

Appendix Columbia County CARP

Contents

History of Extreme Events Columbia County, NY

Leadership, Outreach and Process Questionnaire

Climate Smart Resilient Policy Analysis Report

Vulnerability Assessment and Story of Place Public Survey

Vulnerability Assessment and Story of Place Public Survey Results

Vulnerability Assessment Workshop Results Map

Adaptation and Vision Public Survey

Future Scenario Planning & Visioning Process

Future Scenario Planning & Vision Development Worksheets

Diversity, Equity, Justice and Inclusion Map

Climate Change Adaptation Strategies and Vision Examples

Potential Funding for Climate Adaptation Strategies

Appendix A

Columbia County CARP

History of Extreme Events

Columbia County, NY

Table 1. Severe Storms

Table 2. Severe Winter Storms

Table 3 Tornadoes

Table 4 Flooding Events

Table 1: Severe Storms in Columbia County, 2000-2015

Date	Location and Extent	Impact	Estimated Loss
20 April 2015	Windstorm in towns of Chatham, Canaan, New Lebanon, Ancram, Hillsdale, and Copake	Downed trees and powerlines	Columbia County: \$10,000
26 August 2011	Severe storm (Hurricane Irene) caused countywide flooding	Impassable roads; roads, culverts, and bridge damage; flooding and debris. Erosion under Mountain and Weed Mine Roads (Town of Ancram), bridge and culvert washout on Near Road (Town of Gallatin)	Columbia County: \$2,523,411.91
7 December 2008	Lightning storm in the Town of Livingston	Lightning strike caused damage from flying debris to nearby homes and cars	Livingston: \$15,000
16 June 2007	Hailstorm in the Village of Kinderhook	Primary damage to tree fruits, berries, and vegetable crops	Kinderhook: \$5,000,000
29 June 2007	Severe storm flooded the Towns of Ancram and Gallatin	Erosion and washouts on numerous roads. Erosion on Altenburg, Chase, Cottontail, Doodletown, Niver, Poole Hill, Rothvoss, Shepard, Skyline, Winchell Mountain, Westfall, Finkle and Dam roads (Town of Ancram)	Ancram: \$30,100 Losses to Gallatin were not estimated
15 April 2007	Severe storm flooded Kinderhook	Unspecified impacts	Kinderhook: \$2,000,000
2 April 2005	Severe storm flooded the Towns of Gallatin and Stuyvesant	Road erosion and debris removal	Stuyvesant: \$51,308 Losses to Gallatin were not estimated

30 August 2004	Flooding and flash flooding	Erosion and flooding	Columbia County: \$280,000
23 July 2002	Thunder and windstorm in the Town of Hillsdale	Downed trees and wires. Tree fell on a car	Hillsdale: \$15,000
5 June 2002	Thunder and windstorm in the Village of Kinderhook	Downed trees and power lines	Kinderhook: \$11,000
31 May 2002	Thunder and windstorms in the Town of Claverack	Downed telephone poles, wires, and tree limbs	Claverack: \$12,000
30 June 2001	Hailstorm in the Town of Stockport	Two-inch hail and wind damage	Stockport: \$20,000
3 June 2001	Thunder and windstorm in the Town of Clermont	High winds destroyed a 4,200 square foot shed and ripped roofs off of two barns.	Clermont: \$100,000
28 May 2001	Hailstorm in the Town of Stockport	Unspecified impacts	Stockport: \$11,000
9 August 2000	Thunder and windstorm in the Town of Gallatin	Unspecified impacts	Gallatin: \$22,000
3 August 2000	Lightening in the Town of Kinderhook	Lightning struck a tree and set nearby structures on fire	Kinderhook: \$40,000
25 June 2000	Thunderstorm in the Town of Livingston	Fallen trees and power outages	Livingston: \$24,000
2 June 2000	Thunder and hailstorms In the Towns of Livingston and New Lebanon	A large number of trees were snapped or uprooted, four downed utility poles, roof peeled off one house, chimney destroyed, damage to fruit crops, and power outages	Livingston: \$1,185,000 New Lebanon: \$24,000
15 May 2000	Thunder and windstorm in the Towns of Austerlitz, Claverack, Gallatin, Livingston, and Taghkanic	Unspecified impacts	Austerlitz: \$25,000 Claverack: \$21,000 Gallatin: \$95,000 Livingston: \$20,000 Taghkanic: \$15,000

Adopted from the Columbia County Multi-Jurisdictional Hazard Mitigation Plan (2018)-Appendix F

Table 2: Severe Winter Storms in Columbia County, NY

Date	Location and Extent	Impact	Estimated Loss
13 April 2011	Ice storm in the Town of Ancram and Gallatin	Downed trees and utility wires on roadways	Ancram: \$15,107 <i>Losses to Gallatin were not estimated</i>
5 February 2011	Severe winter storm in the Town of Hillsdale	Roads impassable	Hillsdale: \$22,000
26-27 December 2010	Severe winter storm in the Towns of Hillsdale, Stuyvesant, and Livingston	Road closures, snow removal, and power outages for two days	Hillsdale: \$50,630.57 Stuyvesant: \$17,727 Livingston: \$60,000
16 February 2010	Severe winter storm in the Town of Hillsdale	Roads impassable	Hillsdale: \$23,000
25 December 2009	Severe winter storm in the Town of Hillsdale	Roads impassable	Hillsdale: \$17,000
11-31 December 2008	Snowstorm in the Towns of Ancram, Livingston, and Gallatin	Downed trees and utility wires on roadways caused power outages	Ancram: \$25,250 Livingston: \$72,166 <i>Losses to Gallatin were not estimated</i>
February 2008	Severe winter and ice storms in the Town of Hillsdale	Washed out and impassable roads	Hillsdale: \$154,300
January 2008	Severe winter storms in the Town of Hillsdale	Roads impassable	Hillsdale: \$39,000
24 December 2002	Snowstorm in the Town of Stuyvesant	Snow removal	Stuyvesant: \$15,594

Adopted from the Columbia County Multi-Jurisdictional Hazard Mitigation Plan (2018)-Appendix F

Table 3: Tornadoes in Columbia County, 1990 – Current

Date	Location and Extent	Impact	Estimated Cost
17 November 2010	F1 tornado confirmed in Town of Ghent	Intermittent damage along 2 miles, including downed trees and damage to shingles and siding	unknown
21 July 2003	F2 tornado with two touchdowns confirmed in the Town of Kinderhook, the Newtown Hook section in the Town of Stuyvesant and the Town of Niverville	A barn, garage, and hay wagons were destroyed, cars were displaced, and roofs, trees, and utility lines were damaged. One resident was injured.	Kinderhook: \$370,000 Stuyvesant: \$10,000
3 July 1997	F1 and F2 tornado in the Town of Canaan and Copake Falls	Extensive damage to several residences between Beebe Pond and Berkshire County, Massachusetts.	Canaan: \$720,000 Copake Falls: \$60,000
29 May 1995	Tornado of unknown magnitude in the City of Hudson	Five injuries	Hudson: \$10,000,000

Adopted from the Columbia County Multi-Jurisdictional Hazard Mitigation Plan (2018)-Appendix F

Table 4: Flooding Events in Columbia County, 2000-2015.

Date	Location and Extent	Impact	Estimated Loss
30 September 2015	Countywide flooding	Widespread heavy rain inundated roadways, and caused localized evacuations	Columbia County: Unknown
28 August 2011	Hurricane Irene caused countywide flooding	Heavy rains associated with Hurricane Irene resulted in widespread flooding, major transportation routes closed for approximately 1 month due to washouts and flooding	Columbia County: \$2,523,411.91
29 July 2009	Flash flooding in the Town of Stuyvesant	Flash flooding over Kinderhook Creek, numerous roadways closed. Novak Road in Kinderhook and Reed Road in Ghent were washed out. Campers were stranded by high water.	Stuyvesant: \$4,500,000
11 August 2008	Flooding in the Town of Chatham	Several roadways closed due to flooding	Chatham: \$45,000
1 June 2007	Flooding in the Town of Ancram	Road erosion on Hall Hill Road	Ancram: \$44,705
April 2007	Flooding in the Town of Stuyvesant	Debris and road damage	Stuyvesant: \$50,040
15 April 2007	Flooding in the Village of Kinderhook	Widespread flooding of small streams led to numerous road closures, private basement flooding.	Kinderhook: \$2,000,000
1 June 2006	Flooding in the Town of Canaan, Flat Brook	Roads washed out and fallen trees	Canaan: \$24,000
2 April 2005	Flooding in western Columbia County	Claverack Creek overflowed banks,	Western Columbia County: \$240,989

		road erosion on Dam Road in the Town of Ancram.	Ancram: \$17,011
29 March 2005	Flooding in western Columbia County	Road closures due to flooding, private basement flooding	Western Columbia County: \$100,000
30 August 2004	Flooding in the Town of Canaan	Washed out roads and fallen trees west of County Route 5 and portions of SR-295.	Canaan: \$280,000
11 August 2003	Flash flooding in the Town of Ghent	Route 66 and Slateville Road flooded; the intersection of Route 9G and Merino Road flooded and closed for an extended period of time; and private basement flooding	Ghent: \$20,000
27 May 2002	Flooding in the Town of Canaan, Flat brook	Roads washed out, fallen trees, and six injuries	Canaan: \$78,800
30 March 2001	Flooding in the Town of Claverack	Rain and snow produced rapid runoff from the Claverack Creek flooding Webb Road	Claverack: \$15,000
17 December 2000	Countywide flooding	Flooding throughout the region and local states of emergency declared in the Towns of Germantown and Canaan	Columbia County: \$100,000
15 July 2000	Countywide flooding	Multiple streams overflowed causing wide-spread road and bridge closures. Residents became trapped by swift water. Flood waters damaged an animal hospital in Kinderhook as well as	Columbia County: \$1,500,000

		houses, cars, and farms in Ghent and Austerlitz. In Chatham, flood waters washed away a commercial building and farm foundation and destroyed 5.5 miles of roadways. Four roads were washed out in Hillsdale	
6 June 2000	Countywide flooding	Route 9G, Spook Rock Road, County Route 7, Webb Road, Pine Wood, Lockwood Road, and many low-lying regions flooded	Columbia County: \$75,000
2 June 2000	Flash flooding in the Town of New Lebanon	Unspecified flood damage	New Lebanon: \$18,000

Adopted from the Columbia County Multi-Jurisdictional Hazard Mitigation Plan (2018)-Appendix F

Appendix B
Columbia County CARP

Leadership, Outreach and Process Questionnaire

COLUMBIA COUNTY CLIMATE ADAPTATION AND RESILIENCE PLAN (CARP)

Local Leadership, Outreach and Process Questionnaire Summary for the Town/Village/City of

Prepared by Cornell Cooperative Extensions

This questionnaire summary will be used to form the working organizational structure as well as the community outreach and engagement strategy for the Climate Adaptation and Resilience Plan. It is intended to establish the leadership team and identify the key stakeholder group that will be involved in the process. The leadership team will work with CCE facilitators and will be responsible for coordinating the planning process. This summary will serve to document identified stakeholders' contact information and facilitate direct outreach to these participants. Additionally, this summary will help to inform the analysis of existing plans and methods to be used for input gathering.

Town /Village/City of

1. SURVEY TAKERS INFORMATION

Name	
Email	
Phone	
Role in Municipality	

2. LEADERSHIP TEAM

The leadership team will provide the organizational structure to help coordinate and refine the planning process. This team includes people that will be involved in all steps of the plan development, be a point of contact for CCE, liaison with municipality and stakeholders, and help coordinate and do outreach for workshops and surveys.

Name	Email	Phone	Role in Municipality
1.			
2.			
3.			
4.			
5.			
6.			

3. MUNICIPAL STAFF STAKEHOLDER GROUP (fire, police, transportation, etc)

The municipal staff stakeholder group includes people that will be involved in the analysis of plans and policies (a 2-hour municipal meeting and follow-up communications), two workshops, a plan review, and/or developing implementation strategies.

Stakeholder Group	Name	Email	Phone	Title	Plan Involvement
<i>Emergency Services/EMT/Ambulance</i>					
<i>Highway Department/Public Works</i>					
<i>Fire Department</i>					
<i>Police Department</i>					
<i>Code Enforcement Officer</i>					

4. MUNICIPAL BOARDS/COMMITTEES STAKEHOLDER GROUP

The municipal boards/committees stakeholder group includes people that will be involved in the analysis of plans and policies (a 2-hour municipal meeting and follow-up communications), two workshops, a plan review, and/or developing implementation strategies. s

Name	Email	Phone	Name of Board or Committee	Title	Plan Involvement
1.					
2.					
3.					
4.					

5. COMMUNITY STAKEHOLDER GROUP

The community stakeholder group includes a diverse set of people from a broad cross section of your community. They could include business leaders, school/library representatives, minority leaders, impacted neighborhood representatives, farmer representatives, etc. This is a group of stakeholders that may participate in workshops and will receive direct outreach regarding development of the plan.

Name	Email	Phone	Role in Community
1.			
2.			
3.			

**Additional Information:

6. LOCAL PLAN KNOWLEDGE

Each municipality will be assigned a CCE team member who will analyze the plans and begin filling out the climate smart resiliency planning tool used to identify strengths and gaps. The leadership team and knowledgeable municipal representatives will then meet with CCE to provide the local input needed to complete the tool.

Plan Name	Aware of Having this Plan	Local or County Plan	Link	Notes
1. Municipal Master Plan				
2. Zoning Ordinance				
3. Subdivision Ordinance				
4. Open Space Plan				
5. Natural Resources				

Conservation Plan/Inventory				
6. Stormwater Management Plan				
7. Coastal Plan or Element in Other Plan				
8. Shoreline Restoration Plan				
9. Floodplain Management Plan				
10. Flood Damage Prevention Ordinance				
11. Evacuation Plan				
12. Emergency Response & Short-term Recovery Plan				
13. Continuity of Operations Plan				
14. Disaster Recovery Plan				
15. Long-term Recovery Plan				
16. Economic Development Plan/Strategy				
17. Capital Improvements Plan				
18. Metropolitan Transportation Plan				
19. Historic Preservation Plan				
20. Local Waterfront Revitalization Plan				
21. Climate Action Plan				

****Additional Information:**

7. DISTRIBUTION METHOD IDEAS FOR UPCOMING PUBLIC SURVEYS

The CARP process will involve the distribution of two public surveys. The Story of Place & Vulnerability Survey (#1) will be to gather information about local conditions, story of place and vulnerability. It will be launched following a Public Educational Webinar. This webinar is intended to announce and describe the climate adaptation planning process. This presentation will include climate change effects and impacts as well as socioeconomic and ecosystem data/maps for Columbia County localities. The Adaptation Strategies & Community Vision Survey (#2) will be to prioritize adaptation strategies and resilience visions. It will be deployed following the two Vulnerability Assessment and Scenario Planning Workshops.

The CCE team will support the creation and development of the surveys along with the collection and analysis of results. However, distribution of the surveys using approaches listed in the next section will be the responsibility of each municipality.

Type of Distribution	Coordinated and Completed by Municipality	Notes on Approach Specifics
1. Paper Survey		
2. Events		
3. Direct Canvassing		
4. Website		
5. Social Media		
6. Email		
7. Public Meetings		
8. Over the Phone		
9. App / QR code		
10. Mail		

****Additional Information:**

Appendix C

Columbia County CARP

Climate Smart Resilient Policy Analysis
Report

Town of Gallatin

Climate-Smart Resiliency Planning

Prepared by Gillian Mathews, Cornell Cooperative Extension of Ulster County

Climate Smart Resiliency Planning Tool is a checklist to identify gaps in a community's planning process.

Cornell Cooperative Extension (CCE) evaluated opportunities for the Town of Gallatin to improve its community's resilience to climate change with the Climate Smart Resiliency Planning Tool (CSRPT or Planning Tool). The Planning Tool reviews many long-term and short-term aspects of climate change and storm preparedness by reviewing Town and County planning documents, activities, and management. CCE staff reviewed the Town of Gallatin and Columbia County planning documents and consulted municipal staff members to complete the Planning Tool and develop recommendations based on the Planning Tool results. There was ongoing communication with the Town and Town's Climate Smart Communities Task Force throughout the project. The recommendations for opportunities to improve Gallatin's resilience to climate change and climate disasters are outlined in this report. The recommendations and report were presented to the Town Board and reviewed by the Town's Climate Smart Communities Task Force.

Municipal staff engaged in the Town of Gallatin Climate-Smart Planning assessment:

John Reilly, *Town Supervisor*

Patricia Odell, *Town Council Member*

Lisa DeLeeuw, *Town Clerk*

Larry Brody, *Emergency Services Representative*

Leah Cadwallader, *Zoning Board of Appeals Vice Chair*

Jack Gomm, *Town Highway Superintendent*

Terry Porter, *Planning Board Chair*

Contents

Areas of Strength	3
Areas of Opportunity	3
Key Priorities	4
Recommendations	5
Section 1- Plan Checklist.....	5
Section 2- Vulnerability and Risk Assessment.....	5
Section 3- Public Outreach and Engagement.....	5
Section 4- Integration of Municipal Plans	7
Section 5- Disaster Preparedness and Recovery	8
Section 6- Hazard Mitigation Implementation.....	9
Potential Funding Sources	10

The completed assessment and recommendations highlight areas of opportunity for the Town of Gallatin to integrate storm and climate change preparedness into its municipal operations and planning.

Areas of Strength

- The Town has adopted the New York State Climate Smart Communities Pledge intending to become certified as a climate-smart community by focusing on specific actions within the NYS Climate Smart Communities Program to increase resiliency to climate change.
- The Town was an active participant in the 2018 update of the Columbia County Multi-Jurisdictional Hazard Mitigation Plan.
- Gallatin completed a recent update to the 2007 Comprehensive Plan and integrated the following required and optional elements of PE6 Action: Comprehensive Plan with Sustainability Elements:
 - **Required:**
 - Support alternative modes of transportation (including strategies for bicycles, pedestrians, public transit, and electric vehicles)
 - Promote smart growth principles in land-use policies
 - Conserve natural areas (including strategies to designate open space and protect it from development)
 - Promote a healthy and safe community
 - Foster equity (including strategies for housing, schools, transportation, recreation, food, and environmental exposures)
 - **Optional:**
 - Foster green economic development
 - Foster the efficient use of natural resources (e.g., water conservation)
 - Promote the development of (or the conservation of) local food systems
 - Protect drinking water sources from pollution
 - Promote adaptation to climate change (including strategies related to land use and public education and engagement)
 - Comprehensive Community Vision Statement (2023)
- The Town of Gallatin, in conjunction with the NYS Department of Environmental Conservation Hudson River Estuary Program completed a Habitat Summary in 2021, providing information for land-use planning and decision-making.

Areas of Opportunity

- The Town of Gallatin is a participating municipality in the development of Climate Adaptation and Resiliency Plans (CARP) in Columbia County (2023-2024) which can be leveraged for the completion of the following actions through the Climate Smart Communities (CSC) program to earn points towards certification:

- PE7 Action: Climate Vulnerability Assessment (4-16 pts.) as part of the climate adaptation planning process.
- PE7 Action: Evaluate Policies for Climate Resilience (6 pts.) for the completion of a Climate Smart Resiliency Planning Tool.
- PE7 Action: Climate Adaptation Plan (15 pts.) for creating a community-developed climate adaptation and resilience vision statement (3 pts.) and the completion of a climate adaptation plan with a comprehensive scope that covers all relevant climate hazards for the entire geographic area of the community (12 pts.).
 - For more information on the Climate Smart Communities Program and the actions listed in this document, visit the Climate Smart Communities portal.¹
- The Town has a website capable of sharing documents, links, and plans with the public they could be leveraged to organize documents for the NYS Climate Smart Communities Program and earn points under pledge element PE9 of the Climate Smart Communities Program. For example, the Town can:
 - Dedicate a page on the Town website or a separate website for the Climate Smart Task Force.
 - Restructure and update the contents "documents" tab or link to better itemize documents under appropriate topic headings so essential documents that need to be made publicly accessible when applying for certification under the NYS Climate-Smart Communities Program can be accessed easily and downloaded quickly.
 - Host information on preparing for disasters and warning on imminent storms or weather events, or the effects of climate change.
- The Town is encouraged to serve as an active participant in the next update of the Columbia County Multi-Jurisdictional Hazard Mitigation Plan.
- The Town could seek out training opportunities for municipal staff related to emergency management issues, such as the FEMA Emergency Management Institute and similar training available at the National Emergency Training Center campus.

Key Priorities

In discussions with the Town, extreme temperatures and heat waves, wind and power outages, and heavy snow and ice storms were identified as the climate disasters most often experienced by the Town. The municipality's top priority is updating its emergency plan.

- Create an up-to-date emergency response, short-term recovery plan, and climate hazards response plan. In discussions with Town officials, we learned that a local emergency response plan needs to be created. Create an up-to-date emergency plan that:
 - Clearly defines the roles of municipal officials and emergency responders.
 - Incorporates data and predictions related to natural hazards,
 - Identifies known and potential hazard areas and evacuation routes out of those areas, and
 - Provides actions to take during, immediately after, and long-term following a climate disaster.

¹ Climate Smart Communities Portal: <https://climatesmart.ny.gov/>

Recommendations

The following opportunities emerged under each of the sections of the Climate Smart Resiliency Planning Tool assessment:

Section 1- Plan Checklist

- The Town does not have an Evacuation Plan, Disaster Recovery Plan, or Long-term Recovery Plan. Consider encompassing evacuation and recovery plans into an Emergency Management Plan.

Section 2- Vulnerability and Risk Assessment

- The Town currently does not use maps to spatially define vulnerabilities to climate risks for vulnerable populations (e.g., children, elderly), buildings, infrastructure, or cultural resources. Consider creating and using such maps. If it is beyond the Town's capacity, look to Columbia County staff who can use these resources.
- Adopt the projections of sea-level rise from the State Sea Level Rise Task Force report or more recent studies for planning purposes.
- Ensure that vulnerability and risk assessments are shared with all relevant municipal officials and emergency managers.
- Incorporate estimates of future financial losses resulting from natural disasters into plans.

Section 3- Public Outreach and Engagement

*The information below can also be shared on the Town's social media and newsletter, etc. for CSC points. **CSC PE9 Action: Social Media (3 pts.)***

- Before the threat of a storm, have public information plans in place to provide residents with information, including expected areas of impact, evacuation routes, and locations of pet and severe weather shelters.
- Inform residents about available disaster resources through municipal website links, television, radio, and social media for points toward **CSC PE9 Action: Social Media (3 pts)**.² Resources could include:
 - American Society for the Prevention of Cruelty to Animals (ASPCA) disaster preparedness steps for domesticated animals.³
 - FEMA's "Are You Ready" guide.⁴
 - FEMA's Homeowner's Guide to Retrofitting.⁵

² This action was identified as a priority action by municipal staff.

³ ASPCA's Disaster Preparedness for Domesticated Animals: <https://www.asPCA.org/pet-care/general-pet-care/disaster-preparedness>

⁴ FEMA's "Are You Ready" Guide: <https://www.fema.gov/media-library/assets/documents/7877>

⁵ FEMA's Homeowner's Guide to Retrofitting: <https://www.fema.gov/media-library/assets/documents/480>

- Provide residents with guidance on developing personal and family evacuation plans or what to include in emergency or evacuation kits (FEMA's Ready.gov checklist).
- Consider developing a public outreach plan focused on climate outreach and engagement for points toward **CSC PE9 Action: Climate Change Education and Engagement (4-8 pts.)**.
 - Take advantage of festivals and other events held either in or near the Town of Gallatin to provide residents and visitors to the area with information about the Town's plans to become more resilient to climate change. This could be in the form of educational signage or in-person educational programs.
 - Hold a climate change education event at a Town function to inform the public about climate change, its effects on the Town, and efforts that the Town is making to make the community more resilient.
- Create a webpage for the Climate Smart Gallatin Task Force on the current Town website (or consider developing a new website) for points towards **CSC PE9 Action: Local Climate Action Website (3 pts.)**. The website could focus on:
 - *The efforts and accomplishments of the community to reduce Greenhouse Gas (GHG) emissions. The webpage may include:*
 - A description of the local government's goals and projects related to local climate change mitigation and adaptation. This can include links to local reports and plans, such as GHG inventory reports, climate action plans, vulnerability assessments, and reports on progress toward achieving GHG targets and other goals.
 - Ways residents and businesses in the community can participate in efforts led by the local government to reduce GHG emissions and build community resiliency to climate change.
 - A summary of actions residents and businesses in the community can take to reduce their GHG emissions. The summary could include links to external resources that provide more information and describe the support available for actions related to, for example, energy efficiency, renewable energy, and clean transportation options, such as electric vehicles.
 - *Information pertaining to storm/emergency preparedness and flood mitigation. Consider making this webpage available in Spanish and English, with culturally sensitive approaches. The webpage may include:*
 - The availability of floodplain information to property owners, businesses, insurance agents, real estate agents, and lenders⁶.
 - Add a link directing residents and businesses to the Columbia County DER's webpage on storm preparedness⁷.

⁶ FEMA's Flood Map Service Center: <https://msc.fema.gov/portal/search>

⁷ Columbia County Department of Emergency Response: <http://www.co.Columbia.ny.us/QuickLinks/17006.htm>

- Add a link directing residents to the Columbia County DER’s webpages that provide information on what to include in an at-home emergency kit⁸, emergency supplies, and evacuation kit.
- Provide residents with guidance on the development of personal or family evacuation plans⁹.
- Provide residents with information on expected inundation areas, evacuation routes, evacuation bus pick-up locations, and location of severe weather shelters and pet shelters before the threat of a storm.
- Share the link from the Columbia County DER’s webpages¹⁰ to the ASPCA’s disaster preparedness steps for domesticated animals.
- Share information on the NY-Alert program¹¹ and how residents can sign up.
- Include information on the natural and beneficial functions of floodplains, wetlands, and green infrastructure, and information on flood mitigation.
- Share information on the new Ready Columbia app¹² as well as the new vulnerable populations sign-up¹³.

Section 4- Integration of Municipal Plans

- When updating the Town Comprehensive Plan, include sustainability elements within its contents for meeting **CSC PE6 Action: Comprehensive Plan with Sustainability Elements (3-21 pts)**, including:
 - Mention and incorporate resilience within the plan's mission, vision, and goals.
 - Explain the support and involvement of emergency managers and public works officials in creating the plan's contents.
 - Link recommendations to reducing hazard vulnerability through land-use planning.
 - Emphasize non-structural pre-disaster mitigation measures, such as acquiring land prone to damage from climate disasters.
 - Include strategies that determine whether to relocate structures that repeatedly experience climate disasters (e.g., flood or wind damage), including identifying an equitable approach for community involvement in decision-making and potential funding sources.
 - Cross-reference the County's multijurisdictional hazard mitigation plan.

⁸ Columbia County Family Emergency Plan and Supplies: <https://www.Columbiany.gov/Departments/Emergency-Response/Family-Emergency-Plan-and-Supplies.htm>

⁹ FEMA’s evacuation guide: <https://www.ready.gov/evacuation>

¹⁰ Columbia County Emergency Pet Planning: <https://www.Columbiany.gov/Departments/Emergency-Response/Pet-Planning.htm>

¹¹ NY Alert Program: <https://alert.ny.gov/>

¹² Ready Columbia App: <https://www.Columbiany.gov/Departments/County-Executive/New-Tools-Help-Residents-Prepare-for-Emergencies.htm>

¹³ Columbia County AFN Registry: <https://www.Columbiany.gov/Needs-Registry-Form/Registry-For-Individuals.aspx>

- Prepare an official source water protection plan considering climate change to meet **CSC PE7 Action: Source Water Protection (6-10 pts.)**.
 - Utilize the framework identified in the NYS Department of Environmental Conservation's "A Framework for Creating a Drinking Water Source Protection Program."¹⁴
 - When drawing up the plan, create a diverse stakeholder group with at least one member familiar with local and regional climate change concerns.
 - Establish goals for protecting drinking water supplies from climate change-related impacts and formulate a vision for resilient water infrastructure.
 - Assess drinking water supplies in Town and potential contamination sources.
 - Consider the projected climate change impacts on those supplies over time, such as the increased frequency and severity of precipitation events that may cause increased pollution from surface runoff from urban and agricultural lands.
 - Identify and create an implementation plan, including achievable timelines, protection and management strategies for the community's drinking water sources, and funding strategies.

Section 5- Disaster Preparedness and Recovery

- Although the county is part of the Storm Ready Community program, the Town of Gallatin is not an individual Storm Ready community. Consider participating in the National Weather Service Storm Ready Community program¹⁵, which helps communities proactively prepare for extreme weather and natural disasters.
- Encourage vulnerable residents to sign up for the Columbia County Access & Functional Needs (AFN) Registry¹⁶. Residents who have a physical or mental disability and would need assistance leaving their homes quickly in the event of an emergency are encouraged to sign up so resources can be planned accordingly during an emergency event. This information can be shared with local municipalities to integrate into emergency planning.
- Schedule and advertise county-led Citizen Preparedness Training¹⁷.
- Create a Heat Emergency Plan **CSC PE7 Action: Heat Emergency Plan (6 pts.)**. Be sure to designate cooling center locations (e.g., firehouse) where vulnerable populations can go and how the community will respond during a prolonged heat emergency.
- Formally designate cooling centers **CSC PE7 Action: Cooling Centers (1-9 pts.)**. To implement this action:
 - Identify and assess cooling centers.
 - Implement new cooling centers or upgrade existing ones.

¹⁴ NYSDEC's A Framework for Creating a Drinking Water Source Protection Program: https://www.dec.ny.gov/docs/water_pdf/dwsp2draftframework.pdf

¹⁵ National Weather Service Storm Ready Community Program: <https://www.weather.gov/StormReady>

¹⁶ Columbia County AFN Registry: <https://www.Columbiany.gov/Needs-Registry-Form/Registry-For-Individuals.aspx>

¹⁷ Columbia County Citizen Preparedness Training: <https://www.Columbiany.gov/Departments/Emergency-Response/Citizen-Preparedness-Training.htm>

- Promote awareness of cooling centers.
 - Implement additional services to encourage the utilization of cooling centers.
- Create a formal evacuation plan with routes out of known climate hazard areas.
- Create an up-to-date emergency response, short-term recovery plan, and climate hazards response plan. In discussions with Town officials, we learned that a emergency response plan needs to be created. Create an up-to-date emergency plan that:
 - Clearly defines the roles of municipal officials and emergency responders.
 - Incorporates data and predictions related to natural hazards,
 - Identifies known and potential hazard areas and evacuation routes out of those areas,
 - Provides actions to take during, immediately after, and long-term following a climate disaster.
- Designate and advertise the location, route, and emergency circumstances of storm shelters within the community or establish a memorandum of agreement with a neighboring community to provide constituents shelter in the event of a storm emergency.

Section 6- Hazard Mitigation Implementation

- Create a Government Operations Plan **CSC PE2 Action: Government Operations Climate Action Plan (12 pts.)** that sets reductions for greenhouse gas emissions generated by government operations.
- Expand the use of county, state, and federal grant programs (when available) to implement mitigation and resiliency projects.

Potential Funding Sources

- [DEC Climate Smart Communities Grant Program](#)
- [DEC Grant Applications](#)
- [DEC Hudson River Estuary Program Grants](#)
- [FEMA Hazard Mitigation Grant Program](#)
- [FEMA Building Resilient Infrastructure and Communities Program](#)
- [FEMA Flood Mitigation Assistance Grant Program](#)
- [HUD Community Development Block Grants](#)
- [NYS Department of State Grants \(including Local Waterfront Revitalization Program\)](#)
- [NYS Local Waterfront Revitalization Program \(LWRP\)](#)

Appendix D
Columbia County CARP

Vulnerability Assessment and Story of Place
Public Survey

Columbia County and 17 of its municipalities are creating Climate Change Adaptation and Resilience Plans

These plans will establish a vision and set of strategies to improve your community’s resilience to climate change based on its vulnerabilities. Please tell us how your community might be at risk due to extreme weather and climate hazards and what you value about your community.

Which town/village/city do you live in? _____

Climate Change Impacts

Please indicate how threatening each potential climate hazard might be to your community.

Climate Hazard	Very Threatening	Somewhat Threatening	Not Very Threatening	Not a Threat
Increased flooding				
Sea-level rise				
Increased extreme heat				
Increased drought				
Increase in severe storms				
Increase in winter storms				
Increase of wildfires				
Increased windstorms				
Increase in heavy precipitation				
Changing seasonal temperatures				
Reduced snowfall and accumulation				

Please describe extreme weather events or climate hazards you have experienced. Where are the high-risk areas?

Community Assets

Which community assets are important to protect from the impacts of extreme weather events and climate hazards?

Community Asset (Potential Risks)	Very Important	Somewhat Important	Not Very Important	Not Important
People (Loss of life, health, injuries)				
Economy (Business interruptions/closures, job losses, energy disruptions, etc.)				
Infrastructure (Damage or loss of libraries, museums, historic properties, etc.)				
Environment (Damage or loss to forest, waterways, air quality etc.)				
Governance (maintain order and/or provide public amenities and services)				
Agricultural (Damage or loss of farms, supply chain disruption, food security)				
Culture (Ability to maintain traditions, social networks, and support systems)				

What is unique about your community?

What are the most important/influential institutions, organizations, or businesses in your community?

Community Risks

How vulnerable are the following risk categories to the impacts of extreme weather events and climate hazards?

Community Risk	Very Vulnerable	Somewhat Vulnerable	Not very Vulnerable	Not Vulnerable
Private property				
Critical facilities (transportation, communications, shelters etc.)				
Natural assets and open spaces (streams, wetlands, beaches, etc.)				
Historic and cultural landmarks				
Utilities (electric infrastructure, renewable energy, water/sewer)				
Emergency services (police, fire, etc.)				
Community services (food pantries, libraries, public agencies)				
Farms and agriculture				
Public health and healthcare				
Employment and childcare				

- Which infrastructure, facilities, and services in your community are exposed to climate hazards and extreme weather? How is it vulnerable? (e.g. location, age, building codes, type of building)?
- What populations are living in high-risk areas (e.g. age demographics, income level, special needs, languages spoken)?

Environmental Impacts

Please indicate how important are the following potential impacts to your community.

Environmental Impacts	Very Important	Somewhat Important	Not Very Important	Not Important
Loss of natural resources				
Decreased waterway and surface water quality				
Decreased air quality				
Decreased drinking water availability and quality				
Decreased food security				
Loss of plant and animal habitat and biodiversity				
Increased invasive species presence				

- Which natural resources are exposed to climate hazards and what effects have they had?
- What are the prominent geographic features of your community?

*Do you have pictures of extreme weather, flooding, or damage from storms in your community? If you'd like to share them with us to potentially include in a plan, please provide your email address below.

Thank You For Sharing



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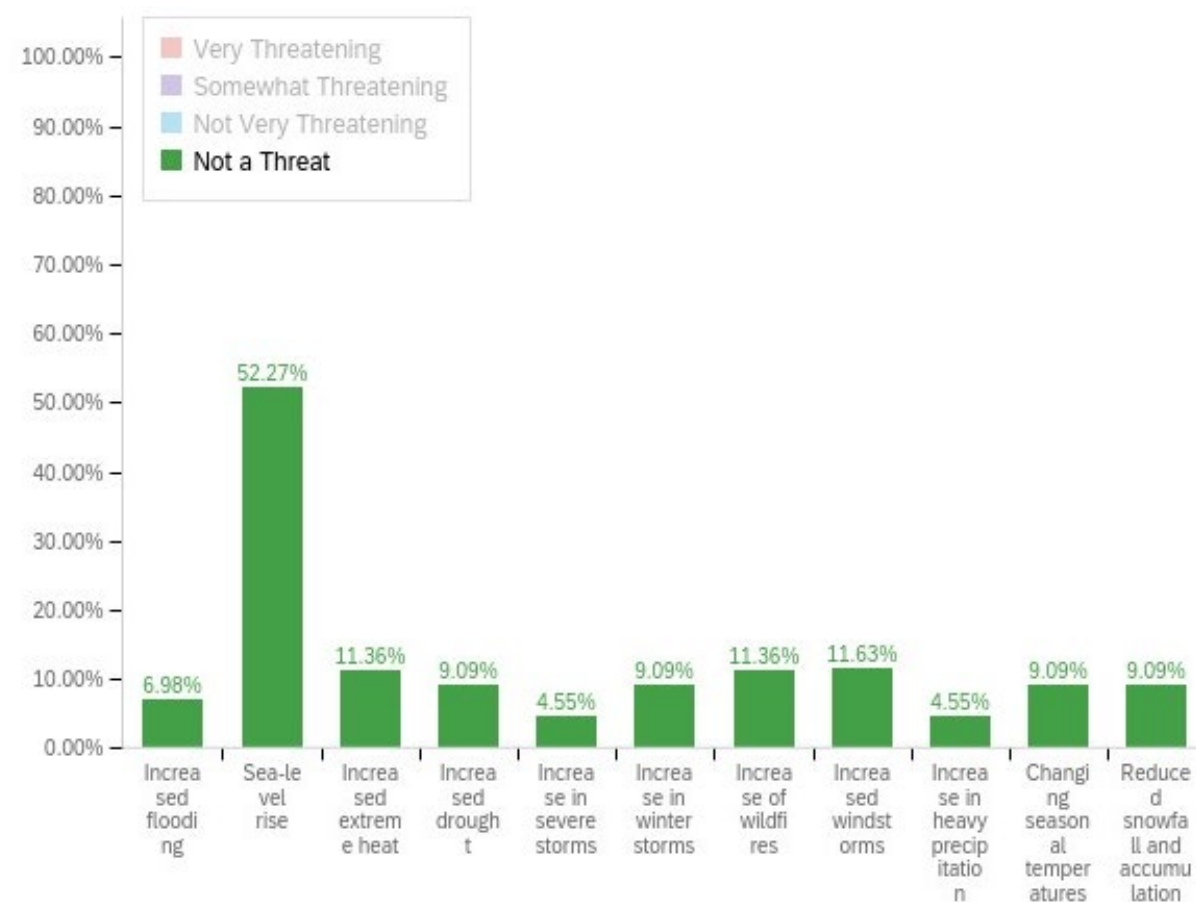
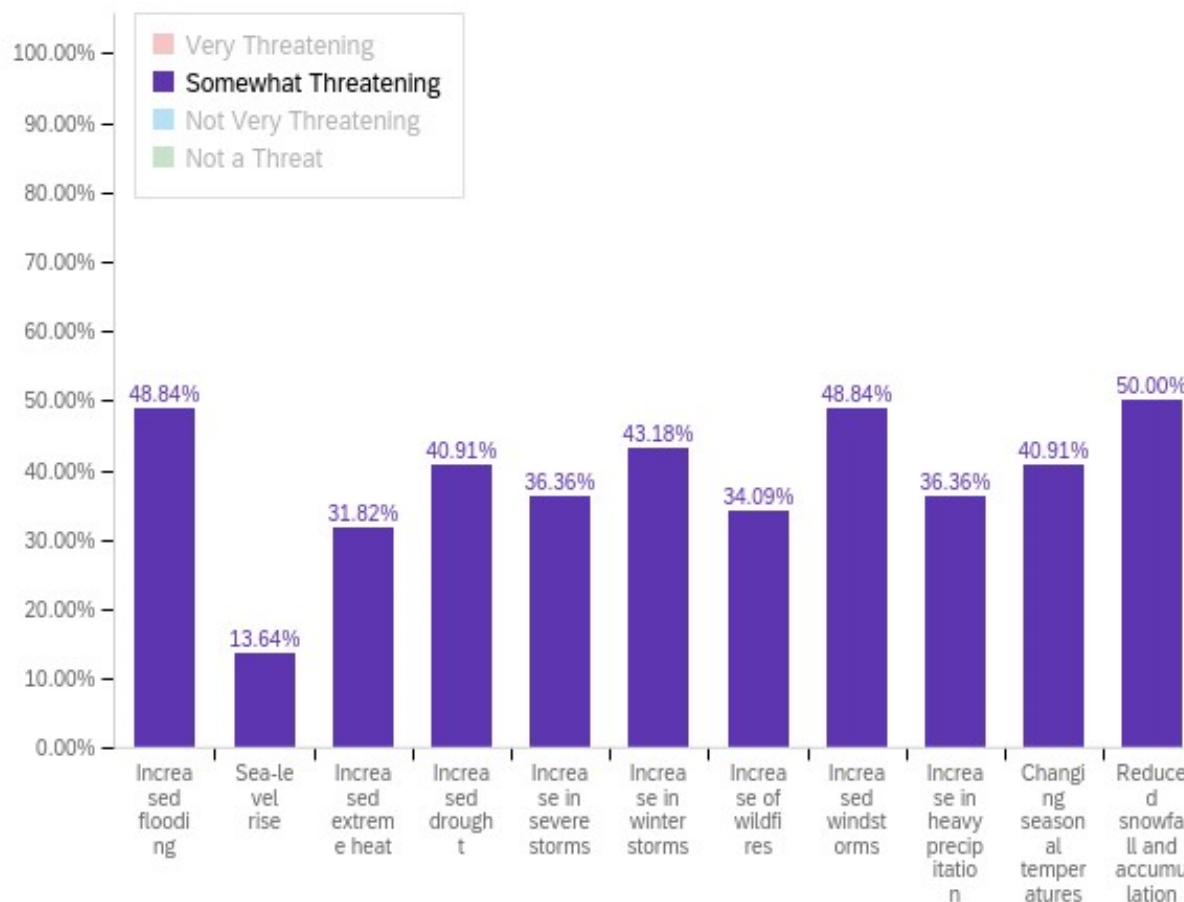
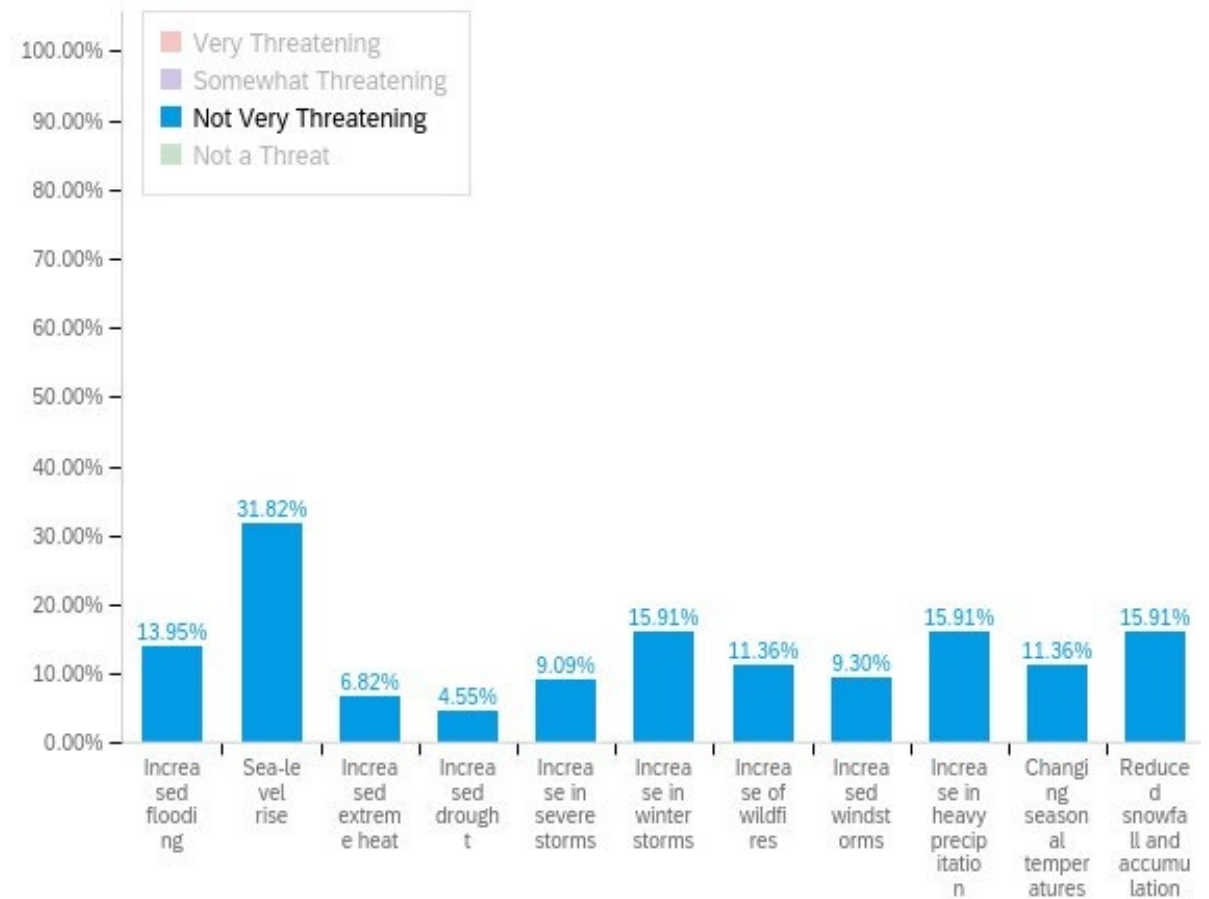
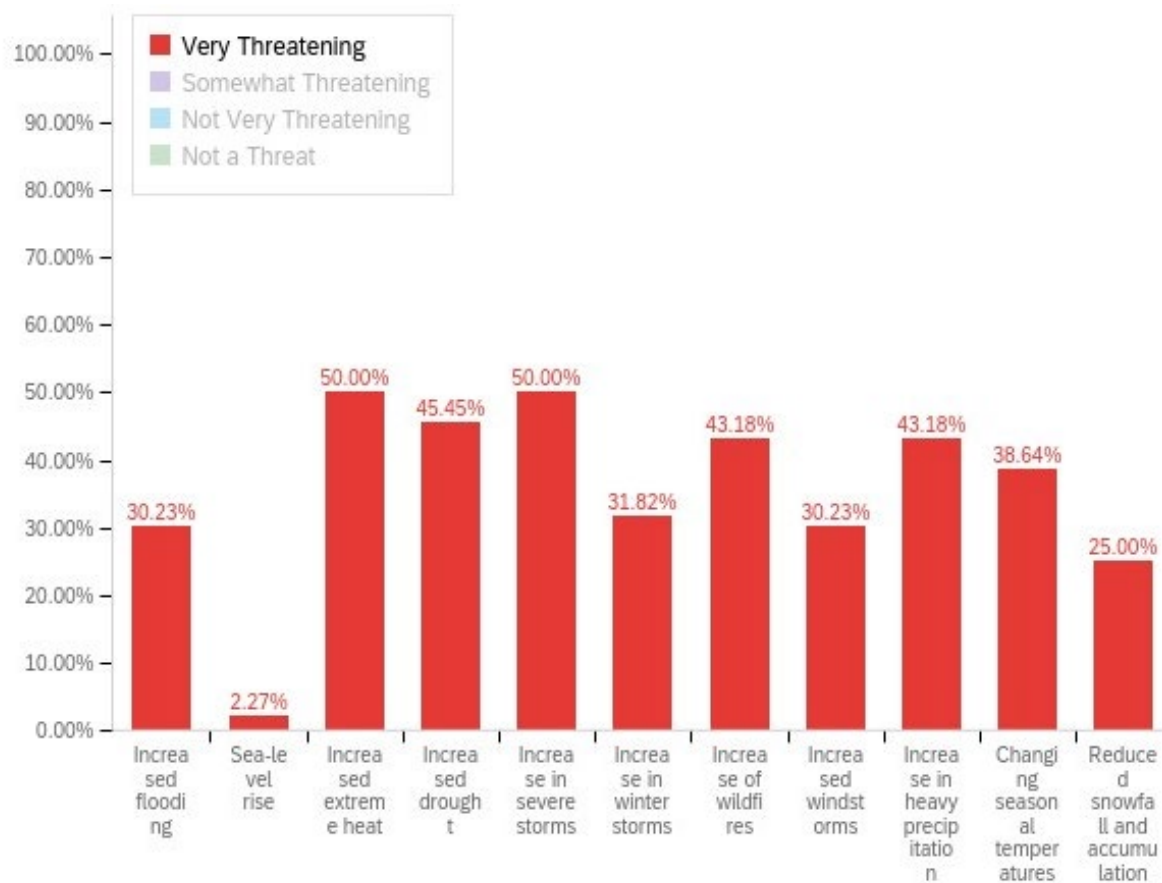
Appendix E
Columbia County CARP

Vulnerability Assessment and Story of Place
Public Survey Results
(Charts and Graphs)

Gallatin Results 1/4

How Threatening Each Potential Climate Hazard Might Be To Your Community

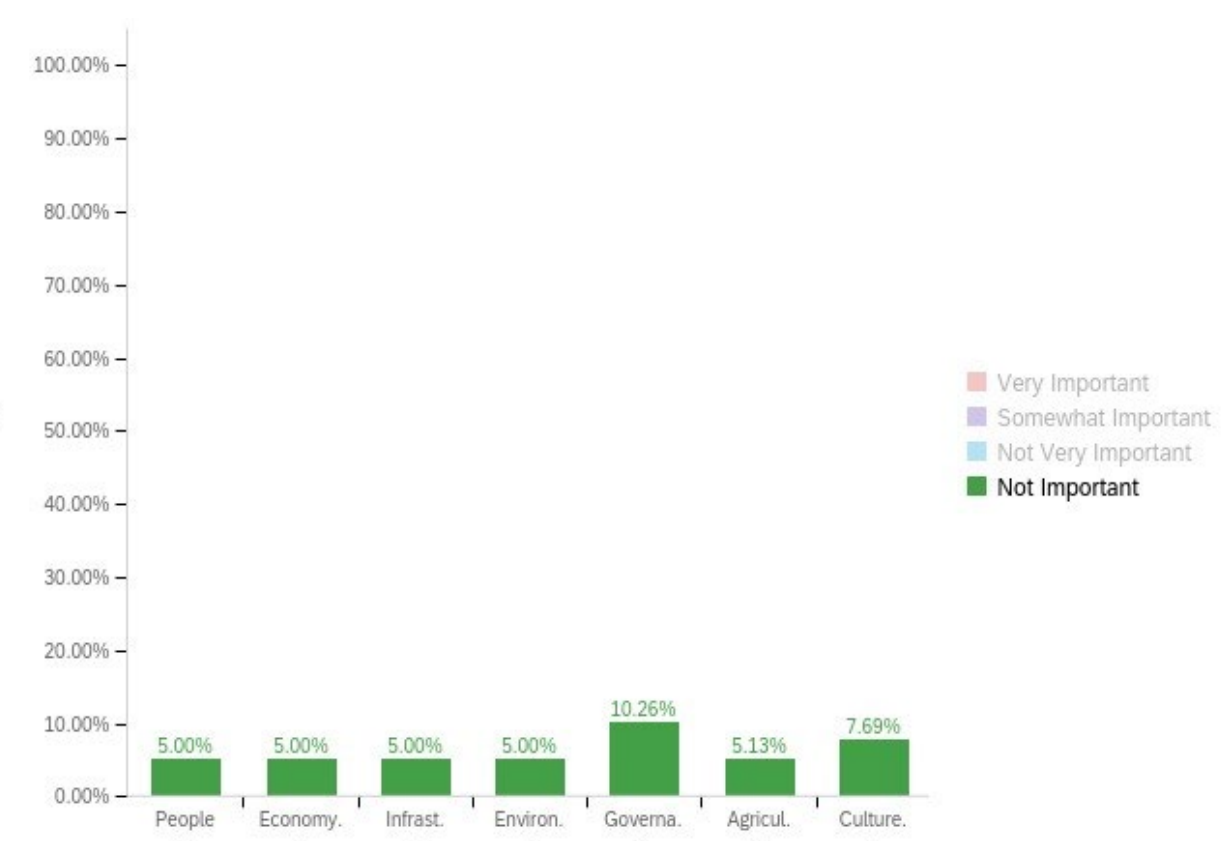
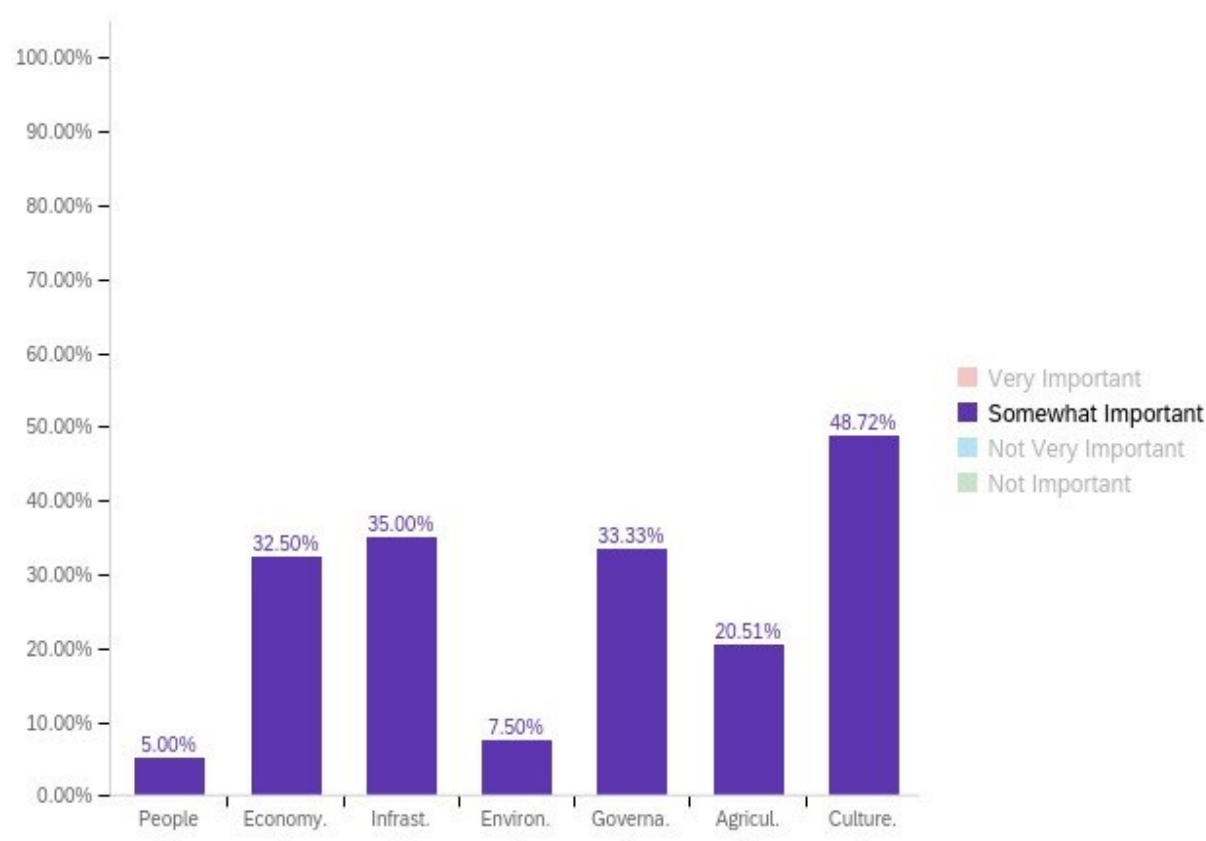
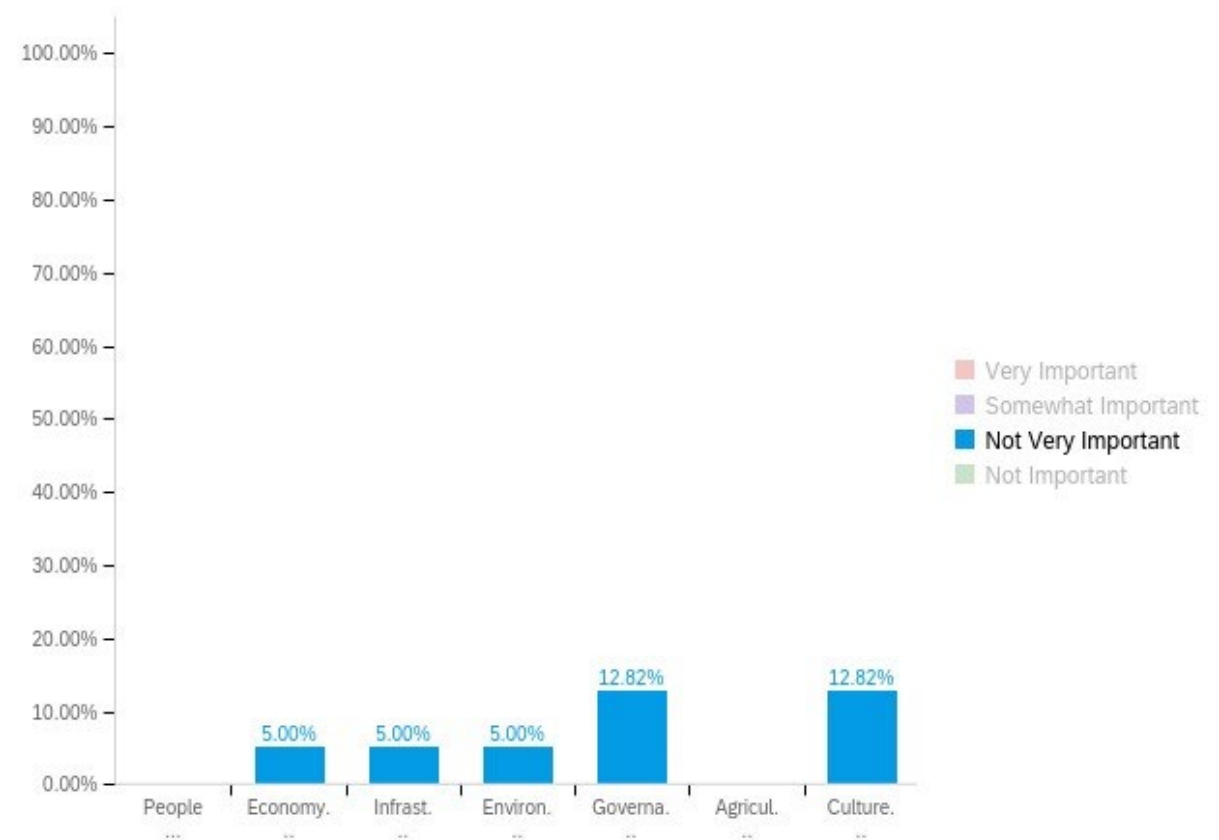
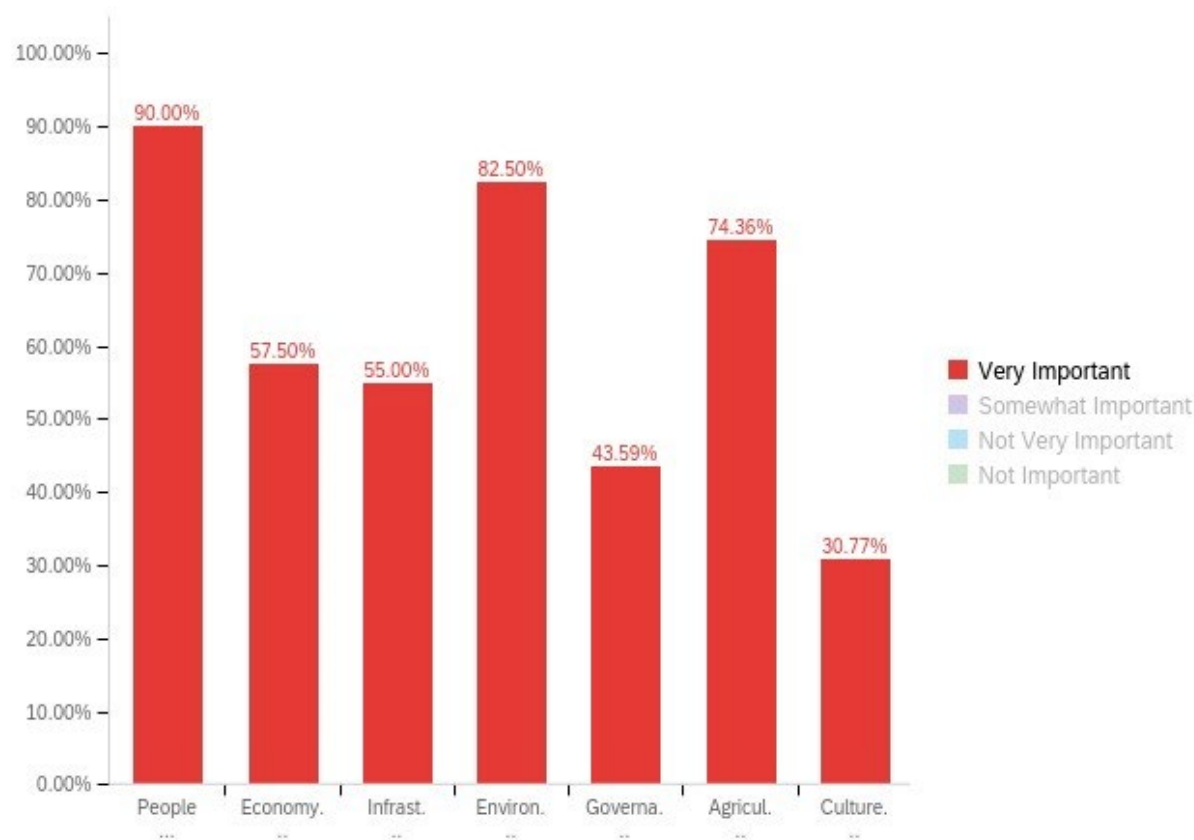
Climate Hazards	Very Threatening	Somewhat Threatening	Not Very Threatening	Not a Threat
Increase in severe storms	50.00%	36.36%	9.09%	4.55%
Increased extreme heat	50.00%	31.82%	6.82%	11.36%
Increased drought	45.45%	40.91%	4.55%	9.09%
Increase in heavy precipitation	43.18%	36.36%	15.91%	4.55%
Increase of wildfires	43.18%	34.09%	11.36%	11.36%
Changing seasonal temperatures	38.64%	40.91%	11.36%	9.09%
Increase in winter storms	31.82%	43.18%	15.91%	9.09%
Increased flooding	30.23%	48.84%	13.95%	6.98%
Increased windstorms	30.23%	48.84%	9.30%	11.63%
Reduced snowfall and accumulation	25.00%	50.00%	15.91%	9.09%
Sea-level rise	2.27%	13.64%	31.82%	52.27%



Gallatin Results 2/4

Community Assets That Are Important To Protect From The Impacts Of Extreme Weather Events And Climate Hazards

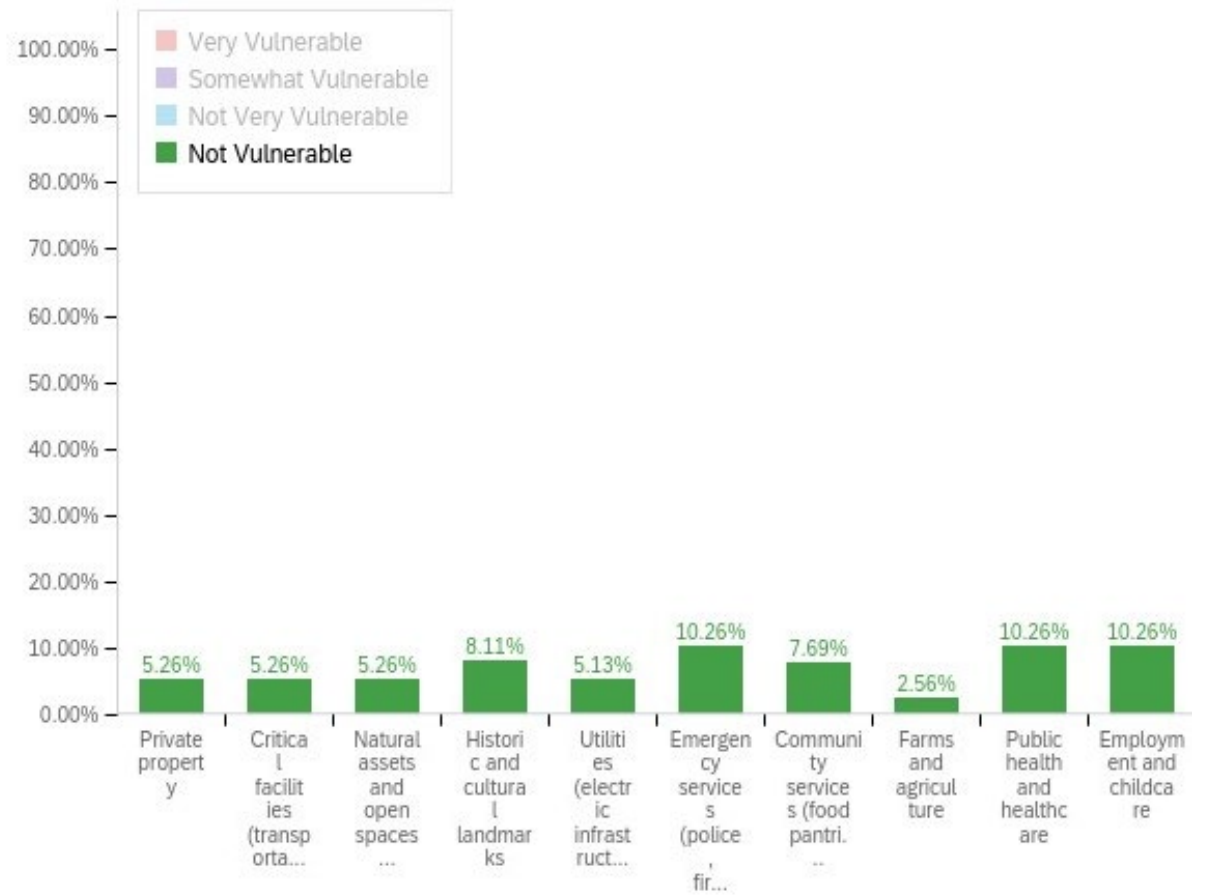
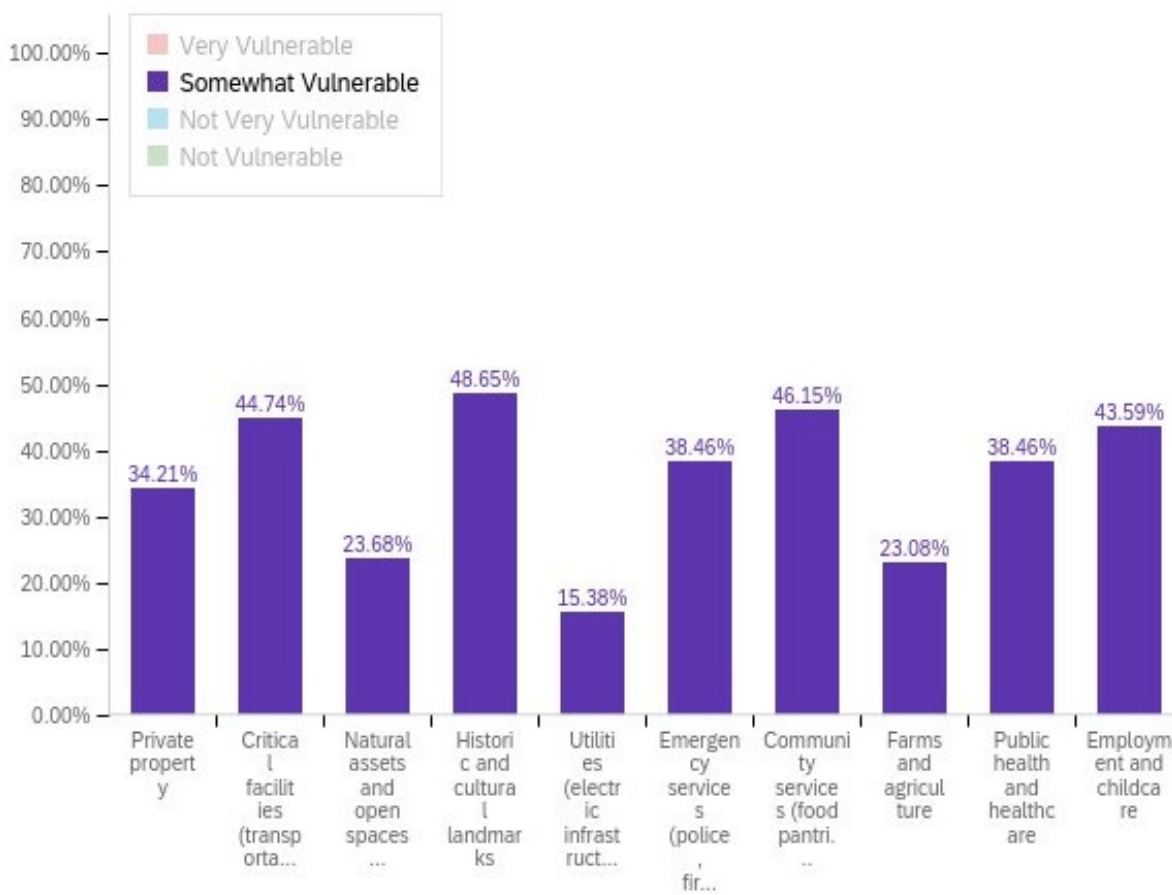
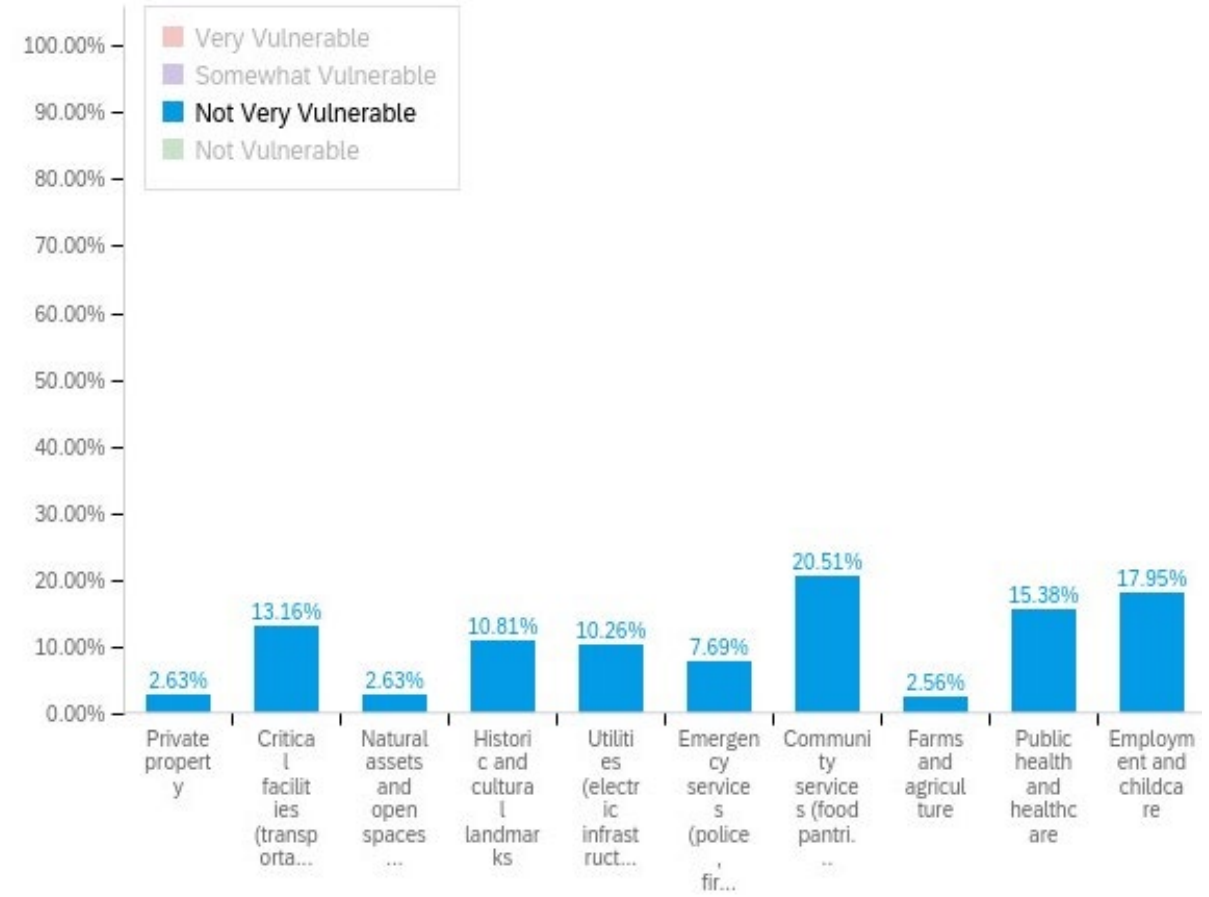
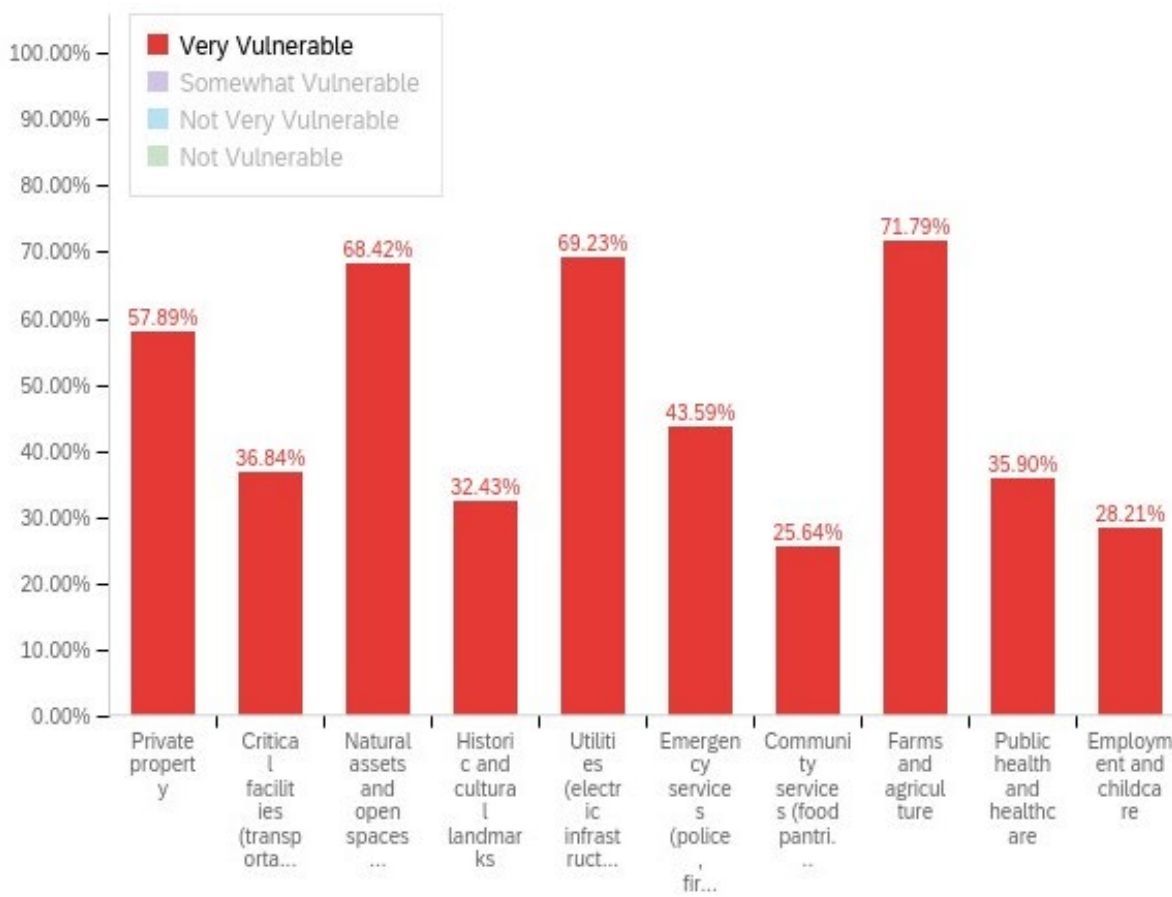
Community Assets	Very Important	Somewhat Important	Not Very Important	Not Important
People (loss of life, health, injuries)	90.00%	5.00%	0.00%	5.00%
Environment (damage or loss to forest, waterways, air quality, etc.)	82.50%	7.50%	5.00%	5.00%
Agricultural (damage or loss of farms, supply chain disruption, food security)	74.36%	20.51%	0.00%	5.13%
Economy (business interruptions/closures, job losses, energy disruptions, etc.)	57.50%	32.50%	5.00%	5.00%
Infrastructure (damage or loss of libraries, museums, historic properties, etc.)	55.00%	35.00%	5.00%	5.00%
Governance (maintain order and/or provide public amenities and services)	43.59%	33.33%	12.82%	10.26%
Culture (ability to maintain traditions, social networks, and support systems)	30.77%	48.72%	12.82%	7.69%



Gallatin Results 3/4

How Vulnerable Risk Categories Are To The Impacts Of Extreme Weather Events And Climate Hazards

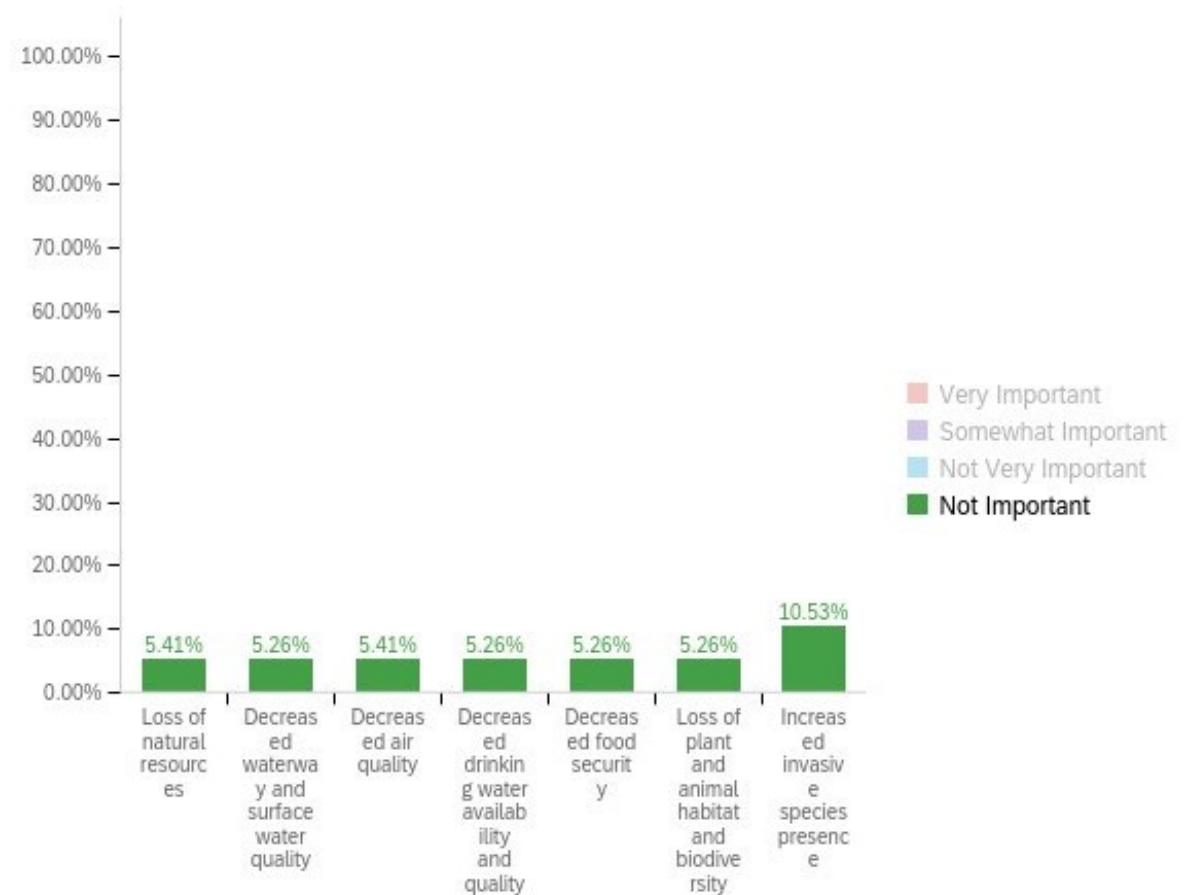
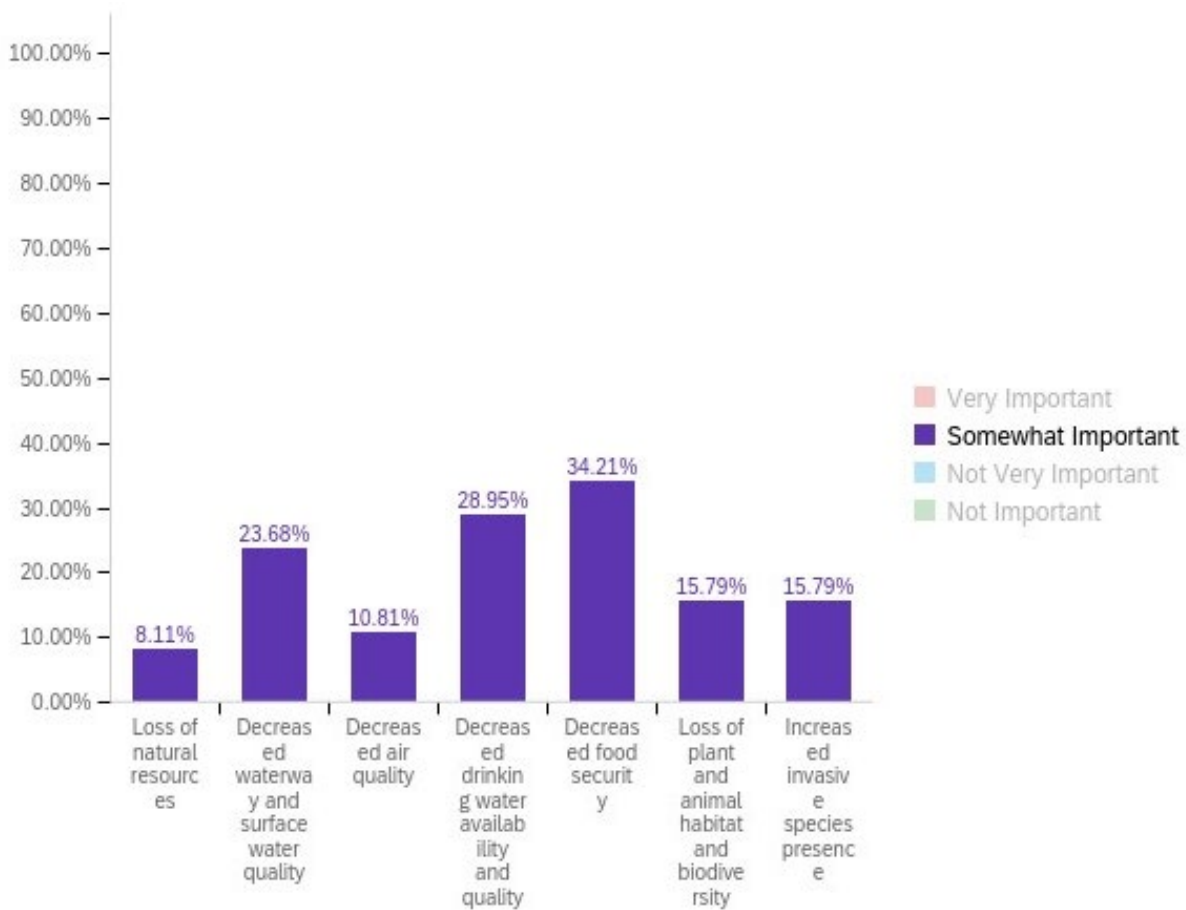
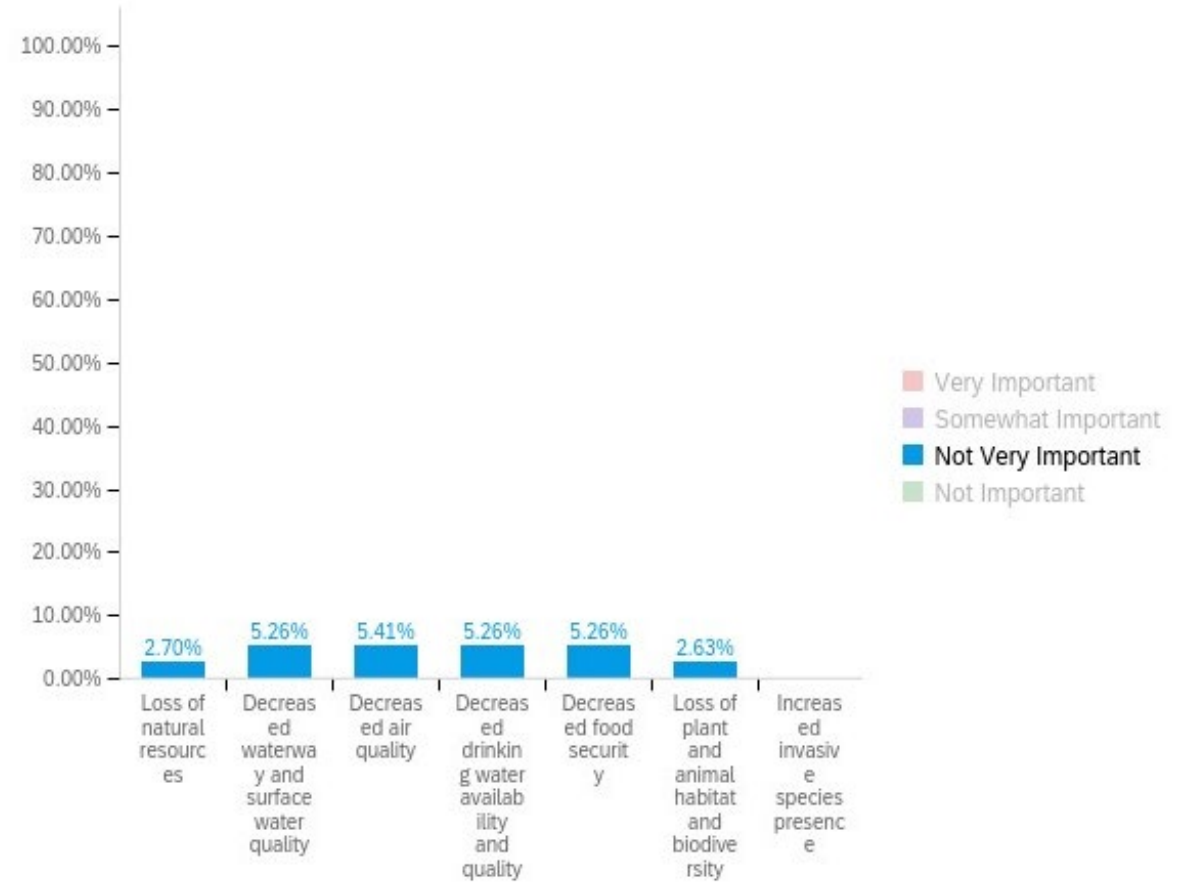
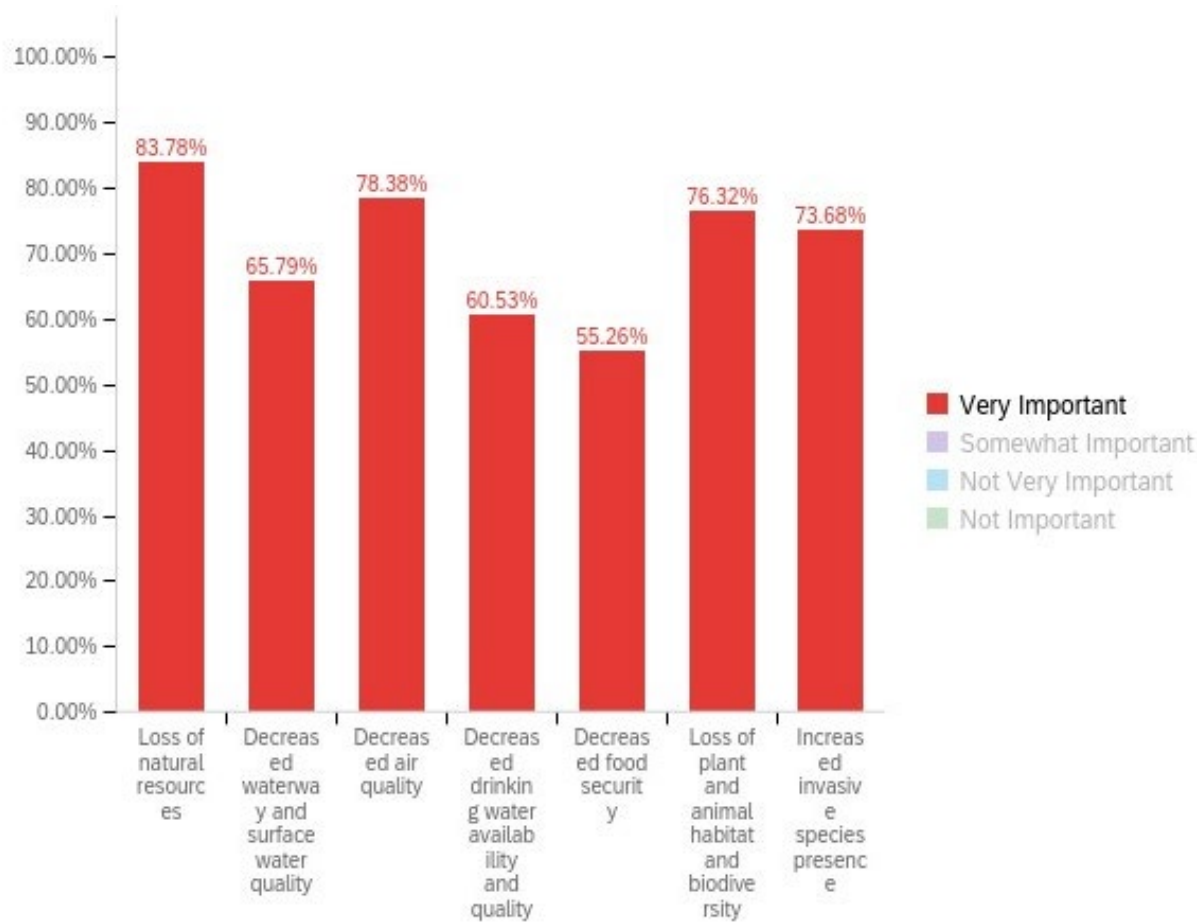
Vulnerable Risk	Very Threatening	Somewhat Threatening	Not Very Threatening	Not a Threat
Farms and agriculture	71.79%	23.08%	2.56%	2.56%
Utilities (electric infrastructure, renewable energy, water/sewer)	69.23%	15.38%	10.26%	5.13%
Natural assets and open spaces (streams, wetlands, beaches, etc.)	68.42%	23.68%	2.63%	5.26%
Private property	57.89%	34.21%	2.63%	5.26%
Emergency services (police, fire, etc.)	43.59%	38.46%	7.69%	10.26%
Critical facilities (transportation, communications, shelters, etc.)	36.84%	44.74%	13.16%	5.26%
Public health and healthcare	35.90%	38.46%	15.38%	10.26%
Historic and cultural landmarks	32.43%	48.65%	10.81%	8.11%
Employment and childcare	28.21%	43.59%	17.95%	10.26%
Community services (food pantries, libraries, public agencies)	25.64%	46.15%	20.51%	7.69%



Gallatin Results 4/4

How Important Potential Impacts Are To Your Community

Potential Impacts	Very Important	Somewhat Important	Not Very Important	Not Important
Loss of natural resources	83.78%	8.11%	2.70%	5.41%
Decreased air quality	78.38%	10.81%	5.41%	5.41%
Loss of plant and animal habitat and biodiversity	76.32%	15.79%	2.63%	5.26%
Increased invasive species presence	73.68%	15.79%	0.00%	10.53%
Decreased waterway and surface water quality	65.79%	23.68%	5.26%	5.26%
Decreased drinking water availability and quality	60.53%	28.95%	5.26%	5.26%
Decreased food security	55.26%	34.21%	5.26%	5.26%



Appendix F
Columbia County CARP

Vulnerability Assessment and Story of Place
Workshop Results
(Map)



Columbia County Climate Adaptation and Resiliency Plan

This map was produced for a workshop exercise. It is not meant to be used to accurately locate features in the field. It is not a survey map.

The data shown was obtained from a variety of sources including but not limited to: Columbia County Real Property Tax Service, Columbia County Emergency Management Services, NYS DEC, NYS DOT, NYS Geospatial Services, Scenic Hudson, US Federal Emergency Management Agency, and USDA Natural Resources Inventory



Columbia County
Planning Department

Vulnerability Workshop Ancram & Gallatin

-
-
- Town/Village/City Halls
- Firehouses
- Water
- Streams
- NYS Regulated Wetlands
- Federal Wetlands (NWI)
- Current Flood Risk
- Future Flood Risk
- State Owned Lands
- Conservation Areas and Preserved Properties

Appendix G
Columbia County CARP

Adaptation and Vision Public Survey

Columbia County and 17 of its municipalities are creating Climate Change Adaptation and Resilience Plans

These plans will establish a vision and set of strategies to improve your community's resilience to climate change based on its vulnerabilities.

Climate Resilience Vision

A climate resilience vision is a brief, inspirational statement that investigates the future and creates a mental image of the ideal state that a community wants to achieve. The vision should reflect the community's aspirations and values as they relate to adapting to climate change and building local resilience. It should serve to unify the community, guide community climate adaptation actions, and remain viable under various possible future climate change conditions.

- Which town/village/city do you live in? _____
- What does a climate-resilient community look like to you?

Adaptation Strategies

Extreme storms, extreme heat, drought, flooding, and heavy precipitation are all climate hazards that Columbia County is projected to face in the coming years. Below are potential adaptation actions that the county could take to adapt to these conditions. Please indicate whether you think these actions should be a high priority, medium priority, low priority, or not a priority in your community by checking the corresponding box.

Emergency Communication and Management	High Priority	Medium Priority	Low Priority	Not a Priority
1. Implement and promote an emergency communication and warning system				
2. Organize neighborhood networks for emergency preparedness, planning, and training				
3. Review, revise, or create an emergency plan or evacuation plan				
Public Outreach and Social Resilience	High Priority	Medium Priority	Low Priority	Not a Priority
1. Invite agencies and experts to give public presentations on flood preparedness				
2. Create a Flood Guide for residents and businesses				
3. Post info on the municipal website and social media accounts				
4. Collaborate with other municipalities				
5. Encourage homeowners, renters, and businesses to purchase public or private flood insurance				
6. Install high water mark signs on the waterfront				
7. Mitigate green gentrification by protecting existing families and renters				
Municipal Planning and Operations	High Priority	Medium Priority	Low Priority	Not a Priority
1. Establish or assign a resilience committee				
2. Participate in your County's Multi-Hazard Mitigation Plan updates to include climate risks and resiliency projects				
3. Revisit and update vulnerability assessment				
4. Train municipal staff to be able to incorporate flooding, coastal hazards, sea-level rise, etc. into their daily work, as well as in the use of planning tools for these purposes"				
5. Become a Certified NYS Climate Smart Community				
6. Conduct a risk and engineering review of municipal infrastructure to analyze adaptation needs				

7. Consider applying for annual NYS grants				
8. Protect non-homeowning residents through rent stability regulations				
9. Incorporate resilience into future Comprehensive Plan updates				
10. Create or update your Local Waterfront Revitalization Plan to incorporate resilience				
11. Work with local utilities, in particular electric, gas, water, sewer, and telecommunications, to improve resilience				
12. Incorporate resilience into asset management or capital improvement plan				
13. Create a heat emergency plan				
14. Conserve public river access over the long term				
15. Reduce municipal greenhouse gas emissions and contributions to sea-level rise with a Climate Action Plan				
16. Encourage shade structures in public areas for cooling				
Zoning & Coding	High Priority	Medium Priority	Low Priority	Not a Priority
1. Create or update a waterfront or flood hazard zoning overlay				
2. Adopt innovative waterfront zoning				
3. Protect the Tidal Wetland Pathways				
4. Create a buyout plan for vulnerable properties				
5. Exceed NY's 2 feet freeboard requirement				
6. Require green infrastructure for stormwater management				
7. Require sustainable shorelines				
8. Require home-owners in flood-prone areas to include additional flood-proofing and adaptive measures for new substantially damaged or improved structures above the FEMA standard				
9. Extend the Flood Hazard Overlay District to include future sea-level rise				
10. Require proposals for new development in the Flood Hazard Overlay District to take flood risk into account				
11. Ensure opportunities exist for open space and recreation over the long term				
12. Relocations and buy-out programs, identify key properties and assess feasibility. These recommendations are located in the site-specific recs and reference-specific locations."				
13. Regulate floating/potentially floating assets (e.g. boats, docks, tanks) that may pose a hazard during floods				

- Please add any comments for a particular section and/or action here:



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Appendix H
Columbia County CARP

Exploratory Future Scenario
Planning Description

Exploratory Scenario Planning Exercise

In the four smaller breakout groups following the County Level Vision Exercise, communities were led through an Exploratory Scenario Planning Exercise that explored what a future “world” might look like given two critical uncertainties or hazards. An exploratory scenario planning (XSP) process in general helps participants envision and define multiple possible futures, prepare for uncertainties, pursue an overarching vision, gather input from diverse stakeholders and data, and brainstorm strategies that work for all future scenarios while providing framework to address diverse viewpoints and differing assumptions.

For this workshop, a standard XSP process was abridged to focus on one possible future versus multiple which is further explained within this section. A two-by-two matrix (see figure below) was first created to include the two hazards or critical uncertainties that each municipality voted on at the end of the first workshop. These two hazards were labeled on the axes of their two-by-two matrix thus creating four “worlds” where the hazards were either both increasing, both decreasing, or worlds where one hazard was decreasing while the other one was increasing. Due to time and group size, the section of the matrix or “world” that was focused on by all groups was one where both hazards were increasing. To set the stage for the exercise, each breakout group, individual, or municipality (depending on how the group chose to work) read a brief narrative describing Columbia County. They then crafted a fill-in-the-blank worksheet (see Appendix A) keeping in mind the “world” where the two hazards are both increasing on the matrix, a timeline of seven years in the future, and a focus question of “How might we create a more adaptive and resilient community to climate change?” Facilitators had the additional option of posing the following prompt questions:

- What global trends impact this world the most?
- What does life in 2030 look like in this world?
- What role would (government/ private sector/nonprofits) need to play in this world?
- What “title” would you give to your world? How would you describe what’s happening in it?

The purpose of this exercise was to break participants out of their normal thinking, therefore worksheets used during this exercise were for inspiration only and not for results.

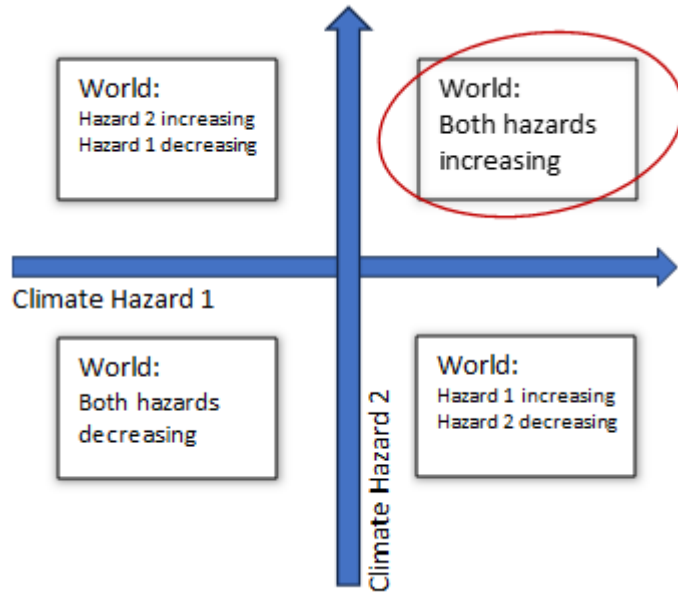


Figure 1: XSP 2x2 Matrix (Created by Lindsey Strehlau-Howay of CCE Columbia-Greene)

Appendix I
Columbia County CARP

Exploratory Future Scenario Planning &
Vision Development

Worksheets #1, #2 and #3

Exploratory Scenario Planning Worksheet

Exploratory Scenario Planning is a tool for collectively envisioning potential and uncertain futures. Multi-stakeholder platforms in particular are critical spaces where actors can break out of silos, share perspectives, and build shared understanding.

Read through the narrative below of life in Columbia County around 2030. Consider how increasing hazards will influence all aspects of life and environment at this time. Keep in mind the focal question as you work with your group to fill in the blanks at the bottom and on the back of the worksheet.

Focal Question

How might we create a more adaptive and resilient community to climate change?

Timeline

7 years (2030)

Narrative Template

Columbia County is a part of the Hudson Valley region in New York State, is home to just over 60,000 people, borders the Hudson River, and is directly north of New York City to which it is a foodshed. The County has distinctive landscapes and biodiverse environments across the area, including the Hudson River Tidal Wetlands, the Taconic Ridge, and the Harlem Valley. Columbia County features over 50 public heritage sites, direct train access to the Capital region, Hudson Valley and NYC, multiple conservation and recreation areas, and diverse characteristics amongst its 22 municipalities from extremely rural to a bustling city, attracting tourists and diverse residents. The County also has a history in Western agriculture and is notable for its large number of small farms and CSAs.

In general, the climate is humid continental, however, latitude, elevation, and proximity to the Hudson River make large differences in local climates within the County. Snowfall patterns have been changing noticeably over the past 20 years. Hurricanes and storms (wind, ice, snow, rain) have become more frequent and intense, producing record setting floods, heavy downpours, and significant damage. Seasonality has also continued to shift and summer months have produced record setting heat waves and variability in rainfall, threatening drought conditions.

In 2030, pressures from climate change are pushing Columbia County and its municipalities into an uncertain future. All three of the biodiverse areas in the County are in peril from the weather-related extremes as well as invasive species. Increasing costs and aging infrastructures are straining municipalities and residents' financial capacity to recover from storms. Key industries in the County are impacted and threatened by the climate crisis including agriculture and tourism. Demand on ground water supplies continues to rise due to rain and snowfall irregularity and the increase of in-migration from NYC and outside states. Health issues from increasing temperatures, insect-borne diseases, and decreased air quality from wildfires also climb. Rising land, housing, rental, and food prices are affecting more residents' ability to live, work, and contribute to their local area while historically marginalized populations as well as an aging population continue to remain vulnerable.

Exploratory Scenario Planning Worksheet

In 2030, [critical uncertainty 1] _____ increases and [critical uncertainty 2] _____ increases.

The rise/collapse of the _____ could not have come at a better/worse time for [PLACE] _____. Residents feel impacts in _____.

The impact on the local socioeconomic systems is _____ . Access to _____ is now _____.

Large businesses continue to/have changed to _____ , while small businesses continue to/have changed to _____ .

The impact on consumers is _____ .

The environment and agricultural sectors have also been impacted heavily. Ecosystem impacts have been _____ and agriculture has experienced an increase/decline in _____ .

New government policy is introduced to _____
_____.

Major policy *wins/failures* have been _____
_____.

The effect on residents is _____
_____.

Civil society and NGOs are directing their attention and efforts to address _____
_____.

They *are/are not* able to _____
_____.

Create a title for your world: _____

Local Vision Development Worksheet

A vision is a brief, inspirational statement that investigates the future and creates a mental image of the ideal state that a community wants to achieve. The vision should reflect the community's aspirations and values as they relate to adapting to climate change and building local resilience. It should serve to unify the community, guide community climate adaptation actions and remain viable under various possible future climate change conditions.

Review the sample vision statements and survey question word clouds provided. Consider the questions, talking points, key values and actions we just discussed. Work with the group to develop phrases that reflect a future vision for your community in each of the following categories.

Infrastructure

Society

Environmental

Economic

In general, resilient communities are communities that take care of their critical systems that support life, protect clean water, air and the environment, and promote economic vitality in an equitable way. Approaches that enhance community resilience include: long term thinking and planning, collaboration, diversity of strategies, decentralized efforts, flexibility, and redundancy. It is simultaneously an opportunity to stop reacting to devastating storms and begin planning for them – to avoid costs of the future.

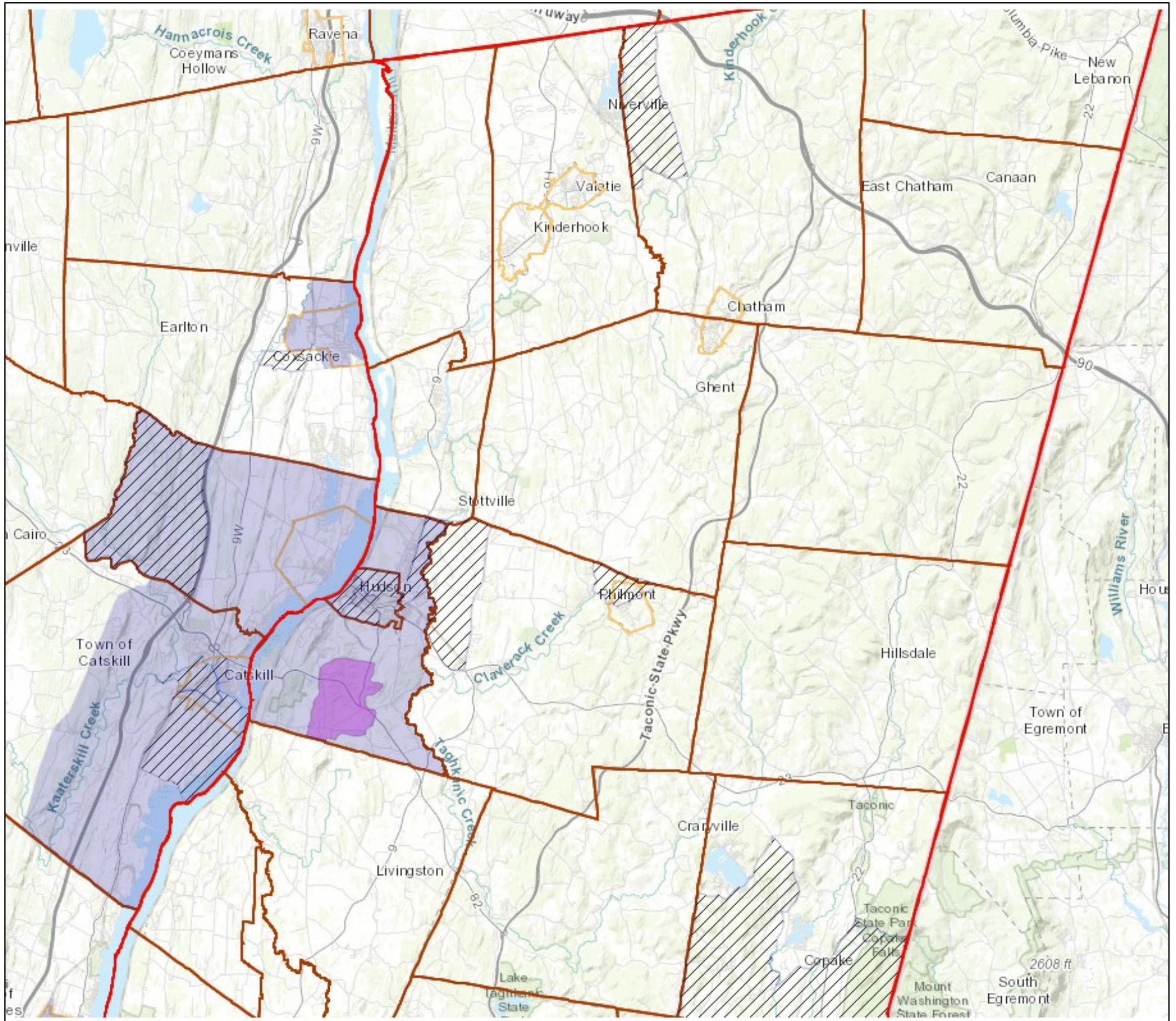
Appendix J
Columbia County CARP

**Diversity, Equity, Justice and
Inclusion Map**

Diversity, Equity and Justice and Inclusion

Columbia County

(Zoomed in to NYS DAC or EJ areas)



▨ Potential Environmental Justice Areas

■ Disadvantaged Communities (DAC)

Environmentally Sensitive Areas

■ Critical Environmental Areas

Reference Layers

▭ Towns

▭ Villages

▭ County Boundaries

Appendix K
Columbia County CARP

Adaptation Vision and Strategies Examples

Visions and Principles for a Climate Resilient Athens

The Village of Athens envisions a community that strives for resilience while maintaining the historic, “small town”, and waterfront characteristics that make it unique. A resilient Athens would be prepared for climate hazards that threaten these features. The following principles, developed with public input in mind, serve to conserve, promote, and enhance resilience in the community.

A future Climate resilient Athens would:

1. Be prepared for future climate hazards
2. Mitigate and adapt to climate change
3. Protect air and water quality
4. Maintain a resilient Hudson River Waterfront that serves community needs
5. Invest in resilient infrastructure and services
6. Foster the sustainable use of natural resources
7. Conserve open space and scenic views
8. Encourage alternative transportation
9. Increase energy efficiency and use of renewable energy
10. Encourage local food systems

Visions and Principles for a Sustainable, Resilient Beacon

Residents from the City of Beacon envision a community that is not only resilient to climate change but is also socially and economically resilient. A resilient and sustainable Beacon would preserve and enhance social, economic, and natural characteristics of the City while preparing for climate hazards that threaten these features. When participants were asked to complete these sentences, “A future climate-resilient Beacon would...” and “A future sustainable Beacon would...”, answers for both questions spanned similar themes, which were translated into the following guiding principles:

A future climate-resilient and sustainable Beacon would:

- 1) Be socially resilient
- 2) Invest in resilient infrastructure
- 3) Have an informed and educated populace and municipal staff
- 4) Be prepared for future climate hazards
- 5) Encourage local food and business
- 6) Mitigate and adapt to climate change
- 7) Encourage alternative transportation
- 8) Invest in renewable energy
- 9) Preserve natural resources
- 10) Have a resilient waterfront

“A future flood-resilient waterfront in Kingston would:

- ▶ *allow for Kingston to use the waterfront for economic revitalization.”*
- ▶ *protect public health, avoid sewage spills and sewage treatment plant downtime.”*
- ▶ *create a peaceful, safe, sound environment for the Rondout community as well as the waterfront businesses.”*
- ▶ *[be] willing to make the harder more expensive decision if it’s better in the long run.”*
- ▶ *[be] a wash and wear waterfront.”*
- ▶ *be an inspiration to people everywhere.”*

<p style="text-align: center;">Climate Adaptation Strategies <i>A checklist for your community's Climate Adaptation & Resilience Plan</i> *bold items are strongly encouraged for your plan</p>	
Action	
<u>Emergency communication + management</u>	Implement and promote an emergency communication and warning system
	Organize neighborhood networks for emergency preparedness, planning, and training
	Review, revise or create an emergency plan or evacuation plan
<u>Public outreach + social resilience</u>	Invite agencies and experts to give public presentations on flood preparedness
	Flood guide for residents + businesses
	Post info on muni website and social accounts
	Collaborate with other municipalities
	Encourage homeowners, renters and businesses to purchase public or private flood insurance
	Install high water mark signs in waterfront
	Mitigate green gentrification by protecting existing families and renters
<u>Municipal planning + operations</u>	Establish or assign resilience committee
	Participate in your County's Multi-Hazard Mitigation Plan updates to include climate risks and resiliency projects
	Revisit and update vulnerability assessment
	“Train municipal staff to be able to incorporate flooding, coastal hazards, sea-level rise, etc. into their daily work, as well as in the use of planning tools for these purposes”
	Become a Certified NYS Climate Smart community
	“Conduct a risk and engineering review of municipal infrastructure to analyze adaptation needs”
	Consider applying for annual NYS grants
	Protect non-homeowning residents through rent stability regulations
	Incorporate resilience into future Comprehensive Plan updates
	Create or update your Local Waterfront Revitalization Plan to incorporate resilience
	“Work with local utilities, in particular electric, gas, water, sewer, and telecommunications, to improve resilience”
	Incorporate resilience into asset management or capital improvement plan
	Create a heat emergency plan
	Conserve public river access over the long term
	Reduce municipal greenhouse gas emissions and contributions to sea-level rise with a Climate Action Plan
	Encourage shade structures in public areas for cooling
<u>Zoning + code</u>	Create or update a waterfront or flood hazard zoning overlay
	Adopt innovative waterfront zoning
	Protect the Tidal Wetland Pathways
	Create a buyout plan
	Exceed NY’s 2 feet freeboard
	Require green infrastructure for storm water management
	Require sustainable shorelines
	“require home-owners in flood-prone areas to include additional flood-proofing and adaptive measure for new substantially damaged or improved structures above the FEMA standard”
	Extend the Flood Hazard Overlay District to include future sea-level rise
	“require proposals for new development in the Flood Hazard Overlay District take flood risk into account”
	“Ensure opportunities exist for open space and recreation over the long term” ..(NRI -> OSP -> land trust/community preservation fund) .
	“Relocations and buy-out programs, identify key properties, assess feasibility. These recommendations are located in the site specific recs and reference specific locations.”
	Regulate floating/potentially floating assets (e.g. boats, docks, tanks) that may pose a hazard during flood events

Appendix L
Columbia County CARP

Potential Funding for Climate Adaptation Strategies

Potential Funding for Climate Adaptation Strategies

Eastern Brook Trout Joint Venture: [Brook Trout Project](#)

Federal Transit Administration: [Buses and Bus Facilities Program](#)

Federal Transit Administration: [Low or No Emission Program](#)

FEMA: [Hazard Mitigation Assistance Pre-Hazard Mitigation Assistance BRIC Program](#)

Hudson River Valley Greenway: [Hudson River Valley Greenway Grant Program](#)

IRS: [Elective Pay Credits Portal](#)

Northern Boarder Regional Commission: [Catalyst Program](#)

NY ConnectALL: [Municipal Infrastructure Program](#)

NY Empire State Development: [Mid-Hudson Momentum Fund](#)

NYS DEC : [Tidal Hudson River Communities](#)

NYS DEC: [Climate Smart Communities Grant](#)

NYS DEC: [Non-Agricultural Nonpoint Source Planning Grant](#)

NYS DEC: [Community Waterfront Resiliency Design and Permitting](#)

NYS DEC: [Tributary Restoration for Culverts and Road Stream Crossings](#)

NYS DEC: [Hudson River Estuary Program, Local Stewardship Planning Grants](#)

NYS DEC: [Trees for Tribs](#)

NYS DEC: [Water Quality Improvement Project \(WQIP\)](#)

NYS DOS: [Local Waterfront Revitalization Program](#)

NYS DOT: [BRIDGE NY program](#)

NYS DOT: [CHIPs: Consolidated Highway Improvement Program](#)

NYS EFC: [Intermunicipal Grant \(IMG\)](#)

NYS EFC: [Water Infrastructure Improvement \(WIIA\) Grant](#)

NYS EFC: [Community Assistance Teams](#)

NYS EFC: [Clean Water State Revolving Fund](#)

NYS EFC: [Wastewater Infrastructure Engineering Planning Grant \(WIEP\)](#)

NYS EFC : [Green Innovation Grant Program](#)

NYS OPRHP [Community Development Block Grant Program](#)

NYS Pollution Prevention Institute: [Community Grants Program](#)

NYSERDA: [New York Truck Voucher Incentive Program](#)

NYSERDA: [NY School Bus Incentive Program](#)

NYSERDA: [School Bus Charging Voucher Applications](#)

NYSERDA: [Affordable Solar and Storage Predevelopment and Technical Assistance](#)

NYSERDA: [Charge Ready NY 2.0](#)

NYSERDA: [Clean Green Schools](#)

NYSERDA: [Clean Green Schools Initiative - Track I](#)

NYSERDA: [Just Transition Site Reuse Planning Program](#)

NYSERDA: [NYS Clean Energy Internship Program](#)

NYSERDA: [Clean Energy Communities \(CEC\) Program](#)

Trout Unlimited [Embrace a Stream \(EAS\)](#)

US Department of Energy: [Federal Low-Income Communities Bonus Credit Program](#)

US Department of Energy: [Assistance for the Adoption of Zero Building Energy Codes](#)

US Department of Energy: [Electronics Scrap Recycling Advancement Prize](#)

US Department of Energy: [Federal Low-Income Communities Bonus Credit Program](#)

US Dept. of Commerce EDA: [FY 2023 Disaster Supplemental Grant Program](#)

US Dept. of Commerce EDA: [FY 2021 - 2023 Economic Development Research and National Technical Assistance](#)

US Dept. of Commerce EDA: [Public Works and Economic Adjustment Assistance Programs](#)

US Dept. of Transportation: [Bridge Investment Program – Planning and Bridge Project Grants](#)

US Dept. of Transportation: [Capital Investment Grants \(CIG\) Program - Small Starts](#)

US Dept. of Transportation: [Congestion Mitigation and Air Quality \(CMAQ\) Improvement Program](#)

US Dept. of Transportation: [Safe Streets and Roads for All – Planning and Demonstration Grants](#)

US EPA: [Climate Pollution Reduction Grants – Implementation Grants](#)

US EPA: [Grant Funding to Address Indoor Air Pollution at Schools](#)

US EPA: [IRA Community Change Grants Program](#)

US HUD [Community Development Block Grant Program](#)