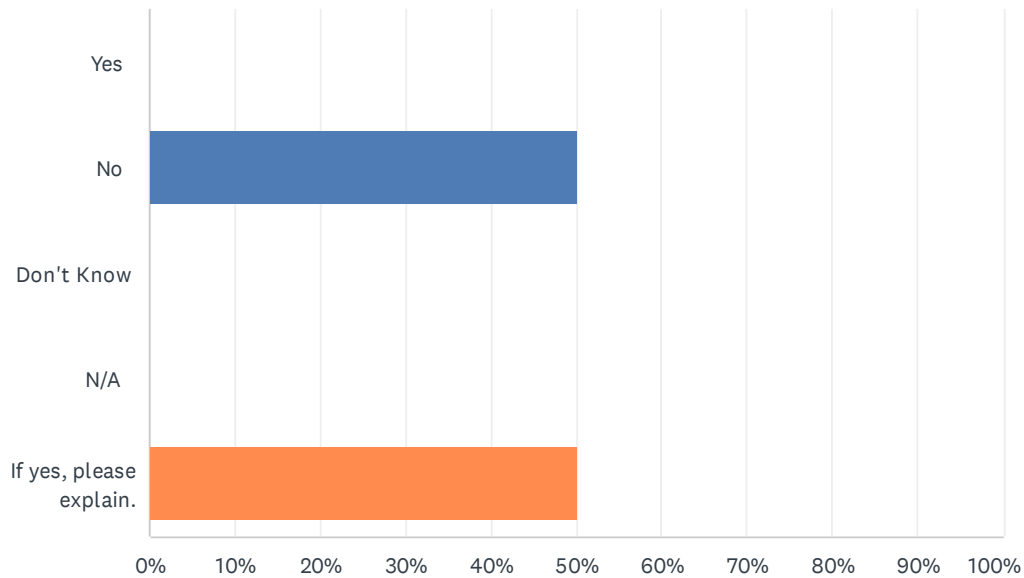


ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		0.00%	0
Don't Know		100.00%	2
N/A		0.00%	0
Other (please specify)		0.00%	0
TOTAL			2

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

## Q15 Do you collaborate with Warren County on establishing shelters?

Answered: 2   Skipped: 1

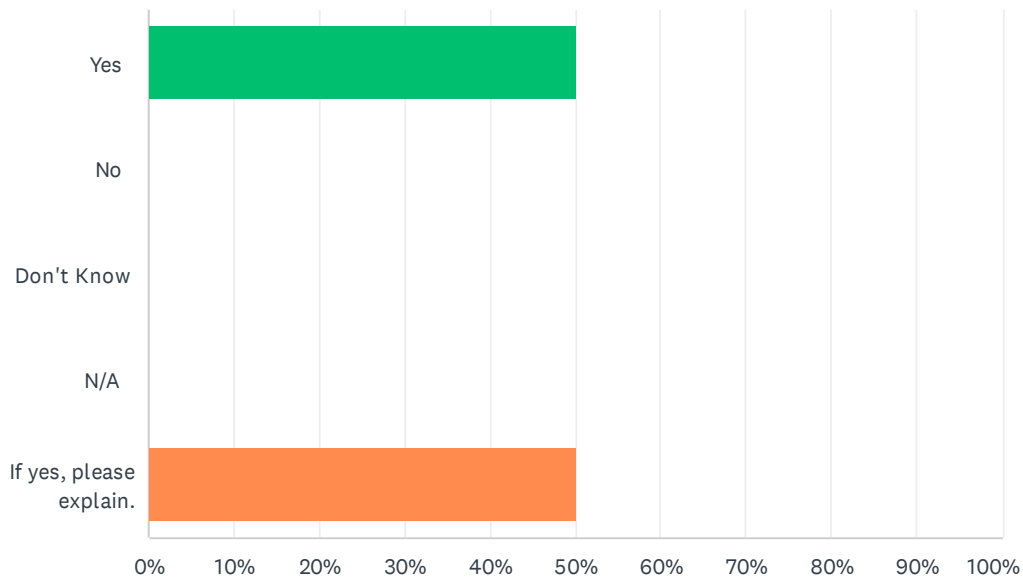


ANSWER CHOICES		RESPONSES	
Yes		0.00%	0
No		50.00%	1
Don't Know		0.00%	0
N/A		0.00%	0
If yes, please explain.		50.00%	1
TOTAL			2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Historically we have collaborated on shared hazards/events	5/1/2023 3:14 PM

## Q16 Do you and Warren County consult with one another before making sheltering decisions that would impact one another (recommending shelters in neighboring communities)?

Answered: 2   Skipped: 1



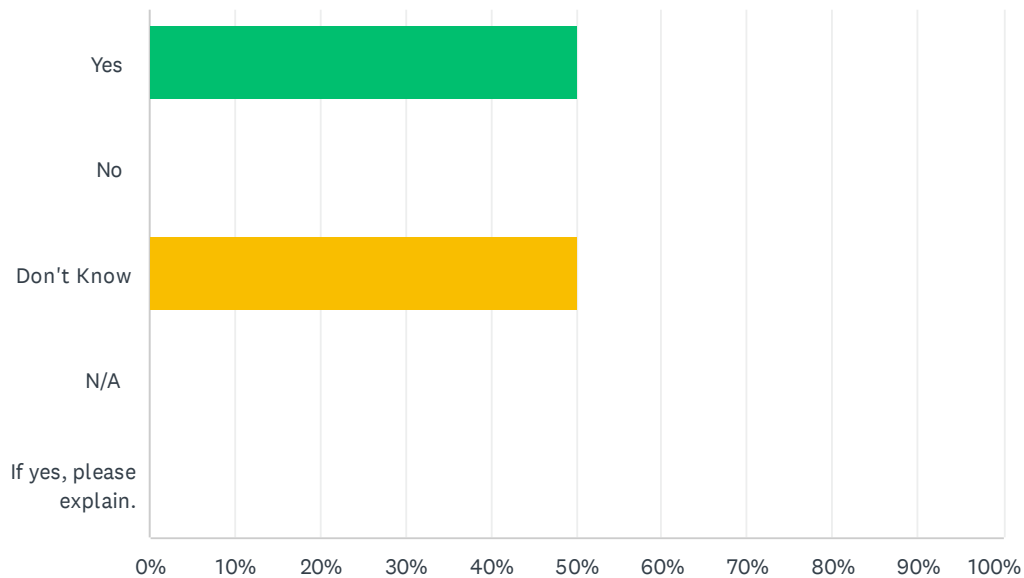
ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	0.00%	0
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	50.00%	1
<b>TOTAL</b>		<b>2</b>

#	IF YES, PLEASE EXPLAIN.	DATE
1	By phone/email	5/1/2023 3:14 PM



**Q17 Do you and Warren County share any spaces suitable for temporary housing? This includes locations suitable to place temporary housing units to house residents displaced by a disaster.**

Answered: 2 Skipped: 1

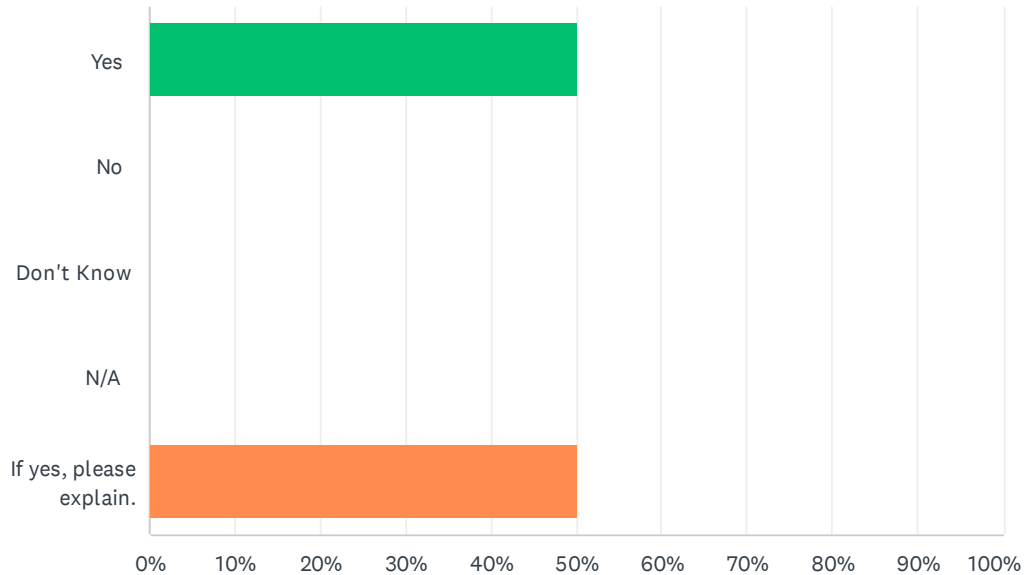


ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	0.00%	0
Don't Know	50.00%	1
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

## Q18 Does your community have access to contact information for Warren County's emergency operation centers?

Answered: 2 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	0.00%	0
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	50.00%	1
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Phone/email	5/1/2023 3:22 PM

Q19 Please describe any situations or hazards that are of concern to both your community and Warren County. For example, would flooding along a particular waterway impact both jurisdictions, or are there any facilities or infrastructure that would affect both jurisdictions if it/they failed?

Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	All dams/flooding along common county borders	5/1/2023 3:22 PM
2	Flooding along the Hudson - which serves as the boundary between a good portion our counties. Additionally, various incidents along the northway. Also, large scale incidents (eg brush fire) along our rural border.	1/9/2023 2:51 PM

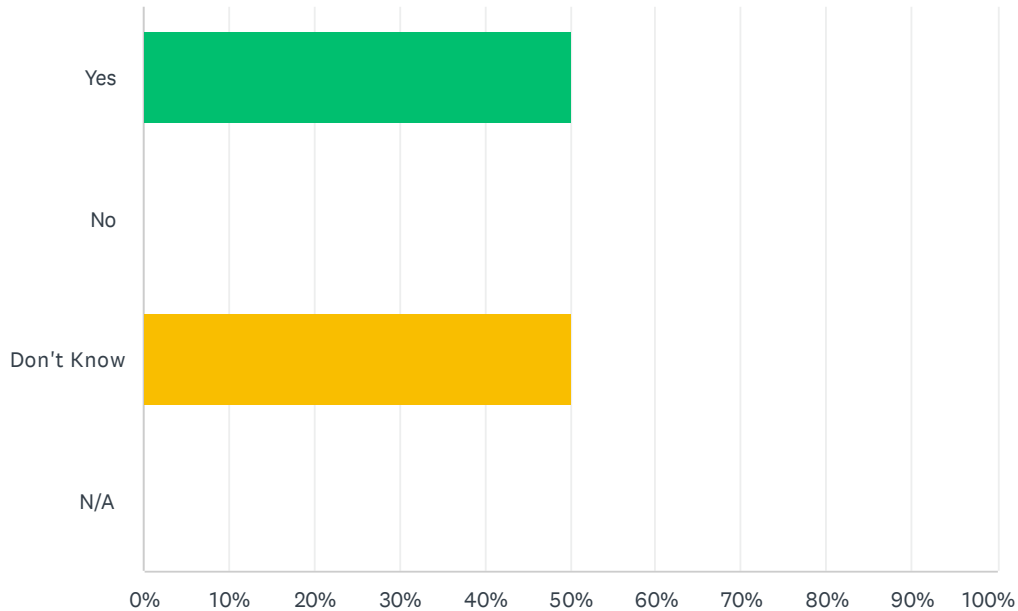
## Q20 Please explain how information is shared between communities regarding mitigation projects.

Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	Phone/email	5/1/2023 3:22 PM
2	The hazard mitigation plan, intercommunity communication often by the highway department leadership	1/9/2023 2:51 PM

## Q21 Is information regarding mitigation shared during the planning and implementation phases of the projects?

Answered: 2   Skipped: 1



ANSWER CHOICES		RESPONSES	
Yes		50.00%	1
No		0.00%	0
Don't Know		50.00%	1
N/A		0.00%	0
TOTAL			2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

## Q22 Are you aware of any projects for the following that requires cross-collaboration between jurisdictional boundaries?

Answered: 0   Skipped: 3

 No matching responses.

ANSWER CHOICES	RESPONSES	
Stormwater projects	0.00%	0
Watershed projects or planning	0.00%	0
Floodplain projects or planning	0.00%	0
Connected roadway improvements	0.00%	0
Natural infrastructure restoration	0.00%	0
Outreach (education and outreach campaigns, programs for public information, etc.)	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 0		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	



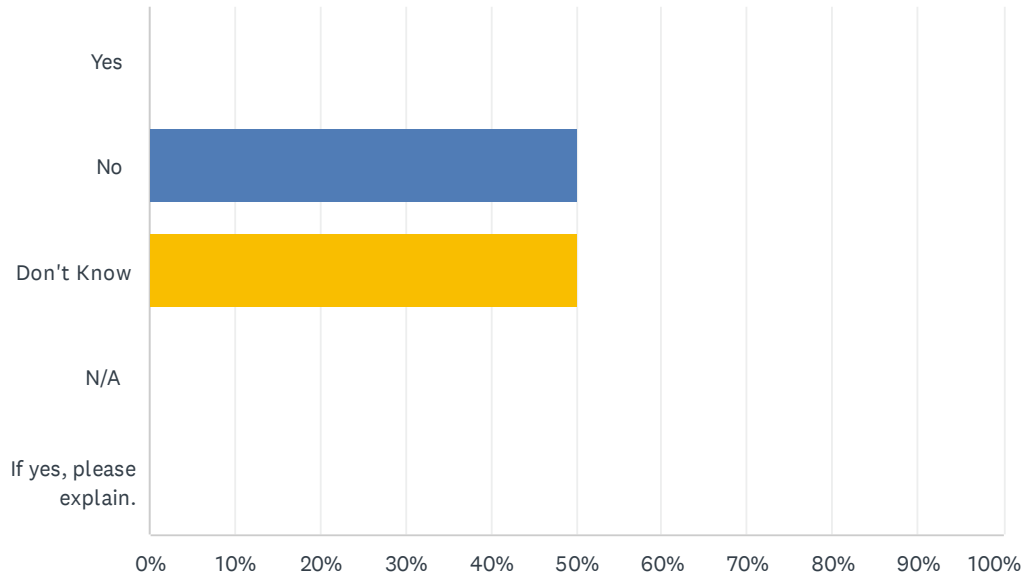
## Q23 If you selected anything above, please explain.

Answered: 0   Skipped: 3

#	RESPONSES	DATE
	There are no responses.	

## Q24 Have your community and Warren County collaborated on grant applications?

Answered: 2   Skipped: 1

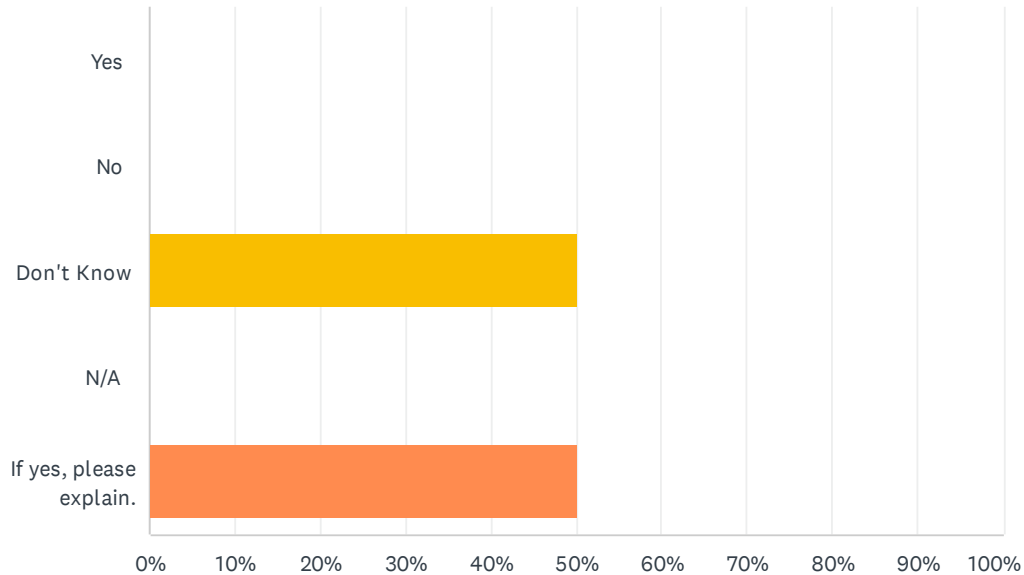


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	50.00%	1
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

## Q25 Are you aware of any organizations that carry out education and outreach regarding hazards in both your community and Warren County?

Answered: 2 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
Don't Know	50.00%	1
N/A	0.00%	0
If yes, please explain.	50.00%	1
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
1	Dam operators	5/1/2023 3:24 PM

## Q26 What are opportunities or ideas to optimize cooperation with Warren County on emergency management operations and hazard mitigation projects?

Answered: 2   Skipped: 1

#	RESPONSES	DATE
1	Open communication when planning cross-jurisdictional projects	5/1/2023 3:24 PM
2	Corresponding HAZMIT Plans/Projects	1/9/2023 2:52 PM

## Q27 Do you have any relevant questions or comments for Warren County?

Answered: 1   Skipped: 2

#	RESPONSES	DATE
1	We will be going through a HAZMIT plan update later this year as well	1/9/2023 2:52 PM



## D.4 WEBSITE AND SOCIAL MEDIA POSTS

The following provides screenshots of the informational fact sheet, website, news articles, and social media posts.





# WARREN COUNTY HAZARD MITIGATION PLAN

2023 Update

## What is a Hazard Mitigation?

Hazard mitigation is an action to help reduce long-term risks caused by hazards or disasters, such as flooding, earthquakes, or wildfires. The purpose of hazard mitigation is to protect people and structures, and minimize the costs of disaster response and recovery. Hazard mitigation can take many forms: capital projects, policies, education, and environmental protection.

Proactive mitigation leads to more cost-effective projects. By contrast, reactive mitigation, tends to lead to severe damage and often more costly fixes; it simply costs too much to address the effects of disasters only after they happen. A surprising amount of damage can be prevented if we can anticipate where and how disasters occur, and take steps to prevent those damages.

## What is a Hazard Mitigation Plan?

Hazard Mitigation Plans (HMP) are prepared and adopted by counties and municipalities with the primary purpose of identifying, assessing, and reducing the long-term risk to life and property from hazard events. HMPs are most effective when they are based on a comprehensive, long-term plans developed before a disaster occurs.

Effective mitigation planning can break the cycle of disaster damage, reconstruction, and repeated damage. There are four key elements of an HMP: 1) a risk assessment, 2) capability assessment, 3) mitigation strategy, and 4) plan maintenance procedures.

The purpose of mitigation planning is to identify local policies and actions that can be implemented over the long term to reduce risk and future losses from hazards. These mitigation policies and actions are identified based on an assessment of hazards, vulnerabilities, and risks and the participation of a wide range of stakeholders and the public in the planning process.

## Purpose

The Warren County Soil and Water Conservation District is leading the update of the Warren County HMP. This plan is an opportunity to detail a variety of potential hazards that could affect some or all of the residents and will also allow the county and participating municipalities to be eligible for future mitigation funding from the Federal Emergency Management Agency (FEMA).

The goal of the plan is to identify projects that can reduce damages from future hazards. The plan will include a risk assessment and a hazard mitigation strategy. The primary hazards of concern in the counties include: Dam Failure, Disease Outbreak, Earthquake, Flood, Infestation, Severe Storm, Severe Winter Storm, and Wildfire.

The study will focus on existing buildings and potential future development, infrastructure, and lifelines that might be impacted.

Lifelines include but are not limited to municipal buildings and infrastructure such as power-generation facilities, water utilities, roadways, railroads and communication systems.



## What are the benefits of Hazard Mitigation?

Mitigation planning will help the county and the participating jurisdictions prepare for disasters, before they happen, to reduce impacts when a disaster occurs.

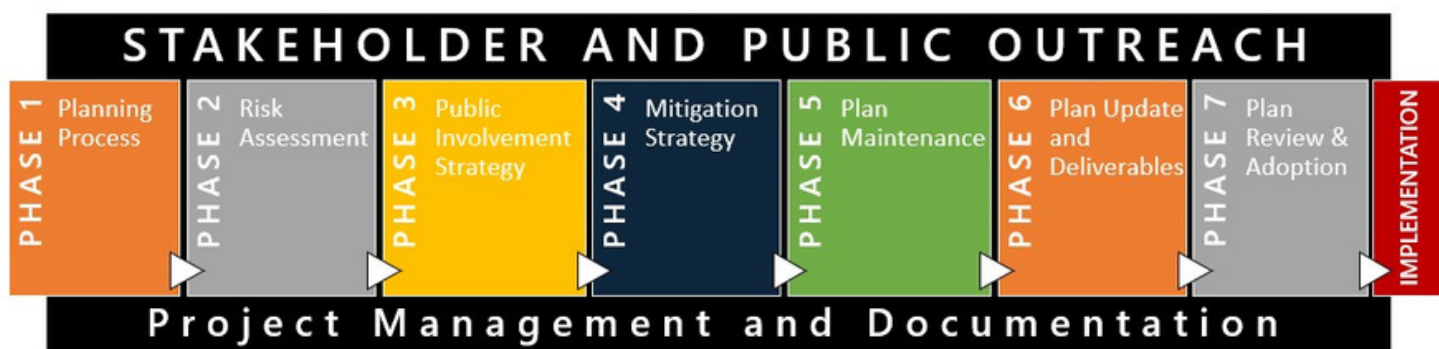
Benefits include:

- Identifying actions for risk reduction that are agreed upon by stakeholders and the public,
- Focusing resources on the greatest risks and vulnerabilities,
- Building partnerships by involving citizens, organizations, and businesses,
- Increasing education and awareness of threats and hazards, as well as their risks,
- Communicating priorities to state and federal officials, and
- Aligning risk reduction with other community objectives.

## What is required in a Hazard Mitigation Plan?

FEMA regulations require that the public must be engaged in all phases of the plan's development. The HMP should review and incorporate existing plans and programs that can support or enhance hazard mitigation. The plan must assess the risk to natural hazards that may impact the planning area and identify and prioritize mitigation actions that can be taken. The HMP must also include a strategy for maintaining the plan, which must be updated every 5 years.

## Planning Process



## FAQs

**What is mitigation?** Any sustained action taken to reduce/ eliminate long-term risk to life and property from a hazard event.

**How can you reduce/eliminate risk?** Identify mitigation actions/ projects/activities or processes that can include 1) Local plans and regulations; 2) Structure and infrastructure projects; 3) Natural systems protection; 4) Education and awareness programs.

**What grant funding is available?** FEMA Hazard Mitigation Assistance grant funding is available with a FEMA-approved Hazard Mitigation Plan (annual and post-disaster opportunities).

**How can I support the plan?** Take the public survey! This will help us obtain input and get a better understanding of public preparedness for hazard events.

**Where can I see the 2023 plan?** Sections of the draft plan will be available late-2022 for download, review and comment on the Warren County HMP website at: <https://www.warrencountynewyorkhmp.com/>

For more information, please visit our website:

<https://www.warrencountynewyorkhmp.com/>

For more information about this process, please contact:



Warren County Soil and Water Conservation District  
518-623-3119

Live or work in Warren County? Take our survey!  
<https://www.surveymonkey.com/r/WarrenNYHMPPublic>

-or-

scan the QR code to complete the survey







# WARREN COUNTY HAZARD MITIGATION PLAN

## 2023 UPDATE

[Home](#)[About](#)[What is Mitigation](#)[Meetings](#)[Calendar](#)[Explore the Plan](#)[Additional Information](#)

### Warren County Hazard Mitigation Plan 2023 Update

The draft Warren County Hazard Mitigation Plan is available for public review. This plan will be available for public review through September 2<sup>nd</sup>, 2023.

Welcome to the Warren County Hazard Mitigation Plan (HMP) Website. This website provides project updates, resources, and links to hazard mitigation in support of the HMP update.

The goal of the project is to save lives and property through the reduction of hazard vulnerability for Warren County and its municipalities. During the course of this planning project, county and local leaders and the community will work in tandem to identify risks, assess capabilities, and formulate a strategy to reduce disaster vulnerability.

Public participation and feedback are vital parts of the hazard mitigation planning process. The Warren County HMP Steering Committee developed a mitigation survey to assist in providing the public an outlet to contribute to the Warren County HMP update which was active through June 8, 2023. The results of the survey will be used to develop portions of the HMP.

If you have any questions or comments regarding the HMP or planning process, please complete this form, and someone from the Planning Partnership will be in touch.

Events in August 2023–July 2024

# **WARREN COUNTY**

## **2023 HAZARD MITIGATION PLAN UPDATE**

**When natural hazards occur, how are you prepared?  
Let us know in this survey as part of Warren County's  
Hazard Mitigation Plan update.**

**<https://www.warrencountynewyorkhmp.com/>**



For more information, please contact Warren County Soil  
and Water Conservation District:  
(518) 623-3119



Boost post



# HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note this ...

March 9, 2023 at 6:11 AM

ID: 555241586795063

## Interactions

0 reactions

0 comments

5 shares

Overview

Performance

Feed preview

## Performance

### Reach ⓘ

Total	964
Organic	964 (100%)
Paid	0 (0%)

### Engagements ⓘ

Reactions	0
Comments	0
Shares	5

View details

### Negative interactions ⓘ

Total	0
Unique	0

## Feed preview



Warren County, New York

March 9 · 🌐



HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note





Boost post



# HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note this ...

January 12, 2023 at 6:21 AM  
ID: 519354607050428

## Interactions

2 reactions

0 comments

2 shares

- Overview
- Performance
- Feed preview

## Performance

**Reach ⓘ**

Total

928

Organic	928 (100%)
Paid	0 (0%)

**Engagements ⓘ**

Reactions

2

Comments	0
Shares	2

View details

**Negative interactions ⓘ**

Total

0

Unique	0
--------	---





























## Feed preview

Warren County, New York

January 12 · 🌐

HELP US COMPLETE OUR HAZARD MITIGATION PLAN -- Please note



	HELP US COMPLETE OUR HAZ...	 Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Thu Mar 9, 6:11am	 	--					
							Distribution				video views	0:00 Average minutes
	HELP US COMPLETE OUR HAZ...	 Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Thu Jan 12, 6:21am	 	--					
							Distribution				video views	0:00 Average minutes
	HELP US COMPLETE OUR HAZ...	 Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Sat Jan 7, 10:19am	 	--					
							Distribution				video views	0:00 Average minutes
	HELP US COMPLETE OUR HAZ...	 Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Dec 22, 2022	 	--					
							Distribution	0 Minutes viewed	0 3-second video views	0 1-Minute video views		0:00 Average minutes
	Good advice from Warren Coun...	 Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Dec 20, 2022	 	--	0 Minutes viewed	0 3-second video views	0 1-Minute video views		0:00 Average minutes
	Warren County is looking for p...	 warrencountynynewyork	<a href="#">View insights</a>	<a href="#">...</a>	Dec 9, 2022	 	--	--	--	--		--
	Warren County and its partners...	 Warren County, New York	<a href="#">View insights</a>	<a href="#">...</a>	Dec 9, 2022	 	--	0 Minutes viewed	0 3-second video views	0 1-Minute video views		0:00 Average minutes

-- your other posts within 21+ days of publishing.

↓ 399,999,999.0x less Impressions

↓ 399,999,999.0x less Link clicks

↓ 399,999,999.0x less Reactions

Understand your Distribution

Impressions is the metric that's likely having the biggest effect on the distribution of this post.



[https://poststar.com/news/local/warren-county-seeks-input-to-update-hazard-mitigation-plan/article\\_beb98a44-7b21-11ed-a710-b7a678f9a3f7.html](https://poststar.com/news/local/warren-county-seeks-input-to-update-hazard-mitigation-plan/article_beb98a44-7b21-11ed-a710-b7a678f9a3f7.html)

# Warren County seeks input to update hazard mitigation plan

**Post-Star staff report**

Dec 13, 2022

**W**arren County is looking for public input as it updates its Multi-Jurisdictional Hazard Mitigation Plan, a document that details the potential hazards, such as storm-related conditions, that could affect residents and visitors.

The plan is an opportunity to detail a variety of potential hazards that might affect those who live in and visit Warren County. Ann Marie Mason, Warren County's director of emergency services, said that updating the plan allows the county and participating jurisdictions to be eligible for future mitigation funding from the Federal Emergency Management Agency.

"Public participation and feedback are a vital part of the hazard mitigation planning process," Mason said in a news release. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."

---

## People are also reading...

- 1 **South Glens Falls may sue to have electrical box fixed**
  - 2 **Mr. Shatner goes to Ticonderoga**
  - 3 **Glens Falls Windy Hill residents react to possible Quaker Road development**
  - 4 **Reminder: New print edition, schedule this week**
-

The survey can be found here:

**<https://www.surveymonkey.com/r/WarrenNYHMPPublic>**.

The plan identifies projects that can reduce damages from future natural hazards. It also creates a framework for risk-based decision making to reduce damages to lives, property and the economy from future disasters.

The county will involve the private sector, nonprofit organizations and other community partners in the planning process.

The approach is consistent with a “Whole Community Approach” that seeks to involve the entire community in disaster and hazard planning, according to Jim Lieberum, district manager of Warren County Soil and Water Conservation District, one of the planning partners.

The plan will include a risk assessment and a hazard mitigation strategy. It will focus on existing buildings and potential future development, infrastructure, and critical facilities that might be impacted. Critical facilities are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard, and include essential facilities, transportation systems, lifeline utility systems, high-potential loss facilities and hazardous material facilities.

The update of the plan allows the county and participating jurisdictions to continue to be eligible for grant-funded projects such as home acquisitions or elevations to either remove houses located in the floodplain to generate open space and increase flood storage or to raise their first floor above the FEMA base flood elevation and local flood control measures.

For more information or to get involved in this project, contact Lieberum at 518.623.3119 or **[jiml@warrenswcd.org](mailto:jiml@warrenswcd.org)**.

To stay informed about the project, visit:

**<https://www.warrencountynewyorkhmp.com>**.



# Input needed on natural disasters in Warren County

by: [Jay Petrequin](#)

Posted: Dec 9, 2022 / 11:54 AM EST

Updated: Dec 9, 2022 / 12:03 PM EST



Severe damage to the driveway and parking lot of the Lakeview Terrace Hotel and the Fairview Association, along Lake George, N.Y. (Photo: Jay Petrequin)

SHARE



WARREN COUNTY, N.Y. (NEWS10) – It's important to know and understand what potential hazards could come with where one lives, and what different weather conditions can bring to those areas. Warren County is looking for public input as it makes updates to its plan to curb natural disaster danger for county residents.

[Get the latest news, weather, sports and community events delivered right to your inbox!](#)

The county's Multi-Jurisdictional Hazard Mitigation Plan is up for revision – and [a survey](#) gives residents a chance to weigh in on it. The plan is a document that can be used by the county to reduce the impact and damage from natural disasters, especially targeted at preventing and

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“Public participation and feedback are a vital part of the hazard mitigation planning process,” said Warren County Emergency Services Director Ann Marie Mason. “We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made.”

[The survey asks for residents](#) to report what types of natural disasters they have seen and experienced in Warren County over the last decade, such as flooding, drought and climate change impacts. It also seeks information such as concern for future disasters, and how residents get their disaster information.

[ARPA lets Glens Falls Hospital's crisis unit grow](#)

The Hazard Mitigation Plan is updated every five years. The plan is used for communities to make risk-based decisions that can lead to fewer lives being lost, or less property being damaged, in the event of a disaster. The process going forward will also involve voices from nonprofits, community partners and the private sector. The plan will analyze how best to protect essential community facilities, transportation systems, lifeline utilities and hazardous material facilities.



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Holiday • 5 hours ago



# Warren County seeks input to update hazard mitigation plan

Post-Star staff report Dec 13, 2022 0



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02:46

**W**arren County is looking for public input as it updates its Multi-Jurisdictional Hazard Mitigation Plan, a document that details the potential hazards, such as storm-related conditions, that could affect residents and visitors.

The plan is an opportunity to detail a variety of potential hazards that might affect those who live in and visit Warren County. Ann Marie Mason, Warren County's director of emergency services, said that updating the plan allows the county and participating jurisdictions to be eligible for future mitigation funding from the Federal Emergency Management Agency.

"Public participation and feedback are a vital part of the hazard mitigation planning process," Mason said in a news release. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."



WARREN COUNTY, NY -- Warren County is looking for public input as it updates its **Multi-Jurisdictional Hazard Mitigation Plan**, a document that details the potential hazards, such as storm-related conditions, that could affect Warren County's residents and visitors.

This updated plan is an opportunity to detail a variety of potential hazards that might affect those who live in and visit Warren County. Updating the plan allows the county and participating jurisdictions to be eligible for future mitigation funding from the Federal Emergency Management Agency (FEMA), explained **Ann Marie Mason, Warren County Director of Emergency Services**.

"Public participation and feedback are a vital part of the hazard mitigation planning process," Mason said. "We ask that those who live in or visit Warren County take the brief online survey to detail any instances where they have experienced disaster or noted vulnerabilities, and their thoughts on changes that should be made."

The survey can be found here: <https://www.surveymonkey.com/r/WarrenNYHMPPublic>.

What is a Hazard Mitigation Plan (HMP)?

A Hazard Mitigation Plan is a document that communities use to identify projects that can reduce damages from future natural hazards. HMPs form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage. The plan is updated every 5 years.

HMPs also create a framework for risk-based decision making to reduce damages to lives, property, and the economy from future disasters. During the planning process, organizations in the Warren County HMP Planning Partnership will actively involve private sector, non-profit, and other community partners in the planning process.

The approach is consistent with a "Whole Community Approach," that seeks to involve the entire community in disaster and hazard planning, said **Jim Lieberum, District Manager of [Warren County Soil and Water Conservation District](#)**, one of the planning partners.

The plan will include a risk assessment and a hazard mitigation strategy. It will focus on existing buildings and potential future development, infrastructure, and critical facilities that might be impacted. Critical facilities are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard, and include essential facilities, transportation systems, lifeline utility systems, high-potential loss facilities, and hazardous material facilities.

The update of the plan allows the county and participating jurisdictions to continue to be eligible for grant-funded projects such as home acquisitions or elevations – to either remove houses located in the floodplain to generate open space and increase flood storage or to raise their first floor above the FEMA base flood elevation – and local flood control measures. Ultimately, these actions reduce vulnerability, and communities are able to recover more quickly from disasters.

If you would like more information on how to get involved in this project, contact Lieberum at 518.623.3119 or [jiml@warrenswcd.org](mailto:jiml@warrenswcd.org).

To stay informed about the project, visit: <https://www.warrencountynewyorkhmp.com>.





## APPENDIX E SUPPLEMENTARY DATA

This appendix contains information and details to support information provided in Section 5 (Risk Assessment).

### E.1 HISTORY OF HAZARD EVENTS WITHIN THE COUNTY

To supplement the information provided in this plan, events prior to the update of this plan are included below by hazard of concern type. Many sources provided historical information regarding previous occurrences and losses associated with hazards throughout New York and Warren County. It is noted that, with a number of sources reviewed for the purpose of this HMP, loss and impact information for many events could vary depending on the sources.

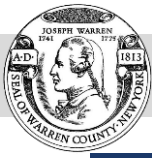
For more information on past events and impacts, refer to the 2017 Warren County Hazard Mitigation Plan.

#### E.1.1 Earthquake

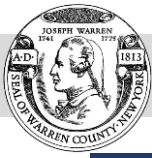
Known earthquakes events that have impacted New York State and Warren County between 1916 and 2023 are identified in Table E.1. Many sources were researched for historical information regarding earthquake events in Warren County; therefore, Table E.1 may not include all earthquake events that have impacted the County.

*Table E.1. Earthquake History in New York State, 1916-2023*

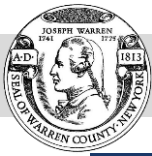
Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
February 3, 1916	Earthquake 4.1	Galway, NY	N/A	N/A	No reference and/or no damage reported.
March 18, 1928	Earthquake 4.1	Paul Smiths, NY	N/A	N/A	No reference and/or no damage reported.
August 12, 1929	Earthquake 4.7	Corfu, NY	N/A	N/A	No reference and/or no damage reported.
April 20, 1931	Earthquake 4.7	Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
April 15, 1934	Earthquake 4.5	Dannemora, NY	N/A	N/A	No reference and/or no damage reported.
January 1, 1966	Earthquake 4.3	Attica, NY	N/A	N/A	No reference and/or no damage reported.
June 13, 1967	Earthquake 4.1	Attica, NY	N/A	N/A	No reference and/or no damage reported.
July 15, 1973	Earthquake 3.4	Long Lake, NY	N/A	N/A	No reference and/or no damage reported.
June 7, 1974	Earthquake 3.3	Wappingers Falls, NY	N/A	N/A	No reference and/or no damage reported.
June 9, 1975	Earthquake 4.2	Altona, NY	N/A	N/A	No reference and/or no damage reported.
November 3, 1975	Earthquake 4.0	Long Lake, NY	N/A	N/A	No reference and/or no damage reported.



Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
September 28, 1977	Earthquake 3.1	Wilmington, NY	N/A	N/A	No reference and/or no damage reported.
April 5, 1978	Earthquake 2.6	Newcomb, NY	N/A	N/A	No reference and/or no damage reported.
August 21, 1978	Earthquake 3.1	Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
December 30, 1979	Earthquake 2.5	North Castle, NY	N/A	N/A	No reference and/or no damage reported.
June 6, 1980	Earthquake 3.5	Port Leyden, NY	N/A	N/A	No reference and/or no damage reported.
August 31, 1982	Earthquake 2.7	Northville, NY	N/A	N/A	No reference and/or no damage reported.
February 26, 1983	Earthquake 3.0	Pawling, NY	N/A	N/A	No reference and/or no damage reported.
October 7, 1983	Earthquake 5.1	Newcomb, NY	N/A	N/A	At Blue Mountain Lake, one old chimney collapsed, about 20 tombstones slid or rotated, and some minor cracks formed in plaster walls. Several landslides were reported. Light damage also occurred at several other towns in the area, but the most common effects were cracked chimneys, broken dishes or glassware and overturned or fallen objects. Although this earthquake caused only minor damage, it was felt over a wide region, including two Provinces in Canada and 12 States.
August 20, 1984	Earthquake 3.2	Chazy, NY	N/A	N/A	No reference and/or no damage reported.
October 19, 1985	Earthquake 3.6	Greenville, NY	N/A	N/A	No reference and/or no damage reported.
September 26, 1987	Earthquake 3.8	Tupper Lake, NY	N/A	N/A	No reference and/or no damage reported.
August 9, 1988	Earthquake 3.5	Massena, NY	N/A	N/A	No reference and/or no damage reported.
June 17, 1991	Earthquake 4.0	Worcester, NY	N/A	N/A	Felt (V) at Carlisle, Charlotteville, Cobleskill, Fly Creek, Fultonham, Herkimer, Howes Cave, Ilion, Morris, New Kingston, New York Mills, Portlandville, Rensselaerville, Seward and Worcester. Felt throughout much of New York from Rochester to Rockland and Westchester Counties. Also felt in northern New Jersey, western Connecticut, western Massachusetts and in parts of New Hampshire, Pennsylvania and Vermont.
March 2, 1995	Earthquake 3.0	Tupper Lake, NY	N/A	N/A	No reference and/or no damage reported.
July 31, 1997	Earthquake 3.2	Lyons Falls, NY	N/A	N/A	No reference and/or no damage reported.
April 20, 2000	Earthquake 3.8	Newcomb, NY	N/A	N/A	Felt at Clifton Park, Crown Point, Greenwich, Ilion, Indian Lake, Lake Bonaparte, Newcomb, Northville, Queensbury, Saranac Lake, Tupper Lake, Vermontville and Wells. Felt at Keene and Swanzey, New Hampshire; Addison, Moretown, Montpelier and Northfield, Vermont. Also felt at Brigham and Sherbrooke, Quebec, Canada.



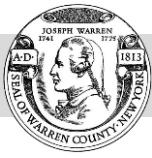
Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
February 3, 2001	Earthquake 3.2	Bath, NY	N/A	N/A	No reference and/or no damage reported.
April 20, 2002	Earthquake 5.1	Au Sable Forks, NY	DR-1415	Yes	Approximately 12 residents throughout the County reported specific damage to WCDCR, including cracked foundations and walls, structural damage, broken doors and windows, and septic system and other utility damage.
July 24, 2007	Earthquake 3.1	East Berne, NY	N/A	N/A	No reference and/or no damage reported.
February 27, 2008	Earthquake 2.7	Howes Cave, NY	N/A	N/A	No reference and/or no damage reported.
February 18, 2009	Earthquake 2.7	East Berne, NY	N/A	N/A	No reference and/or no damage reported.
February 20, 2009	Earthquake 2.7	Berne, NY	N/A	N/A	No reference and/or no damage reported.
February 23, 2009	Earthquake 2.1	Berne, NY	N/A	N/A	No reference and/or no damage reported.
March 22, 2009	Earthquake 2.8	Berne, NY	N/A	N/A	No reference and/or no damage reported.
May 18, 2009	Earthquake 3.0	Berne, NY	N/A	N/A	No reference and/or no damage reported.
October 21, 2009	Earthquake 2.9	East Berne, NY	N/A	N/A	No reference and/or no damage reported.
December 13, 2009	Earthquake 3.1	Berne, NY	N/A	N/A	No reference and/or no damage reported.
June 24, 2010	Earthquake	Ottawa, Canada	N/A	N/A	An earthquake centered north of Ottawa, Canada was felt in the Hudson Valley and elsewhere in New York State and across a wide swath of the northeast United States. There were reports of people having felt the event in Warren County, New York. Chestertown residents reported having felt it. There were no reports of injuries or damages in the County.
August 23, 2011	Earthquake 5.8	Mineral, Virginia	DR-4044 (Washington D.C.) DR-4022 (Virginia)	No	A 5.8 earthquake occurred during the afternoon of August 23 <sup>rd</sup> when a fault near Mineral, VA ruptured. It damaged older buildings, shut down much of Washington D.C. and impacted people from New England to the Carolinas. Many buildings in Virginia and Washington D.C. were damaged as a result of this event.
January 23, 2012	Earthquake 2.3	New York	N/A	N/A	No reference and/or no damage reported.
August 25, 2013	Earthquake 2.7	6 miles S/SE of Warrensburg, NY	N/A	N/A	The USGS confirmed a minor earthquake occurred in the Glens Falls area on the morning of August 25 <sup>th</sup> . The 2.7 earthquake was centered approximately 6 miles south/southeast of Warrensburg. Residents of Glens Falls, Queensbury, Lake George, and Lake



Dates of Event	Event Type	Location	FEMA Declaration Number	County Designated?	Losses / Impacts
					Luzerne area all reported having felt the earthquake.
July 24, 2014	Earthquake 1.6	9 miles NW of Hadley, NY	N/A	N/A	No reference and/or no damage reported.
November 13, 2014	Earthquake 1.6	13 miles NW of Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
February 2, 2015	Earthquake 1.9	19 miles NW of Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
May 25, 2015	Earthquake 1.3	19 miles NW of Warrensburg, NY	N/A	N/A	No reference and/or no damage reported.
July 11, 2017	Earthquake 2.5	7 miles NW of Barker, NY	N/A	N/A	No reference and/or no damage reported.
March 21, 2018	Earthquake 2.7	6 miles NW of Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
May 31, 2019	Earthquake 2.6	4 miles NW of Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
March 11, 2020	Earthquake 3.1	South Glens Falls, NY	N/A	N/A	No reference and/or no damage reported.
March 29, 2020	Earthquake 2.6	7 miles N of Lyndonville, NY	N/A	N/A	No reference and/or no damage reported.
July 14, 2021	Earthquake 2.8	5 miles NW of Massena, NY	N/A	N/A	No reference and/or no damage reported.
March 15, 2022	Earthquake 2.6	3 miles SW of Warsaw, NY	N/A	N/A	No reference and/or no damage reported.
July 27, 2022	Earthquake 2.5	1 mile SW of Saint Regis Falls, NY	N/A	N/A	No reference and/or no damage reported.
February 6, 2023	Earthquake 3.8	0.5 miles NE of West Seneca, NY	N/A	N/A	No reference and/or no damage reported.

Source(s): NYS DHSES 2014; USGS 2023; FEMA 2016

DR Major Disaster Declaration (FEMA)  
 FEMA Federal Emergency Management Agency  
 N/A Not Applicable  
 NY New York  
 USGS U.S. Geological Survey

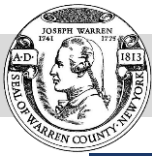


## E.1.2 Extreme Temperature

Information regarding specific details of temperature extremes in Warren County is scarce; therefore, previous occurrences and losses associated with extreme temperature events are limited. Table H.2 summarizes the extreme temperature events in the County from 2000 through 2023.

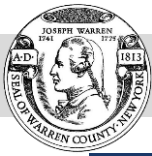
*Table E.2. Extreme Temperature Events between 2000 and 2023*

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
March 8, 2000	Excessive Heat	N/A	N/A	The season's first Bermuda type high pumped unseasonably warm air into eastern New York on March 8 and March 9. Temperatures soared well into the 60s at most locations, and touched 70 in a few spots. Even across the Adirondacks, readings climbed well into the 50s to near 60. At the Albany International Airport, the high on March 8 of 66 degrees, eclipsed the old record of 64 set in 1942. On March 9, the high reached 68 degrees, replacing the old record of 66 established in 1977.
January 28-29, 2009	Winter Storm	N/A	N/A	A winter storm spread a significant wintry mix of precipitation across eastern New York State, with heavy snow and sleet across much of the southern Adirondacks into the Lake George Saratoga region. Snow and sleet amounts ranged from 8 to 12 inches across the southern Adirondacks and the Lake George Saratoga region. This wintry mix resulted in the closure of numerous schools and businesses across east central New York for both Wednesday and Thursday mornings, and also created treacherous travel conditions. Snowfall totals in Warren County ranged from 8 to 9 inches in the city of Glens Falls.
February 18, 2009	Winter Weather	N/A	N/A	Winter storm system swept northeast across eastern New York State early Thursday morning, preceded and accompanied by moderate to locally heavy wet snow. The snow began Wednesday afternoon and tapered off early Thursday morning. The heaviest snowfall amounts occurred across the Lake George Saratoga region, where 6 to 10 inches fell.
February 23, 2010	Heavy Snow	N/A	N/A	<p>A powerful storm impacted the region, the second in just a couple of days bringing heavy rainfall and a heavy wet snow to the local area. The heavy wet snow resulted in additional and continued widespread power outages across east central New York, downed trees and power lines, treacherous travel, road closures, train delays, building collapses and snow emergencies.</p> <p>In Warren County, up to 2 feet of snow fell in the west portion of the county in the higher elevations. Route 9N at Pinewoods Road in the Town of Lake Luzerne was reported closed for a couple of hours late Tuesday evening, February 23rd, due to downed power lines. No property damages were reported. Snowfall totals in Warren County ranged from 10.5 inches in</p>

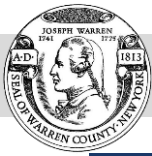


Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				the City of Glens Falls to 21.3 inches at the Town of Lake Luzerne.
February 25, 2010	Winter Storm	N/A	N/A	<p>This storm system produced a widespread swath of heavy wet snow across the greater Capital District and surrounding area, the Lake George Saratoga region, the Mohawk River Valley, Schoharie Valley and southern Adirondacks during the day Friday. Snowfall rates of 1 to 2 inches per hour occurred, beginning during the early morning hours, and persisting until late afternoon.</p> <p>Snowfall amounts reached 12 to 15 inches across northern portions of the Capital Region extending into the east central Mohawk River Valley and Lake George Saratoga region. The heavy snow created treacherous travel conditions for the morning and evening commutes on Friday, with numerous accidents reported, including along portions of the Adirondack Northway, as well as Interstate 90. The heavy wet snow also led to numerous school and business closings across much of eastern New York on Friday.</p> <p>Snowfall totals in Warren County ranged from 4 inches at Warrensburg to 24 inches at Garnet Hill in North River hamlet.</p>
July 21, 2011	Excessive Heat	N/A	N/A	<p>Bermuda high pressure dominated the region with broad southwest flow aloft. This flow ushered in hot and humid air. Temperatures across much of east central New York warmed well into the 90s with some locations reaching the century mark in the mid Hudson Valley. On Friday July 22nd in Dutchess County, Rhinebeck reached 104 degrees, Dutchess County Airport in Poughkeepsie reached 102 degrees and Mills Norre State Park came in with 100 degrees. In Columbia County, 101 degrees was reported in Hudson at the Columbia County Airport. The most oppressive day was Thursday, July 21st, due to very high dew points in the 70s. The high humidity, combined with temperatures in the 90s, resulted in heat indices of 105 to 110 degrees up the Hudson River Valley. The New York Independent System Operator (NYISO) reported that New York State's power consumption on the 21st peaked between 4 pm and 5 pm EDT and was the third highest peak on record. A weak boundary marked by a shift in winds and lower dew points moved southward across east central New York on Friday, July 22nd. Dew points dropped into the 50s in the wake of the boundary. However, the boundary did not reach the mid Hudson Valley until late in the day, and this was too late to bring any relief to the oppressive heat and humidity. The boundary dissipated across the area Friday evening. On Saturday July 23rd, temperatures warmed in the 90s, and with dew points in the upper 60s and lower 70s, resulted in heat indices of 100 to 104 degrees across the</p>

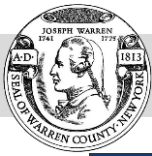




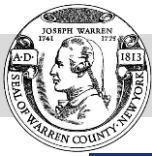
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Capital District, mid Hudson Valley, southern Taconics and southeastern Catskills.
December 10-11, 2013	Winter Weather	N/A	N/A	As very cold air passed over the relatively warm water of Lake Ontario, a heavy, long-lasting band of lake effect snow developed on the evening of the 10 <sup>th</sup> , extending east across the entire western and southern Adirondacks. By the time the band ended late in the evening of December 11th, over one foot of snow was common across the western Adirondacks. Snowfall totals included 4.5 inches at Gore Mountain in Warren County.
December 14-15, 2013	Winter Storm	N/A	N/A	A light snow slowly spread across New York State from southwest to northeast during the day on December 14 <sup>th</sup> , followed by a steadier and heavier snowfall moved across the region during the evening hours and into the overnight. Snow fell at rates in excess of one inch per hour over much of the region and snow rates locally were as high as up to three inches per hour at times. The bulk of the accumulating snow was finished by the late overnight hours, but light snow showers and flurries continued into the mid-morning hours, especially across the Adirondacks and Capital Region. By the end of the storm, many places around the eastern Catskills, Capital Region and Lake George Saratoga Region received around a foot of snowfall. Snowfall totals in Warren County ranged from 9 inches at Brant Lake hamlet to 12.2 inches at the Town of Lake Luzerne.
February 13-14, 2014	Heavy Snow	N/A	N/A	<p>An exceptional winter storm impacted all of eastern New York between Thursday, February 13th and the morning of Friday, February 14th. The snow began falling in the morning hours at rates of up to three inches per hour, causing significant travel issues across the region. After a late afternoon break in the snowfall, heavy precipitation returned in the late evening hours. Once again, the snow fell at significant rates of up to 3 inches per hour. In addition, lightning and thunder accompanied the snow across far southern and eastern areas at times as well. By the time snow ended, between one and two feet of snow fell across much of the Lake George Saratoga Region, with lower amounts of 4 to 10 inches across the Adirondacks. Very strong winds, gusting as high as 40 mph, occurred as the storm pulled away. This led to significant blowing and drifting of the snowfall through the entire day on February 14th.</p> <p>As a result of the storm, Governor Andrew M. Cuomo declared a state of emergency for the Mid-Hudson as well other counties, including Warren, across east central New York. Restrictions were put on travel. Many towns and cities had difficulty with snow removal, as much of the snowfall also remained from a recent early February snowstorm as well. The</p>



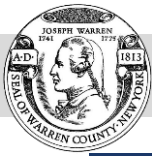
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				weight of snow caused a few roof collapses and power outages across the region. Snowfall totals in Warren County ranged from 6 inches at North Creek hamlet to 12 inches at the Town of Lake Luzerne.
November 26-27, 2014	Nor'Easter / Snowstorm	DR-4204	No	An early season winter storm impacted eastern New York State during Thanksgiving. The storm began the morning of the 26 <sup>th</sup> and once the snow began, it increased in intensity, falling at rates at or greater than one inch per hour. Temperatures dropped to or below freezing across the entire region. There were heavy bands of snow occurring in some locations, especially across the Taconics, Mohawk Valley and southeastern Adirondacks. Snowfall totals ranged from six to 12 inches, with up to 15 inches in the southeastern Adirondacks. The weight of the snow caused power outages in the area, especially across the mid-Hudson Valley. Warren County DPW reported numerous damages, including automobile damages from falling trees and icy conditions, transportation blockages, and phone wires falling on and entangling a truck. Snowfall totals in Warren County ranged from 10 inches at the City of Glens Falls to 14.5 inches at North Creek hamlet.
January 7, 2015	Extreme Cold/Wind Chill	N/A	N/A	Behind an arctic cold front, bitter cold air moved into the region for the night of Wednesday, January 7 <sup>th</sup> . Overnight lows were below zero in most areas, with temperatures as low as -10 to -30 degrees over the Adirondacks and the Lake George and Saratoga Region. With strong northwesterly winds in place, this allowed for winds chill values to be as low as -40 degrees during the late-night hours into the morning hours on Thursday, January 8 <sup>th</sup> . Due to the dangerously cold temperatures, many towns and cities opened shelters and warming stations for residents who needed a place to stay overnight. Many school districts also delayed the start of school due to the extremely cold temperatures and low wind chill values.
February 15, 2015	Extreme Cold/Wind Chill	N/A	N/A	Behind a rapidly developing coastal storm, an extremely frigid Arctic air mass pour into the region from the north, beginning during the late morning hours on Sunday, February 15 <sup>th</sup> . With the developing storm just east of the region, a strong pressure gradient allowed for very strong winds. Northwest winds frequently gusted over 30 MPH, with some gusts as high as 46 MPH through the evening hours. Temperatures fell quickly through the day and dropped below zero for Sunday night into the morning of Monday, February 16 <sup>th</sup> . Some temperatures were as cold as 30 degrees below zero. With winds continuing to be gusty during the overnight and morning hours, wind chill values dropped as low as 15 to 45 degrees below zero.



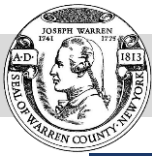
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				With much of the month experiencing cold temperatures, many towns and cities continued to keep warming shelters open.
February 13, 2016	Extreme Cold/Wind Chill	N/A	N/A	<p>Behind an Arctic cold front, very cold temperatures poured into the region upon brisk northwesterly winds. Temperatures dropped through the day on Saturday, February 13th, reaching lows of 8 to 33 degrees below zero across eastern New York on Saturday night. Along with winds gusting 20 to 40 MPH, wind chill values reached 15 to 45 degrees below zero for Saturday night into Sunday morning.</p> <p>The cold temperatures and low wind chills resulted in several water main breaks across the region. About 60 residents of an elderly care facility in Hoosick had to spend the night at a fire station as a result of a burst water pipe. In addition, the Red Cross responded to 17 emergency calls over the weekend, including for house fires in Albany, Schodack and Gilboa. Around \$3000 of aid was given to families affected by these fires.</p>
February 12, 2017	Extreme Cold/Wind Chill	N/A	N/A	<p>Two low pressure systems approached the northeastern US on Sunday, February 12, with snowfall breaking out over the local area around sunrise. The snow was heavy during the morning and early afternoon, with accumulation rates of 1 to locally 2 inches per hour at times. The snow was wet and dense and readily clung to trees.</p> <p>In total, 7 to 12 inches of snowfall occurred through most of the local area, with lesser totals over southern portions of the region where sleet occurred. Car accidents were reported, and snow emergencies were in effect throughout the region, and Route 28 in Herkimer County was closed for a time due to several accidents. On February 13, strong winds developed on the back side of the system. The strongest winds targeted the Catskills and Mid-Hudson Valley, where several trees were downed and over 14,000 power outages were reported. Dutchess County Airport in Poughkeepsie recorded a 59 mph wind gust.</p>
December 22, 2017	Winter Storm	N/A	N/A	A complex storm system brought snow and a wintry mix to the region on Friday, December 22nd through Saturday, December 23rd, 2017. The precipitation started out as snow on Friday, but transitioned to a wintry mix by Friday night. Freezing rain lingered through the day Saturday as a warm front lifted through the region, especially for sheltered mountain valley areas. Snowfall totals ranged from a trace in the Mid-Hudson Valley up to 8.5 inches in the Adirondacks (Hamilton county) along with light icing as well. A few spots in the Mohawk Valley and Saratoga Region saw up to two tenths of an inch of ice.
February 7, 2018	Winter Storm	N/A	N/A	A winter storm brought mixed wintry precipitation to the region. Precipitation began as snow during the morning hours but changed to a mix of sleet, freezing rain and snow during



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				the afternoon hours, mixing as far north as the town of Schenectady. Precipitation transitioned back to snow during the evening hours before exiting the region northwest to southeast. Snowfall and sleet totals ranged from 1 inch to 12 inches, with the higher totals generally north and west of the Greater Capital District.
July 1, 2018	Excessive Heat	N/A	N/A	A hot and humid airmass brought excessively high heat indices to eastern New York from the beginning of July through the Independence Day holiday. Temperatures soared as high as 99 degrees on July 1st, the hottest day of the stretch. Combined with dewpoints in the mid-70s, heat indices reached near 110 degrees in the warmest valleys. July 5th marked the sixth consecutive day reaching a temperature of 90 degrees at Albany and Glens Falls, and a seventh consecutive day at Poughkeepsie. In addition to the hot daytime temperatures, overnight low temperatures only falling into the 70s was common, which exacerbated heat-related problems. The extensive heat prompted the opening of many cooling centers across the region.
November 15, 2018	Winter Storm	N/A	N/A	A strengthening coastal low pressure system moved along the Atlantic shoreline November 15th and 16th, bringing accumulating snow and mixed precipitation to eastern New York. The Mid-Hudson Valley and eastern Catskills were hit hardest with 8 to 14 inches of snow, most of which occurred during the evening hours. The snow spread in during the evening rush hour with one to three inches per hour accumulation, snarling traffic and resulting in numerous accidents. The southern Adirondacks also saw 6 to 12 inches of snowfall, while totals for the remainder of eastern New York generally ranged from 4 to 8 inches. The snow changed to sleet and freezing rain overnight in many areas with minimal ice accretion. It changed back to snow during the morning hours of the 16th before ending.
January 19, 2019	Winter Storm	N/A	N/A	The largest snowstorm to date in the 2018-19 winter occurred on January 19th and 20th across eastern New York. Low pressure formed over the lower Mississippi Valley and lifted northeast across the Tennessee Valley during the night of the 19th before moving along the Mason-Dixon line on the 20th. Strong rising motion occurred as southerly winds aloft transported moist air northward, which was lifted over the cold airmass in place over eastern New York. Snowfall broke out during the afternoon of the 19th, continuing heavy at times into the evening and overnight hours before ending during the morning of the 20th. The strong southerly flow brought above-freezing air aloft into the region, causing the snow to turn to sleet as far north as the Capital District and northern Catskills for a time before turning back to snow. Further south, the air aloft was warm enough to turn the

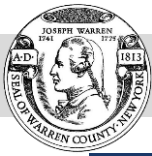


Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				precipitation to freezing rain with ice accretion of one to three tenths of an inch over portions of the southeast Catskills, Mid-Hudson Valley, and southern Taconics.
July 20, 2019	Excessive Heat	N/A	N/A	<p>A heat wave gripped eastern New York from July 19th through the 21st. Temperatures soared into the low to mid-90s with dewpoints in the low to mid-70s. This resulted in heat index values in the 100 to 110 range in the warmest spots of the Hudson Valley. Saturday, July 20th was the hottest day for most areas. Due to the excessive heat, area cities extended hours for pools and cooling centers, and Saturday's races at the Saratoga Race Course were cancelled due to the heat for the first time since August 2006.</p> <p>The hot and humid airmass provided fuel for thunderstorms that formed along the Lake Ontario shoreline during the late afternoon of the 20th. Two clusters of storms moved from the Mohawk Valley through the Capital District and into the Taconics during the evening, resulting in several reports of wind damage. The storms knocked out power to over 1,700 customers in Schenectady and Saratoga Counties.</p>
December 29, 2019	Winter Storm	N/A	N/A	A complex winter storm brought a mix of rain, snow, sleet and freezing rain to the region from the evening of Sunday, December 29th, lingering through the morning of Tuesday, December 31st, 2019. Heavy accumulations of ice impacted portions of the eastern Catskills, Mohawk Valley and the southern Adirondacks during this time frame. There were approximately 10,000 people without power across the state due to a combination of icy conditions and strong winds bringing down trees and power lines.
March 23, 2020	Winter Storm	N/A	N/A	A late season snowfall impacted the region on Monday, March 23rd, 2020. This was brought on by an anomalously cold air mass interacting with a coastal low pressure system. Snowfall totals ranged from an inch in the Mid-Hudson valley up to almost 10 inches in the southern Adirondacks and northern Lake George Saratoga region. The lower amounts were mainly confined to the Lower Hudson Valley due to a rain and snow mix throughout much of the day. Snow intensity increased during the late afternoon and early evening hours impacting the evening commute. As a result, a tractor trailer crashed on Interstate 87 South prompting portions of the interstate to be closed.
February 3, 2022	Winter Storm	N/A	N/A	A prolific winter storm began on Thursday, February 3 and continued into Friday, February 4. Precipitation began as rain for most areas on February 3 with the exception of the Adirondacks which began as a mix of rain and snow. Colder air gradually pushed southward into the overnight and early morning hours of February 4 resulting in a changeover to a wintry mix of sleet, freezing rain and snow. Most locations picked up 1 to 2 inches of liquid equivalent precipitation from



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				this event with the majority of it falling as one or multiple types of frozen precipitation. Precipitation ended during the afternoon hours on February 4. Utility companies noted that more than 50,000 customers lost power from the storm across the Hudson Valley, most of them in eastern Ulster County. At least 44 utility poles broke and more than 900 power lines came down as a result of the snow and ice with more than 500 individual damage locations.
November 18, 2022	Severe Winter Storm	EM-3589	N/A	Following the passage of a strong cold front, bands of lake effect snow developed off Lake Ontario impacting portions of the Adirondacks and Mohawk Valley and also extending into the Hudson Valley. This resulted in multiple car accidents across the Hudson Valley with one occurring Sunday morning and the others Sunday evening. Additionally, the band of lake effect snow over Herkimer County resulted in several inches of accumulation over parts of the county. In addition to the snows, it was also blustery with winds gusting between 25-45 mph over the area.
December 23, 2022	Severe Winter Storm	EM-3590	N/A	Two separate frontal systems merged to form a powerful winter storm over the Great Lakes from December 22 to December 24 bringing multiple hazards to the region including heavy rain, snow, strong winds and a very cold air mass in its wake. Widespread rainfall amounts of 1 to 3 inches were observed with some localized amounts of 4 inches. The combination of the rain and snowmelt in some places resulted in some flooding and some creeks to overflow their banks. Strong pre-frontal and post-frontal winds occurred with this event with widespread wind gusts of 40 to 55 mph. Such winds resulted in some downed trees and power lines as well as minor damage to some structures. A few power outages occurred as a result. Snow showers in the wake of the cold front brought mainly light accumulations. However, a pocket of more moderate snow occurred across the northern and central Taconics with snowfall amounts in the 4-to-8-inch range. Much colder air built into the region in the wake of the front which, combined with the strong winds, led to wind chill values as low as 15 to 25 degrees below zero in some areas.
January 22, 2023	Winter Storm	N/A	N/A	With eastern New York in the cold sector of a coastal low pressure system, a swath of moderate to heavy snow fell across a good portion of the area Sunday evening/night into Monday before ending Monday afternoon. The winter storm proved impactful resulting in car crashes and power outages. Some schools and businesses also closed as a result of the storm.
March 13, 2023	Winter Storm	N/A	N/A	A powerful Nor'Easter resulted in widespread moderate to heavy wet snow and gusty winds across eastern New York March 13-March 15, 2023. Anywhere from 15 to 30 inches of snow with locally higher amounts in excess of 30 inches fell





Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				over the SW Adirondacks and eastern Catskills. Valley locations received lesser amounts with totals generally ranging between 7 to 15 inches. A few locations across the western Mohawk Valley and mid-Hudson Valley received less than 6 inches of snow. Numerous downed trees and powerlines resulted in widespread power outages. According to the National Grid, approximately 141,000 customers lost power within the state of New York with most occurring within our county warning area. Some locations were without power for at least 1 or 2 days.

Sources: NYS DHSES 2014; USGS 2023; FEMA 2016

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

NWS National Weather Service

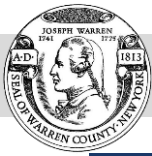
NYS New York State

### E.1.3 Flood

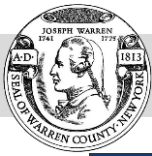
Known flooding events that occurred from 1996 to 2022 are identified in Table E.3. With flooding documentation for New York State and Warren County being so extensive, not all sources have been identified or researched. Therefore, Table E.3 may not include all events that have occurred in the County.

*Table E.3. Flooding Events in Warren County Between 1996 and 2022*

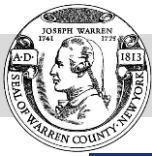
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
January 19, 1996	Flooding	N/A	N/A	In Lake George Village widespread flooding occurred and seven families had to be evacuated. Many roads were closed throughout the county due to flooding including 16 county roads. Significant damage was also incurred to many state roads. Routes 9 and 9N were closed from Lake George north. Route 418 was closed at the Hudson River Bridge and along route 8 a 150 foot section was washed out between Brant Lake and Hague.
January 8, 1998	Flooding	N/A	N/A	From January 8 to January 12, the Hudson River flooded from its headwaters to where it crosses into Greene and Columbia Counties, due to a combination of significant rain and snowmelt. In Hamilton and Warren Counties, the river rose to heights that came close to the flood of record. Flood damage in this area was kept to a minimum due to its flow through undeveloped areas and vacation property which was secured for the winter.
April 1, 1998	Flooding	N/A	N/A	Due to rapid snowmelt at the end of March and beginning of April, rather severe flooding continued along the Schroon River in Warren County. The flood waters affected river front homes, State Highway 418 between Warrensburg and Thurman Station and forced the closure of a bridge at Starbuckville. The river at Riverbank crested at 9.3 feet during the afternoon of April 2.
February 28, 2000	Flooding	N/A	N/A	A warmup at the end of February, began melting the winter snowpack fairly quickly and helped break up an extensive ice pack on the upper Hudson and Mohawk Rivers. As a result, ice jams developed on the Mohawk and Hudson rivers. During the night of February 27 and 28, rainfall accumulated between one half and one inch and a half across eastern New York. The rains



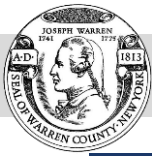
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				exacerbated the runoff, which resulted in the flooding of the Mohawk and Hudson rivers, as well as some smaller streams. Most of the flooding was minor. There were no casualties directly related to this flooding, reported to the National Weather Service.
April 16, 2001	Flooding	N/A	N/A	he runoff from rapid snowmelt, caused the Schroon River in Warren County to rise out of its banks around midday, on April 16th. The gage at Riverbank reached the flood stage of 7.0 feet at that time. The river continued to swell, and did not crest until the gauge reached 10.1 feet, early on April 24. This was the highest level recorded in 50 years. Portions of Route 413 became inundated, as did many homes in the towns of Chester, Pottersville, Horicon and Warrensburg. A number of residents had to be evacuated and a few bridges were closed.
March 30, 2003	Flooding	N/A	N/A	An area of low pressure, moving along a slow moving cold front on March 29 and 30, produce 1 to 2 inches of rainfall across eastern New York. The rain, combined with seasonably mild temperatures, melted most of the remaining snow pack across much of eastern New York. The combination of the rain and mild temperatures, produced another significant runoff which caused some additional minor flooding.
April 2, 2004	Flooding	N/A	N/A	As much as three inches of rain fell between March 31 through April 2 across eastern New York. This rain combined with the last of the snow melt to produce an excessive runoff of water. As a result, the Schroon River in Warren County briefly reached above flood stage on the evening of April 2. No problems were reported to the National Weather Service as a result of this flooding.
May 1, 2006	Flooding	N/A	N/A	On May 1, at Riverbank, the Schroon River had some lingering flooding from heavy rainfall during the last week in April. The water level dropped below the 7-foot Riverbank flood stage at 18:45 EST.
April 20, 2007	Flooding	N/A	N/A	Warm temperatures from April 19th to April 24th led to rapid melting of a deep snowpack across much of the Adirondacks. Antecedent water equivalent in the snow pack ranged from 6 to 16 inches. This rapid melting led to flooding of many rivers that drain the Adirondacks. In addition, releases from Sacandaga Lake perpetuated the flooding on some rivers through the end of the month.
March 5, 2008	Flooding	N/A	N/A	A low-pressure system tracked northeast from the lower Ohio Valley on Tuesday March 4th, into south central New York State by Wednesday morning on March 5th. Abundant moisture was associated with this system, which led to widespread heavy rainfall across much of east central New York and western New England, which began late Tuesday night, and persisted into early Wednesday afternoon. Rainfall amounts of 1 to 3 inches fell during this event. This heavy rainfall, in combination with frozen ground and snowmelt led to flooding in many areas within the Capital Region, as well as within the Lake George and Saratoga region, the Schoharie Valley, the eastern Catskills and mid Hudson Valley.
April 9, 2008	Flooding	N/A	N/A	he melting of a deep snowpack led to moderate or higher river flooding across portions of the upper Hudson River basin, including the Schroon River, Lake Champlain, and the Great Sacandaga Lake. Snow water equivalents of nearly one foot began to melt during a warm period beginning around April 10th,



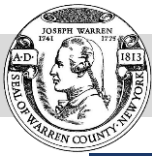
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				and led to river flooding which persisted through the end of April. Along the Schroon River, at least one permanent home, along with a few summer camps were flooded. On the Hudson River near Schuylerville, a sod farm suffered estimated losses of \$225,000 due to prolonged submersion of sod in Hudson River flood waters. In addition, the New York State Canal Corporation was unable to open the Hudson-Champlain Canal in April due to high water levels.
March 13-31, 2010	Severe Storms and Flooding	DR-1899	Yes	Moderate to heavy rain fell across east-central New York State. The ground was already nearly saturated from recent snow melt, causing rivers and streams to run high. Flooding from this event caused damage to numerous roads in the northern section of Warren County. In the Town of Johnsburg, a bridge was reported washed out on Harrington Road due to a possible beaver dam break along Johnson Brook. Overall, the County had approximately \$25,000 in property damage from this event.
October 1, 2010	Flooding (Remnants of Tropical Storm Nicole)	N/A	N/A	The remnants of Tropical Storm Nicole brought very heavy rains to east-central New York State. Rainfall totals from this storm ranged from three to nine inches, resulting in widespread river and small stream and urban flooding, including water in basements. In Warren County, there was standing water reported in the City of Glens Falls at the intersection of Sherman Avenue and Elm Street due to the heavy rains.
March 8-12, 2011	Ice Jam	N/A	N/A	An ice jam began to form on March 7 <sup>th</sup> near the Route 28N bridge in the hamlet of North Creek (Town of Johnsburg). The water that backed up from the ice jam began flooding Old River Road on March 10 <sup>th</sup> , prompting the evacuation of some residents and forced the closing of the road. The water began to recede on March 13 <sup>th</sup> when the ice jam release and moved downstream. As the ice jam moved down the river, it ripped trees from the river bank and then became lodged along the Route 418 bridge in the Town of Thurman on the evening of March 13 <sup>th</sup> . Overall, damage was reported at the County fish hatchery in the Town of Warrensburg and damage to a recreational property from North Creek downstream to Lake Luzerne.
April 28-30, 2011	Severe Storms, Flooding, Tornadoes, and Straight-Line Winds	DR-1993	Yes	Heavy showers and thunderstorms impacted the western and central Mohawk Valley, Adirondack region, and the Upper Hudson River Valley, including the Lake George Region (Warren County). Thunderstorms produced severe weather and very heavy rainfall. The combination of the rainfall and rapid snowmelt due to warm temperatures led to increased runoff and rapid river rises.  In Warren County, flooding from this event covered nearly two-thirds of the County. Flooding occurred along the Hudson River in the County from North River southward to the Saratoga County line. Numerous municipalities reported flooding of roadways, houses, and riverside camps. Some properties had several feet of water in them. Many major roadways were closed



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>in the County due to flooding. The North Creek Trailer Park on Route 28 in the Town of Johnsburg was evacuated because water from the Hudson River entered the park. A mudslide in excess of 200 feet occurred on 13<sup>th</sup> Lake Road in North River/North Creek.</p> <p>In the hamlet of North Creek (Town of Johnsburg), a couple hundred feet of railway tracks were reported under two to five feet of water with several buildings at the train station being flooded as well. In the Town of Stony Creek, the 1,000 Acres Golf Course was flooded with the 9<sup>th</sup> green under eight feet of water.</p> <p>Flood water receded through April 30<sup>th</sup>. The County had approximately \$676,000 in property damage from this event.</p>
May 27 – June 2, 2011	Flooding	N/A	N/A	<p>Flooding caused severe damage along a thin line through the County and impacted the Towns of Stony Creek, Thurman, Warrensburg, Horicon, and Bolton. The County had \$13.125 million in damages from this event.</p>
August 28-30, 2011	Hurricane Irene	DR-4020	Yes	<p>The greatest impact of Irene in eastern New York State was heavy to extreme rainfall which resulted in catastrophic flooding across portions of the region. Rainfall amounts averaged between four and eight inches with amounts of up to 12 inches falling in the eastern Catskills and Schoharie Valley. Three to six inches were common across the Lake George and Saratoga regions. The rainfall resulted in widespread flash flooding and river flooding across eastern New York State. Bridges were closed on major roadways in this area of the State.</p> <p>In Warren County, there was severe wind and flood damage throughout. In the Town of Lake George, Route 9N was flooded from the Route 9/9N split south to the ramp for Exit 21 for the Northway. Route 9L was also flooded between Route 9N and Bay Road. Two of the seven docks in the Village of Lake George floated off and were crushed.</p>
October 27 – November 8, 2012	Hurricane Sandy	EM-3351	Yes	<p>Hurricane Sandy moved up the east coast of the United States during the last week of October 2012. As the storm made landfall in southern New Jersey, bands of rain moved across eastern New York State. Rainfall totals in this part of the State were minimal and did not cause any flooding. The storm did bring strong and gusty winds to the area, bringing down trees and power lines across the region. Wind gusts ranged from 40 to 60 mph.</p> <p>In Warren County, wind gusts of 65 mph pushed down the length of Lake George, creating waves that threatened to spill over the shoreline. Some of the docks along the Lake were damaged but flooding did not occur. In Glens Falls, trees and wires were knocked down from the winds.</p>
February 1, 2013	Ice Jam	N/A	N/A	<p>Massive ice chunks of up to 10 feet thick in spots, broke off near North Creek in Warren County. This created an ice jam on the upper Hudson River near the Town of Thurman. As the ice</p>



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				chunks became lodged, they caused the water behind them to jump the banks, with more than 100 yards of River Road in Thurman over 10 feet of ice chunks. The water receded by midday and the town highway department had to use loaders and backhoes to remove the ice from the roadway.
June 28, 2013	Severe Storms and Flooding	DR-4129	Yes	<p>Heavy rain fell across the Mohawk Valley and western Adirondacks with rates of one inch per hour with three to five inches of rain falling in total. This event, with the combination of a previous rainfall event, led to significant flash flooding across both the Mohawk Valley and Adirondacks. Many roads were washed out and closed. Urbanized areas along the Mohawk River experienced flooding as well. Many communities declared state of emergencies and President Obama signed a major disaster declaration for New York State which included Herkimer, Montgomery and Warren Counties.</p> <p>In Warren County, the Town of Johnsburg experienced severe flooding from this event. Flash flooding occurred in the Bakers Mill section of the Town. Water rescue teams were deployed to several homes that were threatened by flooding. A state of emergency was declared for the Town as a result of flooding.</p>
January 12, 2014	Ice Jam	N/A	N/A	Harrington Road in the Town of Thurman had ice up to scraper banks in some locations and Glen Creek Road was closed due to flooding caused by an ice jam on the Hudson River.
April 13-21, 2014	Flooding	N/A	N/A	<p>Significant snow pack began to melt as a result of an extended period of warm weather. Up to 10 inches of liquid equivalent started melting between April 8<sup>th</sup> and April 15<sup>th</sup>. The snow melt caused many rivers and streams in and around the Adirondacks to become very high with a few reaching flood stages just from the snow melt.</p> <p>Heavy rain began to fall in the region on April 15<sup>th</sup>, bringing up to two inches of rain in the area. The rainfall, combined with the snow melt, caused many rivers to reach moderate flood stage. By April 21<sup>st</sup>, all rivers in the area were below flood stages.</p> <p>In Warren County, the Schroon River reached major flood stage and remained at this stage for several days. The flooding caused several private roads of homes and vacation properties to be impacted by water. Roads were closed due to flooding in the County.</p>
May 13-22, 2014	Flooding	N/A	N/A	A culvert was washed out in the County.
January 13, 2018	Flooding	N/A	N/A	After a frigid end of December and beginning of January, an unseasonably warm airmass was pumped into New York on January 12th on southerly winds. The temperatures reached the 50s and 60s during the day. Showers also developed in the warm



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				<p>airmass ahead of a cold front and were heavy at times, with some locations receiving one to three inches of rainfall. The combination of warm temperatures and heavy rainfall caused river ice to dislodge and resulted in ice jams in spots. Flooding occurred due to a combination of ice jam movement and heavy rainfall. Several roads were closed or damaged and a water rescue had to be performed near the Hoosic River in Rensselaer County. After the strong cold front passed, many ice jams and their associated flooding froze back in place, resulting in road closures continuing for several days in some areas.</p>
February 22, 2018	Flood	N/A	N/A	<p>A large ice jam remained in place on the Mohawk River for much of the month of February and was one of the biggest ice jam seen in decades, according to Union College professor John Garver. The ice jam stretched up to 17 miles from Rexford to Crane Hollow throughout the month in February. The ice jam mainly remained in place into late February and received a large amount of media and government attention. Albany County was concerned about impacts downstream if the jam were to give way quickly. Temperatures skyrocketing into the 60s and 70s on February 20-21 coupled with around 0.50-1.00 rainfall on the 19th over the Mohawk basin allowed river levels to rise and flooding occurred by the 21st within the Stockade neighborhood of Schenectady and across the river in Scotia, as well as backwater flooding of the Alplaus Kill. A substantial portion of the ice jam gave way during the early morning hours of the 22nd, leading to concern for flooding in the downstream communities, but it turned out that impacts were minimal. There were some road closures in the Rotterdam Junction and Schenectady area due to the ice jam movement and breakage. The remainder of the jam gradually broke up over the next week or so with little impact.</p>
April 20, 2019	Flood	N/A	N/A	<p>Heavy rain, combined with snow melt from the Adirondacks, caused the Schroon River at Riverbank to rise above flood stage for several days. River levels reached moderate flood stage on Saturday, April 20th and remained there through Thursday, April 25th. The high water levels resulted in water making its way into numerous homes and onto several roads across northern Warren county. No homes were evacuated.</p>
November 1, 2019	Flood	N/A	N/A	<p>The Hudson River at Hadley reached moderate flood stage at 1000EST 1 November, rising to a crest of 17.96 feet at 1545EST. It fell below moderate flood stage buy 0118EST 2 November. The floodwaters reached some riverside streets in the Lake Luzerne area, including Stephen Lane where residents were evacuated. A residence on East River Drive sustained damage to basement walls as a result of the flooding.</p>
February 18, 2022	Flood	N/A	N/A	<p>A storm system pushed across the region during February 17-18, 2022. Warm air pushed northward into the region along with periods of rainfall before a cold front brought the return of windy</p>





Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				and colder weather. A convective line of gusty showers also accompanied the cold frontal passage. Some locations picked up over 1 inch of rainfall which led to minor flooding in a few locations.
April 8, 2022	Flood	N/A	N/A	A slow-moving frontal system produced widespread heavy rainfall and flooding across eastern New York from April 7-8, 2022. Rainfall amounts between 1.50 and 3.00 inches were common, though a few localized areas received upwards of 4.50 inches. Periods of light to moderate rainfall began during the daytime hours on April 7 with the steadiest and heaviest rainfall arriving during the evening hours on April 7 into the overnight hours on April 8 before ending. This heavy rainfall led to over a dozen rivers to exceed minor flood stage with a few rivers reaching moderate flood stage. For some, it took days after the event for waters to recede. In addition to the heavy rainfall and widespread flooding, strong winds developed across portions of the Taconics with peak gusts in the 35-50 mph range. The combination of rain and wind led to only sporadic power outages.

Source: NYSDEC 2015; FEMA 2015; NOAA-NCDC 2015; NWS 2015

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

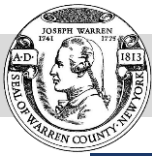
DR	Federal Disaster Declaration
EM	Federal Emergency Declaration
FEMA	Federal Emergency Management Agency
IA	Individual Assistance
K	Thousand (\$)
M	Million (\$)
N/A	Not applicable
NCDC	National Climate Data Center
NOAA	National Oceanic Atmospheric Administration
NWS	National Weather Service
NYS DHSES	New York State Division of Homeland Security & Emergency Services
PA	Public Assistance
SHELDUS	Spatial Hazard Events and Losses Database for the U.S.
USACE	U.S. Army Corps of Engineer

### E.1.4 Severe Storm

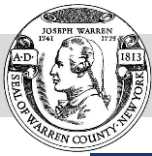
Known severe storm events that occurred from 1978 to 2013 are identified in Table H.4. As severe storm documentation for New York State and Warren County is extensive, not all sources have been identified or researched. Therefore, Table H.7 may not include all events that have occurred in the County.

*Table E.4. Severe Storm Events between 1978 and 2013*

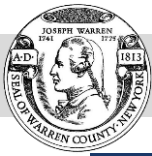
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
May 9, 1978	Tornado	N/A	N/A	F1 tornado traveled a distance of approximately 1.2 miles in an area between Lake Luzerne and Glens Falls



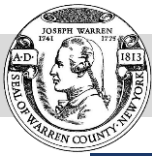
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
April 18, 1985	Tornado	N/A	N/A	F0 tornado was spotted between Route 149 and French Mountain Road. The total path of the storm was about 2 to 2.5 miles. Due to sparse population and hilly terrain, damage was limited. Some debris was found a mile or two from its original site.
July 19, 1989	Thunderstorm Wind	N/A	N/A	An early morning wave of thunderstorms produced hail and strong gusty winds. Wind damage caused downed trees, tree limbs, and power lines. Two persons were injured when a tree fell onto a vehicle during high thunderstorm winds.
July 6, 1999	Thunderstorm Wind	N/A	N/A	A cold front moved from the Great Lakes eastward across New York State on July 6. With sultry air in place, and favorable strong winds aloft, this front triggered the largest outbreak of severe weather in eastern New York since May 31st, 1998. A squall line developed around midday ahead of the front and produced the most damage. However, more thunderstorm cells continued developing and some of these became severe into the evening hours. Nearly every county in eastern New York experienced some wind damage. Rensselaer, Warren, Washington, Herkimer, Saratoga and Schenectady Counties were especially hard -hit. Powerful thunderstorms brought down trees and power lines in many localities. Unfortunately, a falling tree killed a camper located on Uncas Island on Lake George. Two other individuals were injured as they lost control of their car avoiding a falling tree at Diamond Point near Lake George.
August 9, 2001	Thunderstorm Wind	N/A	N/A	A lake breeze front off Lake Ontario, interacted with a hot and humid air mass, to trigger a thunderstorm cluster in western New York during the late afternoon of August 9. As the thunderstorm complex reached the Mohawk Valley, it evolved into a supercell. The supercell then developed into a mesoscale convective system (MCS) as it move into the Lake George / Saratoga region and into the northern Taconics. Wind damage then spread into Warren County, as power lines were blown down in both the villages of Lake Luzerne and Lake George.
June 6, 2005	Thunderstorm Wind	N/A	N/A	Trees and power lines down county-wide. A tree crashed through house in Queensbury. Part of Bay Road and Route 149 closed by downed trees or limbs. Additional trees fell on homes in Fort Edward, Granville, Queensbury and Argyle.
September 27, 2007	Thunderstorm Wind	N/A	N/A	A nearly stationary frontal boundary across central New York State gradually moved east during Thursday afternoon on September 27th. With a very warm, moist and unstable air mass in place to the east of this boundary, scattered strong to isolated severe thunderstorms developed across portions of eastern New York State Thursday afternoon and evening.
March 13 – 31, 2010	Severe Storms and Flooding	DR-1899	Yes	A low pressure system tracked northeast over northeastern United States on March 23rd, bringing a moderate to heavy rainfall to east central New York. The ground was already



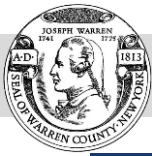
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				nearly saturated from recent snow melt, causing rivers and streams to run high. In Warren County, a bridge was reported washed out on Harrington Road in the Town of Johnsbury due to a possible beaver dam break along Johnson Brook. The County reported a total of \$25,000 in property damage.
October 1, 2010	Flooding (Remnants of Tropical Storm Nicole)	N/A	N/A	The remnants of Tropical Storm Nicole brought very heavy rains to east-central New York State. Rainfall totals from this storm ranged from three to nine inches, resulting in widespread river and small stream and urban flooding, including water in basements. In Warren County, there was standing water reported in the City of Glens Falls at the intersection of Sherman Avenue and Elm Street due to the heavy rains.
April 28-30, 2011	Severe Storms, Flooding, Tornadoes, and Straight-Line Winds	DR-1993	Yes	<p>Heavy showers and thunderstorms impacted the western and central Mohawk Valley, Adirondack region, and the Upper Hudson River Valley, including the Lake George Region (Warren County). Thunderstorms produced severe weather and very heavy rainfall. The combination of the rainfall and rapid snowmelt due to warm temperatures led to increased runoff and rapid river rises.</p> <p>In Warren County, flooding from this event covered nearly two-thirds of the County. Flooding occurred along the Hudson River in the County from North River southward to the Saratoga County line. Numerous municipalities reported flooding of roadways, houses, and riverside camps. Some properties had several feet of water in them. Many major roadways were closed in the County due to flooding. The North Creek Trailer Park on Route 28 in the Town of Johnsbury was evacuated because water from the Hudson River entered the park. A mudslide in excess of 200 feet occurred on 13<sup>th</sup> Lake Road in North River/North Creek. In the hamlet of North Creek (Town of Johnsbury), a couple hundred feet of railway tracks were reported under two to five feet of water with several buildings at the train station being flooded as well. In the Town of Stony Creek, the 1,000 Acres Golf Course was flooded with the 9<sup>th</sup> green under eight feet of water. Flood water receded through April 30<sup>th</sup>. The County had approximately \$676,000 in property damage from this event.</p>
May 27 – June 2, 2011	Flooding, Thunderstorm Wind, Hail (Memorial Day Storm)	N/A	N/A	A combination of individual storms caused severe damage along a thin line through the County and impacted the Towns of Stony Creek, Thurman, Warrensburg, Horicon, and Bolton. A swath of heavy rainfall which fell in just a few hours causing flash flooding, resulting in road closures with significant damage to many roadways, washed-out culverts and a least a couple of washed-out bridges. In addition, a few of the storms



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				<p>were severe producing large hail up to the size of a golf ball and some trees were downed by strong thunderstorm winds. It was reported that seven area fire departments, three EMS crews, the Warren County Sheriff's Office, State Police, along with state, county and local highway departments all responded to the flooding.</p> <p>Numerous trees were reported down on wires in Chestertown, as well as in Thurman, and Warrensburg. Nickel size hail was reported in Chestertown and Stony Creek, quarter size hail was reported in Hague, ping-pong ball size hail was reported in Thurman, and golf ball size hail was reported in Warrensburg.</p> <p>The County had \$13.125 million in damages from this event.</p>
August 28-30, 2011	Hurricane Irene	DR-4020	Yes	<p>The greatest impact of Irene in eastern New York State was heavy to extreme rainfall which resulted in catastrophic flooding across portions of the region. Rainfall amounts averaged between four and eight inches with amounts of up to 12 inches falling in the eastern Catskills and Schoharie Valley. Three to six inches were common across the Lake George and Saratoga regions. The rainfall resulted in widespread flash flooding and river flooding across eastern New York State. Bridges were closed on major roadways in this area of the State.</p> <p>In Warren County, wind and flood damage occurred throughout the county. The most severe was limited to the Lake Champlain Watershed area, located on the eastern side of the County, and in the Lake George and West Mountain areas. In the Town of Lake George, Route 9N was flooded from the Route 9/9N split south to the ramp for Exit 21 for the Northway. Route 9L was also flooded between Route 9N and Bay Road. Two of the seven docks in the Village of Lake George floated off and were crushed.</p>
October 27 – November 8, 2012	Hurricane Sandy	EM-3351	Yes	<p>Hurricane Sandy moved up the east coast of the United States during the last week of October 2012. As the storm made landfall in southern New Jersey, bands of rain moved across eastern New York State. Rainfall totals in this part of the State were minimal and did not cause any flooding. The storm did bring strong and gusty winds to the area, bringing down trees and power lines across the region. Wind gusts ranged from 40 to 60 mph.</p> <p>In Warren County, wind gusts of 65 mph pushed down the length of Lake George, creating waves that threatened to spill over the shoreline. Some of the docks along the Lake were damaged but flooding did not occur. Numerous private boats were sunk or damaged. In Glens Falls, trees and wires were knocked down from the winds.</p>



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
June 28, 2013	Severe Storms and Flooding	DR-4129	Yes	<p>Heavy rain fell across the Mohawk Valley and western Adirondacks with rates of one inch per hour with three to five inches of rain falling in total. This event, with the combination of a previous rainfall event, led to significant flash flooding across both the Mohawk Valley and Adirondacks. Many roads were washed out and closed. Urbanized areas along the Mohawk River experienced flooding as well. Many communities declared state of emergencies and President Obama signed a major disaster declaration for New York State which included Herkimer, Montgomery and Warren Counties.</p> <p>In Warren County, the Town of Johnsbury experienced severe flooding from this event. Flash flooding occurred in the Bakers Mill section of the Town. Water rescue teams were deployed to several homes that were threatened by flooding. A state of emergency was declared for the Town as a result of flooding.</p>
July 8, 2014	Tornado	N/A	N/A	<p>A very warm and humid air mass was in place over the region on Tuesday, July 8th. The region was ahead of a strong cold front that was moving eastward from the Great Lakes Region. Aided by a strong jet streak aloft and a potent upper-level shortwave trough, the cold front triggered a line of thunderstorms that produced damaging winds across western and central New York. It continued to produce strong winds, which caused damage across the Adirondacks and Mohawk Valley and eventually into the Saratoga area, Capital Region and Hudson Valley as well. In addition, a weak, brief tornado also occurred in the southeastern Adirondacks in North Creek. The line of thunderstorms moved eastward and weakened as they reached the border with New England by the late evening hours.</p>
May 29, 2020	Tornado	N/A	N/A	<p>A couple of rounds of strong to severe thunderstorms impacted eastern New York during the afternoon and evening of the 29th. The first was a couple of isolated cells that produced sporadic wind damage from portions of the Capital District into the Glens Falls area. The second was a broken line of storms that produced a more widespread swath of wind damage in the greater Saratoga-Glens Falls area. An EF1 tornado formed within this line, impacting the area from Lake Luzerne to Glens Falls. Low-hanging wires resulted in the closure of Interstate 87 between exits 17 and 19. More than 8,000 customers lost power in Warren and northern Saratoga Counties due to the storms.</p>
August 29, 2020	Tornado	N/A	N/A	<p>Thunderstorms developed over portions of eastern New York during the afternoon of the 29th. A couple of these storms produced hail up to ping pong ball size. They later spawned two EF1 tornadoes in the towns of Stillwater and Schaghticoke, with damage to a couple of residences and a</p>



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				high school. An EFO tornado briefly touched down in southwestern Warren County. Sporadic wind damage was noted elsewhere.

Sources: FEMA 2015; NYSDEC; Robinson 1999

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

DR Federal Disaster Declaration  
 EM Federal Emergency Declaration  
 FEMA Federal Emergency Management Agency  
 NCDC National Climate Data Center  
 NOAA National Oceanic Atmospheric Administration  
 NYS New York State  
 NWS National Weather Service  
 PA Public Assistance  
 SHELDUS Spatial Hazard Events and Losses Database for the U.S.  
 TSTM Thunderstorms

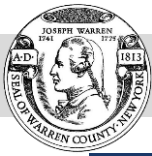
### E.1.5 Severe Winter Storm

Known severe winter storm events that occurred in Warren County between 1996 and 2023 are identified in Table E.5. With severe winter storm documentation for New York State and Warren County being so extensive, not all sources have been identified or researched. Therefore, Table E.5 may not include all events that have occurred in the County.

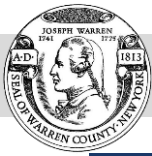
Table E.5. Winter Storm Events Between 1996 and 2023

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
November 26, 1996	Winter Storm	N/A	N/A	On November 26, a low pressure system brought a combination of snow and freezing rain to parts of eastern New York. Over Warren and Washington Counties, snow and heavy freezing rain downed trees and power lines and caused numerous accidents. In Washington County, approximately 3,000 customers lost power.
January 24, 1997	Winter Storm	N/A	N/A	On January 24 and 25, low pressure moved from northern Indiana northeast to the Saint Lawrence Valley. The winter storm produced heavy snow over the southern Adirondacks, which occasionally mixed with sleet and freezing rain. Snowfall totals in Warren, Hamilton and northern Herkimer Counties ranged from 5 to 7 inches. Toward the end of the storm, the precipitation changed to a mix of freezing rain and sleet which caused icing on top of the snow pack.
March 14, 1997	Winter Storm	N/A	N/A	On March 14, a complex area of low pressure tracked from northern Ohio northeast to southern Ontario Canada. This system produced several hours of heavy snow across the southern Adirondacks, Catskills,

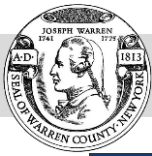




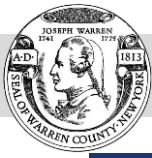
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				northern Saratoga County, Washington County and parts of the Mohawk Valley. The snow changed to sleet and eventually to freezing rain which caused significant icing. Snowfall totals generally ranged from 2 to 5 inches with up to 8 inches in Hamilton County. The icing resulted in treacherous driving conditions along with downed trees and power lines. Scattered power outages occurred across this region.
January 2, 1999	Winter Storm	N/A	N/A	<p>A deep area of low pressure moved from the Mississippi Valley into the central Great Lakes Region during the night of January 2 and January 3. With arctic air in place over New York State, a wintry mix of heavy sleet and freezing rain resulted. This mix of precipitation resulted in significant accumulations of ice across the region. Total melted precipitation exceeded an inch across the Mid-Hudson Valley.</p> <p>The storm resulted in hundreds of vehicular accidents or vehicles sliding off roadways. Two highways in Greene County (Route 23 and route 23A) were temporarily closed due to very slick conditions. Ice buildup downed power lines which caused 2,500 residents to be without power in the Mid-Hudson Valley and an additional 1200 customers without power in the Saratoga region.</p>
January 14, 1999	Winter Storm	N/A	N/A	<p>Extremely cold arctic air moved into Eastern New York on January 13 and January 14. At the same time an area of low pressure formed in Kentucky. This low tracked east into northern Virginia then turned north and moved through the Hudson Valley late on January 14 through January 15. The storm dumped heavy snow on the region followed by an extended period of sleet and freezing rain. The onset of the snow was accompanied by dangerously cold conditions with temperatures as low as 9 below zero. Snowfall amounts included 11 inches at both the Albany International Airport and Little Falls in Herkimer County. 15 inches of snow fell at Gloversville in Fulton County. In addition to the usual traffic disruptions, the weight of the snow and ice caused a roof to cave in at a bowling alley in Rotterdam in Schenectady county. A roof also collapsed at a farm in Mayfield Fulton county which killed a cow and injured several others. The Adirondack Northway was closed between Exits 17 and 23 from 10AM through 7PM on Friday the 15th due to very icy conditions.</p>
January 31, 2000	Winter Storm	N/A	N/A	<p>Low pressure formed in the Gulf States on January 29. There was a disparity of snowfall with this system. To the south, sleet and freezing rain mixed in, which held accumulations to the 4 to 7 inch range across the Mid Hudson Valley and southern Catskills. Six to 10 inch</p>



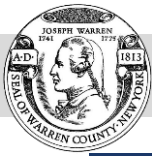
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>snowfall accumulations were common in the immediate Capital District. However, in the Mohawk Valley, just west of Amsterdam, and throughout the Western Adirondacks as well as the Lake George region, snow accumulated a foot or more. Most of the snow fell during the overnight hours on Sunday into Monday morning. To the west of Albany, snow fell heavily, at times in excess of 3 inches per hour.</p> <p>Specific accumulations included 7 inches at Albany, while East Caroga Lake got buried with 21, and 18 inches fell at Gloversville, both located in Fulton county. 17 inches fell at Fort Plain, Montgomery county and 16 at North Creek, Warren county. The storm once again closed many schools and some businesses. The snow removal effort was made more difficult due to the large amount of snow still left from previous storms.</p>
February 14, 2000	Winter Storm	N/A	N/A	<p>A low-pressure area developed over the Oklahoma panhandle early on February 13. This storm tracked northeast, reaching the Ohio Valley early on February 14, then across Pennsylvania and off the coast of Long Island by late in the day.</p> <p>The storm brought a potpourri of wintry weather to eastern New York, including snow, sleet, rain and freezing rain. A swath of 6 to 14 inches of snow fell across the Western Adirondacks, including 13 inches at Stillwater, and 7.5 inches at Indian Lake, both located in Herkimer county. Lesser amounts of snow fell across the remainder of the area. However, significant ice accumulated across the Saratoga-Lake George area. In this area, up to 3/4 of an inch of ice accretion was noted. The ice brought down some power lines near Scotia and Duanesburg in western Schenectady county. There were spotty power outages reported as well as some school and business closings.</p>
April 9, 2000	Winter Storm	N/A	N/A	<p>A strong cold front moved across eastern New York, then stalled to the east, over the Connecticut River valley late on April 8. Low pressure developed along this front, off Cape Hatteras. This storm strengthened as it moved due north along the front during the early morning hours of the 9th. Ample moisture was supplied by the warm air mass over eastern New England. Enough cold air was both advected into the region as well as brought downward by heavy precipitation to change the rain over to snow, and produce an unusually late season snowstorm. Snow, falling at the rate of 2 inches per hour, was common at the height of the storm. Gusty winds to near 35 mph produced near blizzard conditions at times, including both some blowing and drifting of the</p>



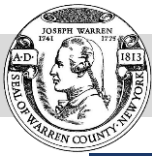
Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>snow. A mantle of 8 to locally more than 16 inches of snow buried the Schoharie and Mohawk valleys, Greater Capital District, Western Adirondacks as well as the Lake George Saratoga region. Further south, 4 to 8 inches of snow covered portions of the Mid Hudson Valley. The official reading of 13.3 inches at Albany was the second heaviest April snowstorm on record, second only to a 17.7 inch storm during 1982.</p> <p>Since the storm happened on a Sunday, disruptions from it were minimized. However, some business were closed or delayed in opening. The biggest damage from the storm was due to the heavy wet nature of the snow, which resulted in many damaged or downed limbs and trees, especially north of the Mohawk River. Up to 35,000 customers in eastern New York were without power during the height of the storm.</p>
March 21, 2001				<p>Low pressure, from eastern Georgia, moved to eastern North Carolina by the morning of March 21. The storm then tracked off the Virginia coastline and up the eastern seaboard, to become the third nor'easter of the month. By the morning of March 23, the storm center had slowly progressed to the Gulf of Maine. Although not all that powerful, the storm had both Gulf and Atlantic moisture to work with. Heavy wet snow fell, accumulating 5 to 10 inches across the higher terrain of eastern New York, with most valley locations getting little or no slushy accumulation. This snow was heavy and wet enough to bring down limbs across the region. Wires and trees were reported down in Middelburgh, Schoharie county. Trees also fell across portions of Warren county. Specific snowfall amounts included 7 inches at Windham, Greene County, 10.5 inches at Indian Lake, Hamilton County, 8.7 inches at Summit, Schoharie County, 8.5 inches at Stillwater in Herkimer County and 7.6 inches in Warrensburg, Warren County.</p> <p>An estimated 1,500 homes over the higher terrain across eastern New York state, were without power. Service was disrupted to about 100 phone customers in Warren County.</p>
November 17, 2002	Winter Storm	N/A	N/A	<p>A strong nor'easter developed off Cape Hatteras on Saturday, November 16. The low pressure center then slowly moved north along the coast, reaching Cape Cod by late November 17. At the same time, a shallow layer of arctic air bled south from eastern Canada. The air was cold enough to produce a heavy wintery mix of precipitation during a good portion of the storm across eastern New York. Initially, the precipitation fell as snow, or snow and sleet mixed. A 1-3 inch swath of snow was</p>



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				observed from about Albany southward. A 3-6 inch swath of snow fell north of Albany. As warmer air worked in aloft, the snow changed to sleet, then freezing rain. Freezing rain was more extensive south of Albany, where up to 58,000 customers lost power in the Mid Hudson Valley. Ice accretion was between one-half and one inch. Western Ulster County was especially hard hit where in addition to the ice, winds frequently gusted to 30 mph and, with lingering leaves on the trees, brought many trees and power lines down. Further north, the combination of snow, sleet and freezing rain still caused up to 1,000 customers in the Lake George Saratoga region to loose power, and spotty power losses elsewhere in the Capital District. In addition, there was a loss of significant limbs on trees and dangerous travel conditions.
December 14, 2003	Winter Storm	N/A	N/A	<p>A low pressure area formed in the Gulf States early on December 14. This storm hugged the coast line as it tracked northward to become the second nor'easter of the winter season. This storm moved a little quicker than its predecessor. Also different from the last storm, enough warm air moved in aloft to change the snow to sleet and freezing rain, especially from Albany south.</p> <p>Snow began falling during the morning hours to the south of Albany, into the Capital District around noon, and further north during the afternoon. The sleet and freezing rain began mixing in during the evening hours. Meanwhile, the precipitation stayed all snow from about Glens Falls northward. By the time the storm was east of Cape Cod, early on Monday, a swath of 4 to 8 inches of snow, mixed with sleet, had fallen from Albany southward. To the north, 8 to 16 inches of mostly snow fell with locally higher amounts across the Adirondacks. Officially, 7.2 inches of snow fell at Albany, while up to 20.8 inches of snow, the most in eastern New York, was reported at Old Forge in Herkimer County. The storm closed most school districts on Monday and resulted in some vehicular accidents.</p>
April 12, 2007	Winter Storm	N/A	N/A	<p>Low pressure moved from the mid Mississippi Valley on Wednesday April 11th into the southern Great Lakes by Thursday morning on April 12th, spreading a swath of heavy wet snow across the higher elevations of the southern Adirondacks and eastern Mohawk Valley from early Thursday morning into early Thursday afternoon.</p> <p>Snowfall amounts were greatest across the higher elevations above 1500 feet, where 6 to 12 inches fell. Some snowfall totals included 10.5 inches at Speculator, 10.3 inches at Wells, 8 inches at Caroga Lake and</p>

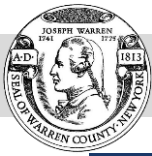


Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Stratford, 8 inches at Middle Grove, 12 inches at North Creek at an elevation of 3600 feet, and 10 inches at Bakers Mills. The heavy wet snowfall led to downed tree limbs and power lines, which led to numerous power outages across the affected region during Thursday afternoon.
February 6, 2008	Winter Storm	N/A	N/A	<p>A low-pressure system tracked east northeast from the lower Ohio Valley on Wednesday morning, February 6th, to just south of Cape Cod by Thursday morning on February 7th. This storm system spread a swath of moderate to locally heavy snow, sleet and freezing rain across portions of east central New York and adjacent western New England from Wednesday morning into Thursday morning.</p> <p>Snow and sleet amounts ranged from 6 to 12 inches across portions of the southern and western Adirondacks, with generally under 3 inches elsewhere. However, ice accretion from freezing rain ranged between one quarter, to just under one half of an inch, with the greatest amounts across the higher elevations of the central and southern Taconics, as well as across the Lake George and Saratoga region. The ice accretion led to scattered power outages as a result of downed tree limbs on power lines.</p>
January 28-29, 2009	Winter Storm	N/A	N/A	<p>A winter storm spread a significant wintry mix of precipitation across eastern New York State, with heavy snow and sleet across much of the southern Adirondacks into the Lake George Saratoga region. Snow and sleet amounts ranged from 8 to 12 inches across the southern Adirondacks and the Lake George Saratoga region. This wintry mix resulted in the closure of numerous schools and businesses across east central New York for both Wednesday and Thursday mornings, and also created treacherous travel conditions. Snowfall totals in Warren County ranged from 8 to 9 inches in the city of Glens Falls.</p>
February 18, 2009	Winter Weather	N/A	N/A	<p>Winter storm system swept northeast across eastern New York State early Thursday morning, preceded and accompanied by moderate to locally heavy wet snow. The snow began Wednesday afternoon, and tapered off early Thursday morning. The heaviest snowfall amounts occurred across the Lake George Saratoga region, where 6 to 10 inches fell.</p>
February 23, 2010	Heavy Snow	N/A	N/A	<p>A powerful storm impacted the region, the second in just a couple of days bringing heavy rainfall and a heavy wet snow to the local area. The heavy wet snow resulted in additional and continued widespread power outages across east central New York, downed trees and power</p>

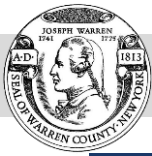


Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				<p>lines, treacherous travel, road closures, train delays, building collapses and snow emergencies.</p> <p>In Warren County, up to 2 feet of snow fell in the west portion of the county in the higher elevations. Route 9N at Pinewoods Road in the Town of Lake Luzerne was reported closed for a couple of hours late Tuesday evening, February 23rd, due to downed power lines. No property damages were reported. Snowfall totals in Warren County ranged from 10.5 inches in the City of Glens Falls to 21.3 inches at the Town of Lake Luzerne.</p>
February 25, 2010	Winter Storm	N/A	N/A	<p>This storm system produced a widespread swath of heavy wet snow across the greater Capital District and surrounding area, the Lake George Saratoga region, the Mohawk River Valley, Schoharie Valley and southern Adirondacks during the day Friday. Snowfall rates of 1 to 2 inches per hour occurred, beginning during the early morning hours, and persisting until late afternoon.</p> <p>Snowfall amounts reached 12 to 15 inches across northern portions of the Capital Region extending into the east central Mohawk River Valley and Lake George Saratoga region. The heavy snow created treacherous travel conditions for the morning and evening commutes on Friday, with numerous accidents reported, including along portions of the Adirondack Northway, as well as Interstate 90. The heavy wet snow also led to numerous school and business closings across much of eastern New York on Friday.</p> <p>Snowfall totals in Warren County ranged from 4 inches at Warrensburg to 24 inches at Garnet Hill in North River hamlet.</p>
December 10-11, 2013	Winter Weather	N/A	N/A	<p>As very cold air passed over the relatively warm water of Lake Ontario, a heavy, long-lasting band of lake effect snow developed on the evening of the 10<sup>th</sup>, extending east across the entire western and southern Adirondacks. By the time the band ended late in the evening of December 11th, over one foot of snow was common across the western Adirondacks. Snowfall totals included 4.5 inches at Gore Mountain in Warren County.</p>
December 14-15, 2013	Winter Storm	N/A	N/A	<p>A light snow slowly spread across New York State from southwest to northeast during the day on December 14<sup>th</sup>, followed by a steadier and heavier snowfall moved across the region during the evening hours and into the overnight. Snow fell at rates in excess of one inch per hour over much of the region and snow rates locally were as high as up to three inches per hour at times. The bulk of the accumulating snow was finished by the late overnight hours, but light snow showers and flurries</p>

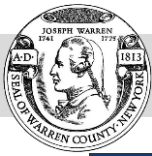




Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				continued into the mid-morning hours, especially across the Adirondacks and Capital Region. By the end of the storm, many places around the eastern Catskills, Capital Region and Lake George Saratoga Region received around a foot of snowfall. Snowfall totals in Warren County ranged from 9 inches at Brant Lake hamlet to 12.2 inches at the Town of Lake Luzerne.
February 13-14, 2014	Heavy Snow	N/A	N/A	<p>An exceptional winter storm impacted all of eastern New York between Thursday, February 13th and the morning of Friday, February 14th. The snow began falling in the morning hours at rates of up to three inches per hour, causing significant travel issues across the region. After a late afternoon break in the snowfall, heavy precipitation returned in the late evening hours. Once again, the snow fell at significant rates of up to 3 inches per hour. In addition, lightning and thunder accompanied the snow across far southern and eastern areas at times as well. By the time snow ended, between one and two feet of snow fell across much of the Lake George Saratoga Region, with lower amounts of 4 to 10 inches across the Adirondacks. Very strong winds, gusting as high as 40 mph, occurred as the storm pulled away. This led to significant blowing and drifting of the snowfall through the entire day on February 14th.</p> <p>As a result of the storm, Governor Andrew M. Cuomo declared a state of emergency for the Mid-Hudson as well other counties, including Warren, across east central New York. Restrictions were put on travel. Many towns and cities had difficulty with snow removal, as much of the snowfall also remained from a recent early February snowstorm as well. The weight of snow caused a few roof collapses and power outages across the region.</p> <p>Snowfall totals in Warren County ranged from 6 inches at North Creek hamlet to 12 inches at the Town of Lake Luzerne.</p>
November 26-27, 2014	Nor'Easter / Snowstorm	DR-4204	No	<p>An early season winter storm impacted eastern New York State during Thanksgiving. The storm began the morning of the 26<sup>th</sup> and once the snow began, it increased in intensity, falling at rates at or greater than one inch per hour. Temperatures dropped to or below freezing across the entire region. There were heavy bands of snow occurring in some locations, especially across the Taconics, Mohawk Valley and southeastern Adirondacks. Snowfall totals ranged from six to 12 inches, with up to 15 inches in the southeastern Adirondacks. The weight of the snow caused power outages in the area, especially across the mid-Hudson</p>



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				Valley. Warren County DPW reported numerous damages, including automobile damages from falling trees and icy conditions, transportation blockages, and phone wires falling on and entangling a truck. Snowfall totals in Warren County ranged from 10 inches at the City of Glens Falls to 14.5 inches at North Creek hamlet.
February 12, 2017	Winter Storm	N/A	N/A	Two low pressure systems approached the northeastern US on Sunday, February 12, with snowfall breaking out over the local area around sunrise. The snow was heavy during the morning and early afternoon, with accumulation rates of 1 to locally 2 inches per hour at times. The snow was wet and dense and readily clung to trees. During the afternoon, warmer air resulted in precipitation changing to sleet for portions of the mid-Hudson Valley and Catskills, which cut down snowfall totals in those locales. The snowfall diminished Sunday evening, except over the higher terrain areas of the Adirondacks as well as the Mohawk Valley. In those locations, accumulating snowfall persisted through the night and into Monday before diminishing Monday afternoon.
December 22, 2017	Winter Storm	N/A	N/A	A complex storm system brought snow and a wintry mix to the region on Friday, December 22nd through Saturday, December 23rd, 2017. The precipitation started out as snow on Friday but transitioned to a wintry mix by Friday night. Freezing rain lingered through the day Saturday as a warm front lifted through the region, especially for sheltered mountain valley areas. Snowfall totals ranged from a trace in the Mid-Hudson Valley up to 8.5 inches in the Adirondacks (Hamilton county) along with light icing as well. A few spots in the Mohawk Valley and Saratoga Region saw up to two tenths of an inch of ice.
January 19, 2019	Winter Storm	N/A	N/A	he largest snowstorm to date in the 2018-19 winter occurred on January 19th and 20th across eastern New York. Low pressure formed over the lower Mississippi Valley and lifted northeast across the Tennessee Valley during the night of the 19th before moving along the Mason-Dixon line on the 20th. Strong rising motion occurred as southerly winds aloft transported moist air northward, which was lifted over the cold airmass in place over eastern New York. Snowfall broke out during the afternoon of the 19th, continuing heavy at times into the evening and overnight hours before ending during the morning of the 20th. The strong southerly flow brought above-freezing air aloft into the region, causing the snow to turn to sleet as far north as the Capital District and northern Catskills for a time before turning

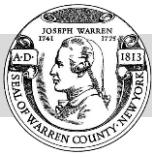


Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				back to snow. Further south, the air aloft was warm enough to turn the precipitation to freezing rain with ice accretion of one to three tenths of an inch over portions of the southeast Catskills, Mid-Hudson Valley, and southern Taconics.
March 23, 2020	Winter Storm	N/A	N/A	A late season snowfall impacted the region on Monday, March 23rd, 2020. This was brought on by an anomalously cold air mass interacting with a coastal low pressure system. Snowfall totals ranged from an inch in the Mid-Hudson valley up to almost 10 inches in the southern Adirondacks and northern Lake George Saratoga region. The lower amounts were mainly confined to the Lower Hudson Valley due to a rain and snow mix throughout much of the day. Snow intensity increased during the late afternoon and early evening hours impacting the evening commute. As a result, a tractor trailer crashed on Interstate 87 South prompting portions of the interstate to be closed.
January 17, 2022	Winter Storm	N/A	N/A	A winter storm dumped 7-14 inches over eastern New York January 16-17. It was also windy with gusts generally between 30-45 mph. There were a few gusts that topped 50 and 60 mph. Snow emergencies were put in place in the Utica/Dolgeville area.
March 13, 2023	Winter Storm	N/A	N/A	<p>A powerful Nor'Easter resulted in widespread moderate to heavy wet snow and gusty winds across eastern New York March 13-March 15, 2023.</p> <p>Anywhere from 15 to 30 inches of snow with locally higher amounts in excess of 30 inches fell over the SW Adirondacks and eastern Catskills. Valley locations received lesser amounts with totals generally ranging between 7 to 15 inches. A few locations across the western Mohawk Valley and mid-Hudson Valley received less than 6 inches of snow.</p> <p>Numerous downed trees and powerlines resulted in widespread power outages. According to the National Grid, approximately 141,000 customers lost power within the state of New York with most occurring within our county warning area. Some locations were without power for at least 1 or 2 days.</p>

Sources: NYSDEC, NWS, NYS DHSES, NOAA-NCDC, FEMA

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

DR	Disaster Declaration
EM	Emergency Declaration
FEMA	Federal Emergency Management Agency
HMP	Hazard Mitigation Plan
N/A	Not Applicable
NCDC	National Climatic Data Center
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service



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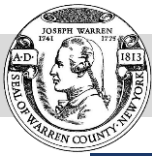
Public Assistance

## E.1.6 Wildfire

Known wildfire events that have impacted Warren County from 2002 to 2015 are identified in Table E.6. Fire departments throughout the County respond to small brush fires each year. However, many of these fires are so small that little information is available. Therefore, Table E.6 may not include a complete record of all wildfire events that have occurred within the county.

*Table E.6. Wildfire Events in Warren County, 2002 to 2015*

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
July 5, 2002	Wildfire	N/A	N/A	Smoke, from many forest fires across the Nemiscau region of northern Quebec, became trapped under a subsidence inversion, and was transported south across eastern New York from the evening hours of July 5, to the late evening of July 7. The forest fires were sparked by exceptionally hot and dry weather over that part of Canada followed by an unusual amount of thunderstorm activity, resulting in many lightning strikes. The circulation between high pressure over Hudsons Bay and a low pressure off the Canadian Maritimes transported the smoke southward. The smoke obscured the sky, and even reduced surface visibilities to as low as one mile, especially on the early morning of July 7. Advisories were issued warning people with respiratory problems to remain indoors and all individuals to curb outside activity. No major problems were reported to the National Weather Service as a result of this smoke.
April 30 – May 7, 2009	Wildfire - Tongue Mtn 1	N/A	NYS-2009-0133	A lightning strike started a forest fire in a forest preserve in the Town of Hague, resulting in 13 acres burned.
May 16 – 27, 2013	Wildfire - Pine Mountain Fire	N/A	NYS-2013-0099	A lightning strike started a forest fire in a forest preserve in the Town of Warrensburg, resulting in 16.8 acres burned.
November 4-10, 2014	Wildfire	N/A	NYS-2014-0139	In 2014, the largest wildfire to occur in New York State was the 173-acre Darling Mountain Fire in the Town of Queensbury that



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
				began on November 4. This fire occurred on private land and spread quickly because of strong winds blowing fallen leaves. Smoke from the fire triggered automatic alarm systems six miles away in the City of Glens Falls. Little mop up was needed for this surface fire, and it was declared out three days later. This fire was caused by hunters leaving an unextinguished campfire.
May 8 – 17, 2015	Wildfire	N/A	NYS-2015-0105	A campfire in the Town of Queensbury was reported to spark forest fires on private property, resulting in 14 acres burned.

Sources: NYSDEC 2013; NYSDEC 2015; NOAA-NCDC

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or following the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

FEMA Federal Emergency Management Agency

K Thousand (\$)

M Million (\$)

N/A Not applicable



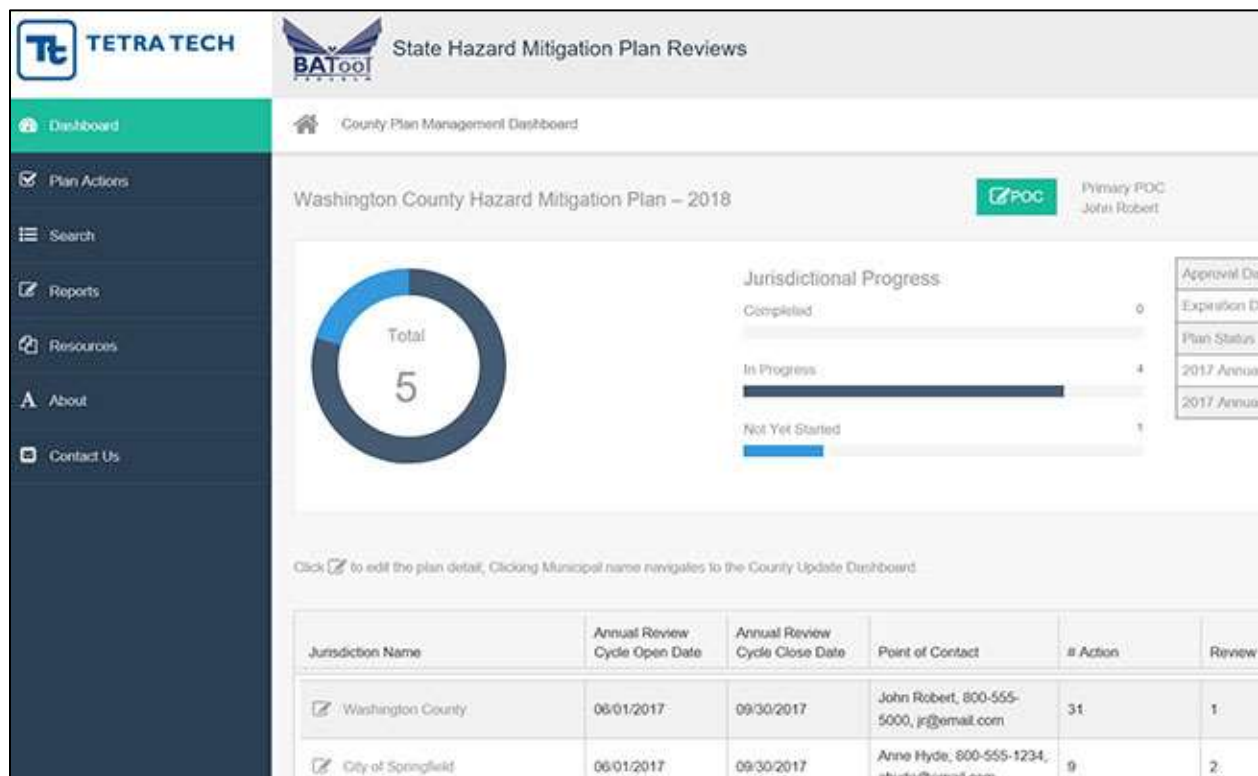
## APPENDIX F. PLAN MAINTENANCE TOOLS

This appendix includes tools and worksheets to facilitate plan maintenance and review by the Warren County Steering and Planning Committees.

In the first year of the performance period, an online performance progress reporting system, the BATool<sup>SM</sup> will provide municipal and county representatives direct access to their mitigation initiatives to easily update the status of each project, document successes or obstacles to implementation, add or delete projects to maintain mitigation project implementation. This online program will capture information and roll all input into a report to summarize mitigation strategy progress.



Figure G-1. BATool<sup>SM</sup> Screenshot



The FEMA 386-4 guidance worksheets are also available to assist with progress reporting. These worksheets are provided in this section for ease of access to the HMP Coordinator and Planning Partnership to maintain the 2023 HMP throughout its period of performance.



**Worksheet #1****Progress Report****step 2***Page 1 of 3*

Progress Report Period: \_\_\_\_\_ to \_\_\_\_\_  
(date) (date)

Project Title: \_\_\_\_\_ Project ID#: \_\_\_\_\_

Responsible Agency: \_\_\_\_\_

Address: \_\_\_\_\_

City/County: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Title: \_\_\_\_\_

Phone #(s): \_\_\_\_\_ email address: \_\_\_\_\_

List Supporting Agencies and Contacts:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Total Project Cost: \_\_\_\_\_

Anticipated Cost Overrun/Underrun: \_\_\_\_\_

Date of Project Approval: \_\_\_\_\_ Start date of the project: \_\_\_\_\_

Anticipated completion date: \_\_\_\_\_

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Milestones	Complete	Projected Date of Completion

**Plan Goal(s)/Objective(s) Addressed:**

Goal: \_\_\_\_\_

Objective: \_\_\_\_\_

**Indicator of Success** (e.g., losses avoided as a result of the acquisition program):

*In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.*

**Status** (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

**Project Status**☐ Project on schedule☐ Project completed☐ Project delayed\*

\*explain: \_\_\_\_\_

☐ Project canceled**Project Cost Status**☐ Cost unchanged☐ Cost overrun\*

\*explain: \_\_\_\_\_

☐ Cost underrun\*

\*explain: \_\_\_\_\_

**Summary of progress on project for this report:**

A. What was accomplished during this reporting period?

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B. What obstacles, problems, or delays did you encounter, if any?

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C. How was each problem resolved?

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**Next Steps:** What is/are the next step(s) to be accomplished over the next reporting period?

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.[illegible]

Adapted from the North Carolina HMGP Progress Report Form at [http://www.dem.dcc.state.nc.us/mitigation/document\\_index.htm](http://www.dem.dcc.state.nc.us/mitigation/document_index.htm).

**Worksheet #2****Evaluate Your Planning Team****step 3**

*When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:*

	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		
<b>Comments/Proposed Action:</b>		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?		
<b>Comments/Proposed Action:</b>		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?		
<b>Comments/Proposed Action:</b>		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?		
<b>Comments/Proposed Action:</b>		
Are there ways to gain more diverse and widespread cooperation?		
<b>Comments/Proposed Action:</b>		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?		
<b>Comments/Proposed Action:</b>		

*If the planning team determines the answer to any of these questions is "yes," some changes may be necessary.*



**Worksheet #3 Evaluate Your Project Results****step 3**

page 1 of 2

Project Name and Number: \_\_\_\_\_

Project Budget: \_\_\_\_\_

Project Description: \_\_\_\_\_

Associated Goal and Objective(s): \_\_\_\_\_

Indicator of Success (e.g., losses avoided): \_\_\_\_\_

*Insert location map.  
Include before and after  
photos if appropriate.*

Was the action implemented? ☐ YES ☐ NOIF **NO**

Why not?

YES NO

Was there political support for the action?

☐ ☐

Were enough funds available?

☐ ☐

Were workloads equitably or realistically distributed?

☐ ☐

Was new information discovered about the risks or community that made implementation difficult or no longer sensible?

☐ ☐

Was the estimated time of implementation reasonable?

☐ ☐

Were sufficient resources (for example staff and technical assistance) available?

☐ ☐IF **YES**

What were the results of the implemented action? \_\_\_\_\_

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page 2 of 2

	YES	NO
Were the outcomes as expected? If No, please explain:		
Did the results achieve the goal and objective(s)? Explain how:		
Was the action cost-effective? Explain how or how not:		
What were the losses avoided after having completed the project?		
If it was a structural project, how did it change the hazard profile?		
Additional comments or other outcomes:		

Date: \_\_\_\_\_

Prepared by: \_\_\_\_\_



**Worksheet #4 Revisit Your Risk Assessment step 4**

Risk Assessment Steps	Questions	YES	NO	COMMENTS
Identify hazards	Are there new hazards that can affect your community?			
Profile hazard events	Are new historical records available?			
	Are additional maps or new hazard studies available?			
	Have chances of future events (along with their magnitude, extent, etc.) changed?			
	Have recent and future development in the community been checked for their effect on hazard areas?			
Inventory assets	Have inventories of existing structures in hazard areas been updated?			
	Is future land development accounted for in the inventories?			
	Are there any new special high-risk populations?			
Estimate losses	Have loss estimates been updated to account for recent changes?			

*If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.*

**Worksheet #5****Revise the Plan****step 4**

page 1 of 4

**Prepare to update the plan.***When preparing to update the plan:**Check the box when addressed:*

1. Gather information, including project evaluation worksheets, progress reports, studies, related plans, etc.	<input type="checkbox"/>
Comments:	
2. Reconvene the planning team, making changes to the team composition as necessary (see results from Worksheet #2).	<input type="checkbox"/>
Comments:	

**Consider the results of the evaluation and new strategies for the future.***When examining the community consider:**Check the box when addressed:*

1. The results of the planning and outreach efforts.	<input type="checkbox"/>
Comments:	
2. The results of the mitigation efforts.	<input type="checkbox"/>
Comments:	



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3. Shifts in development trends.

Comments:

4. Areas affected by recent disasters.

Comments:

5. The recent magnitude, location, and type of the most recent hazard or disaster.

Comments:

6. New studies or technologies.

Comments:

7. Changes in local, state, or federal laws, policies, plans, priorities, or funding.

Comments:



8. Changes in the socioeconomic fabric of the community.	
Comments:	
9. Other changing conditions.	
Comments:	

**Incorporate your findings into the plan.***When examining the plan consider:**Check the box when addressed:*

1. Revisit the risk assessment. (See Worksheet #4)	
Comments:	
2. Update your goals and strategies.	
Comments:	
3. Recalculate benefit-cost analyses of projects to prioritize action items.	
Comments:	



Use the following criteria to evaluate the plan:

Criteria	YES	NO	Solution
Are the goals still applicable?			
Have any changes in the state or community made the goals obsolete or irrelevant?			
Do existing actions need to be reprioritized for implementation?			
Do the plan's priorities correspond with state priorities?			
Can actions be implemented with available resources?			

Comments:

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## APPENDIX G. CRITICAL FACILITY INVENTORY

### G.1 OVERVIEW

This section contains information and details to support information provided in Section 4 – County Profile which provides the distribution of critical facilities located within Warren County and its municipalities. Due to the sensitive nature of this information, details have been redacted. Contact the HMP Coordinator, for more information contact Ann Marie Mason Director, Warren County Office of Emergency Services at [masona@warrencountyny.gov](mailto:masona@warrencountyny.gov).





## APPENDIX J. PLANNING GUIDANCE

This appendix includes the 2022 NYS DHSES planning standards and guidelines for hazard mitigation planning, as well as FEMA guidance for classifying Lifelines within a community.



## 2022 New York State Hazard Mitigation Planning Standards (Supersedes the 2017 NYS Hazard Mitigation Planning Standards)

Congratulations on taking the first steps to update a multi-hazard mitigation plan for your community!

The goal of both the New York State Division of Homeland Security and Emergency Services (NYS DHSES) and FEMA is that all jurisdictions develop robust mitigation plans and tangible mitigation actions that will contribute to long-term risk reduction.

The 2022 NYS Hazard Mitigation Planning Standards reduce the 2017 Hazard Mitigation Planning Standards. Any plan currently in development, regardless of date funded, will be held *only* to these reduced standards.

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### PLEASE NOTE:

On April 19, 2023, FEMA's new Local Mitigation Planning Policy will take effect. Plans approved on or after this date **must meet requirements** as outlined in the linked [Policy Guide](#).

[https://www.fema.gov/sites/default/files/documents/fema\\_local-mitigation-planning-policy-guide\\_042022.pdf](https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf)

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The additional state requirements detailed below are intended to improve the quality of hazard mitigation plans and encourage the development of the most appropriate and effective mitigation projects for your community. It is recognized that many jurisdictions have inherent constraints and certain information may be difficult to provide. NYS DHSES and FEMA will work with you throughout the entire planning process to ensure the successful development of your community's hazard mitigation plan.

There are a multitude of resources that exist to provide guidance and support throughout the planning process, developed by Federal and State agencies, as well as private and research-based groups. We urge you to contact us so that we may direct you to additional resources and provide you with the most comprehensive technical assistance possible.

For questions and comments, please call our offices at 518-292-2304.

Additional contact information will be provided to sub-recipients for more direct assistance.



**Please note:**

*Jurisdiction* is used to describe all government entities within the boundaries set forth in the Multi-Jurisdictional Plan (typically County-wide), including the County itself, as well as cities, towns, villages and potentially tribes that choose to join a multi-jurisdictional plan.

*Special Flood Hazard Area (SFHA)* is defined as the area that will be inundated by the flood event having a 1-percent change of being equaled or exceeded in a given year (previously known as the 100-year flood event).

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**1. Assess Critical Facilities**

*Critical facilities must remain accessible and functional before, during and after disasters to meet the jurisdictions Continuity of Government (COG) and Continuity of Operations (COOP) standards, and to support important emergency, government and sheltering functions.*

Jurisdictions must identify all critical facilities, assess their vulnerabilities, and evaluate and ensure they are protected to a 0.02% chance (500-year) flood event. Critical facilities that are located in an SFHA and/or have been previously flooded, must be protected against a repeat of that flood or to the 0.02% chance flood event, whichever provides the greater protection.

- The plan must document the name of facility, type of facility, jurisdictional location, and exposure to a 1% (100-year) and 0.02% chance event.
- The plan must document those critical facilities are protected to a 0.02% flood event, or previous worst case flood event. For those that do not meet this level of protection, the plan must include an action to meet or go beyond this criterion or explain why it is not feasible to do so. Going beyond this criterion is optional but may be wise to protect against a future worst case due to climate change.

**2. Include Jurisdictional Annexes**

*Jurisdictional annexes provide a unique, stand-alone guide to mitigation planning for each jurisdiction.*

The plan must be organized so that there is an annex for every jurisdiction within the county's borders, including the County.

- The plan must include a table in the Introduction section clearly identifying all jurisdictions and which are seeking FEMA approval.
- The annex for each jurisdiction seeking FEMA approval must include the following:
  - Contact Information;
  - Jurisdiction Profile;
  - Hazard Identification (specific to the jurisdiction);
  - Hazard Event History;
  - National Flood Insurance Program (NFIP) Summary (to meet Federal Standards);
  - Critical Facilities Information (to meet F1);
  - Jurisdiction/public identified vulnerabilities;
  - Additional public involvement;
  - Capabilities Assessment;
  - Mitigation Strategy:
    - All identified previous mitigation activities with current status;
    - All proposed mitigation activities (both new and carried forward, to meet F3)
- The annex for each non-participating jurisdiction (those not seeking FEMA approval at this time), must include a cover sheet and should include as much information as is available.

**3. Develop Mitigation Actions**

*Projects that are well developed and documented in one place are more quickly identifiable for selection when grants become available, making implementation that much more likely.*

Within each jurisdictional annex, jurisdictions must develop 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. For jurisdictions containing an SFHA, one (1) of these actions must be for a project that addresses flooding.

**4. Post Draft Plan Online**

*Allowing the public to comment on the draft plan increases awareness about how mitigation saves lives and reduces risk and allows a final opportunity for public input.*

The public must have an opportunity to view and comment on the draft plan prior to submittal.

- The draft plan must be posted in full (except for discretionary sensitive information) on an existing county/jurisdiction website, or one created for the purpose of soliciting comments, for 30 days or the time prescribed by local law, whichever is greater, and the plan must describe efforts made to solicit public comments from potentially underserved areas where residents may not have access to a computer to view the website. The website must clearly identify how the public can comment on the plan, to include either specific contact information to send comments or a user-friendly form or survey.

**After NYS DHSES and FEMA Approval**

- Once designated Approvable Pending Adoption (APA) or Approved by FEMA, the final plan must be placed on the same website (cited above) in its entirety (except for discretionary sensitive information).
- Final payment will occur only after 50% of the participating jurisdictions have adopted the plan and provided adoption resolutions to NYS DHSES. For county-led hazard mitigation planning efforts, the county must be one of the adopting jurisdictions.

The chart below shows the requirements as they appear on the plan review tool used by NYS DHSES and FEMA Region II to determine whether a submitted plan meets federal and state requirements.

<b>1. REGULATION CHECKLIST</b>		<b>Location in Plan</b>		
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>		<b>(section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS – NYS HAZARD MITIGATION PLANNING STANDARDS</b>				
These are required actions for plans developed with NYS DHSES-administered funds.				
H1. Do jurisdictions identify critical facilities, assess vulnerabilities, and ensure protection to a 0.02% flood event or worst-case scenario?				
H2. Does the plan include an annex for every jurisdiction within the County's boundaries?				
H3. Within each jurisdictional annex, are projects developed in accordance with the NYS DHSES Proposed Projects Table?				
H4. Was the draft plan posted for public comment?				
<b>Note:</b> The applicant is required to address the 2022 NYS Hazard Mitigation Planning Standards as required actions for a hazard mitigation plan developed with funds administered by NYS DHSES.				
<b>ELEMENT H: REQUIRED REVISIONS</b>				
<i>Please see opportunities for improvement</i>				



## APPENDIX I. DAM FAILURE (CONFIDENTIAL)

This is a confidential appendix that summarizes the quantitative vulnerability assessment conducted for the dam failure hazard in Warren County. This section contains information and details to support information provided in Section 5.4.1 – Dam Failure Profile which provides the information regarding dam failure in Warren County. Due to the sensitive nature of this information, details have been redacted. Contact the HMP Coordinator, for more information contact Ann Marie Mason Director, Warren County Office of Emergency Services at [masona@warrencountyny.gov](mailto:masona@warrencountyny.gov).



## APPENDIX J. PUBLIC COMMENT

This appendix provides documentation of public comment received following public review of the draft Warren County Hazard Mitigation Plan. Public feedback on the draft plan is an important part of the hazard mitigation planning process. Public comments have been addressed throughout the HMP as appropriate.

### J.1 PUBLIC COMMENTS ON THE DRAFT PLAN

This section contains the public comment responses from the public review of the draft Warren County Hazard Mitigation plan. Comments were received from four residents for the entire plan and for specific sections. The public comments are provided in the following summary, with personal information removed.

#### J.1.1 Comments on the Entire Plan

- **Comment 1:** Request for a way to search the entire document for keywords.
  - **Response:** The final plan will be one searchable document.
- **Comment 2:** Expressed concern with recommending backup generators that use fossil fuels. Recommended using battery power backup systems, especially for powering facilities with vulnerable populations.
  - **Response:** Warren County will evaluate the use of power storage batteries to provide backup power instead of fuel powered generators, where possible.
- **Comment 3:** Recommended web based educational and outreach webinars to allow for remote participation for residents.
  - **Response:** Live Citizen Preparedness Training is available through NYSDHSES in conjunction with the National Guard and hosted by the County. Similar training is offered by the state offers and is available on YouTube in 13 languages at this link: <https://www.dhSES.ny.gov/citizen-preparedness-corps>.

#### J.1.2 Comments on Section 4

- **Comment 4.1:** Suggest adding a map showing the over 65 years old population in the county.
  - **Response:** The over 65 population group is discussed in detail in the vulnerability section of the plan.
- **Comment 4.2:** Recommend that the plan emphasize that seniors are more vulnerable to disease within the mitigation goals regarding public health guidance.





- **Response:** Information was added to the plan about vulnerability for seniors in Section 4 in order to emphasize the mitigation recommendations.

### J.1.3 Comments on Section 5

- **Comment 5.1:** Suggested that more needs to be done to coordinate the use of generators for senior citizens during winter power outages.
  - **Response:** The County action item #2 addresses backup power for critical facilities which includes those that support senior citizens.

### J.1.4 Comments on Section 9

- **Comment 9.1:** Recommend that the adaptive capacity for disease needs to be strong in Queensbury and elsewhere.
  - **Response:** The adaptive capacity ranks were developed through a stakeholder review by the Hazard Mitigation Plan Steering Committee and each participating community as part of the planning process. This is a factor in determining the relative risk presented by each hazard of concern. A higher adaptive capacity will result in a reduction in the relative hazard ranking and may be discussed with each community as needed to support the prioritization of projects.
- **Comment 9.2:** Highlighted that more needs to be done to control the Schroon River as it continues to flood more every year.

- **Response 9.2:**

The Schroon River in Warren County is impounded in the Town of Horicon by the Starbuckville Dam. The original dam was developed for the purpose of commerce of logs to paper and pulp mills in Glens Falls and further downstream on the Hudson River. The dam was rebuilt in 2005. This dam creates a pool elevation that has been established and is controlled by the dam. Dam sluices may be open, closed or in a combination of, to maintain the established water level.

The Schroon River in Warren County has a large watershed that begins in Essex County at Elk Lake. With such a large watershed, the Schroon is susceptible to flooding at any time of the year, but generally springtime during runoff and early-late summer with spring rains. As stated, flooding may occur at any time of the year based on existing hydrologic and meteorological conditions.

Floodplains associated with the Schroon River are often inundated during spring and high flow events. The vast majority of these areas are fields or forested areas. Development such as homes and commercial ventures have been established in existing floodplains or flood prone areas.



FEMA is currently redeveloping floodplain maps for Warren County and this updated and more accurate information will be used to determine what steps the county and its municipalities may take to reduce flooding impacts for landowners, while maintaining the ability of the river flow and utilize its floodplains when necessary.

- **Comment 9.3:** Recommend that the maps for Queensbury are revised to be easier to read.
  - **Response:** Users may zoom into digital maps to enable better readability.