

Town of Hyde Park & City of Poughkeepsie Community Resilience Building Workshop



Summary of Findings
October 2021

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The Community Resilience Building Workshop was held on October 13, 2021.
This report was completed on December 27, 2021.



OVERVIEW

Extreme weather events and mounting natural hazards cause social, environmental, and infrastructure damages and losses. Municipalities, regional planning organizations, states, and federal agencies will need to increase their resiliency and adapt to these conditions if they are to avoid damages today and into the future. For communities in the Hudson Valley, this need is strikingly evident. Recent devastating events such as Tropical Storm Irene and Superstorm Sandy have reinforced this urgency and compelled leading communities to proactively plan and mitigate potential risks. Ultimately, leadership on climate resilience will reduce the exposure and vulnerability of citizens, infrastructure, and ecosystems, and will serve as a model for communities across the Hudson Valley, New York State, and the country.

In June 2019, the Hudson River Watershed Alliance approached municipal officials from the Hudson River Drinking Water Intermunicipal Council, or Hudson 7, to discuss and identify resilience needs relative to infrastructure, habitat restoration, and community resilience. A strategy was developed to incorporate recommendations from a planning and code review tool with assistance from Cornell Cooperative Extension Dutchess County (NYS Climate Smart Communities Climate Smart Resiliency Planning Tool, see below) with a process that identifies community assets and areas of risk and proposes initial adaptation strategies.

The Community Resilience Building (CRB) Workshop is a unique “anywhere at any scale” community-driven process (CommunityResilienceBuilding.com) that provides an appropriate platform to engage elected officials, municipal staff, and other key stakeholders from participating communities. This integrated planning process offers participating communities the opportunity to identify specific next steps for local policies, planning, and assets related to climate resilience. The purpose of this facilitated, multi-community workshop was to guide implementation of priority adaptation actions across the Town of Hyde Park and City of Poughkeepsie, with a focus on reducing the impacts of flooding.

A Community Resilience Building Workshop was held with representatives from both municipalities on October 13, 2021 online via Zoom. The workshop’s objectives were to:

- Define extreme weather and articulate local natural and climate-related hazards
- Identify existing and future strengths and vulnerabilities
- Develop prioritized actions for the municipalities and broader stakeholder networks
- Identify opportunities for the community to advance actions to reduce risk and increase resilience.

This report provides an overview of workshop discussion, including the top hazards, community strengths and concerns, and suggested actions to improve resilience to natural and climate-related hazards in the communities today and in the future. The summary of findings will benefit from further comments, feedback, and updates from workshop attendees and additional stakeholders alike. The participation of all those concerned in the communities will help continue and expand collective leadership on hazards and community resilience.



PROJECTED FUTURE CONDITIONS

Current climate and environmental conditions are projected to change in ways that will profoundly influence current interactions with natural resources. This includes the magnitude and intensity of storms and drought, rising sea level in the Hudson River and tidal tributaries, and other changes. Various platforms are available to better understand and evaluate how different climate change scenarios are likely to impact Hudson Valley communities, including:

- Scenic Hudson’s [Sea Level Rise Mapper](#)
- Columbia University’s [Hudson River Flood Decision Support Tool](#)
- New York State [Climate Change Science Clearinghouse](#)
- The Nature Conservancy’s [Natural Resource Navigator](#)

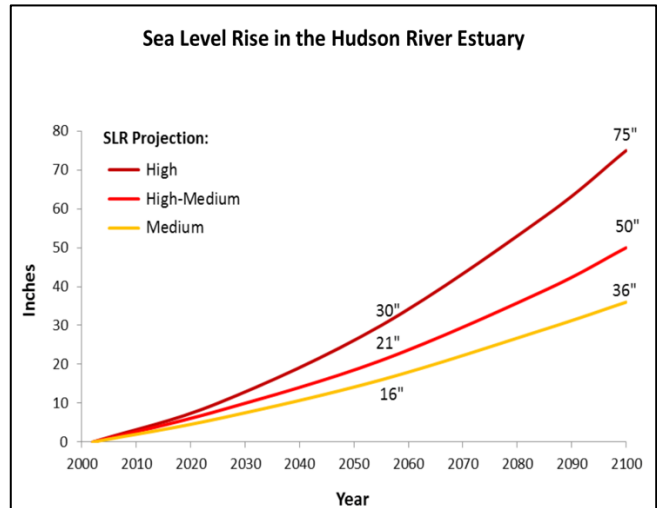


Figure 1. Projected sea level rise scenarios for the Hudson River Estuary.

As these and other tools indicate, there are many possible scenarios that could take place over the course of this century. The numerous factors, both global and local, that influence these outcomes make the extent of these scenarios difficult to predict. Thus, it is important to plan for a range of scenarios, as evidenced by [NYS's Community Risk and Resiliency Act](#).

For the purpose of adaptation planning, general trends and rough estimates can be used. For example, riverfront communities in the Mid-Hudson region should be preparing for a *minimum* of 3-6 feet of mean sea level rise by 2100. All communities in the Hudson Valley should consider the potential ramifications of:

- Increased severity and frequency of big storms, including
 - More winter precipitation (if rain, then more flooding, if snow, then 10” of snow or more per storm)
 - More flooding due to increased precipitation and increased development and impervious surfaces
- Hotter summers
- Increased frequency and length of heat waves and droughts
- Shorter, milder winters.

Details on the ranges of projected future conditions are available through the [New York State Water Resources Institute](#) and through [mapping tools](#).

To inform the Community Resilience Building workshop discussion, Cornell Cooperative Extension Dutchess County created maps of current and future flood risk in the Town of Hyde Park and City of Poughkeepsie.



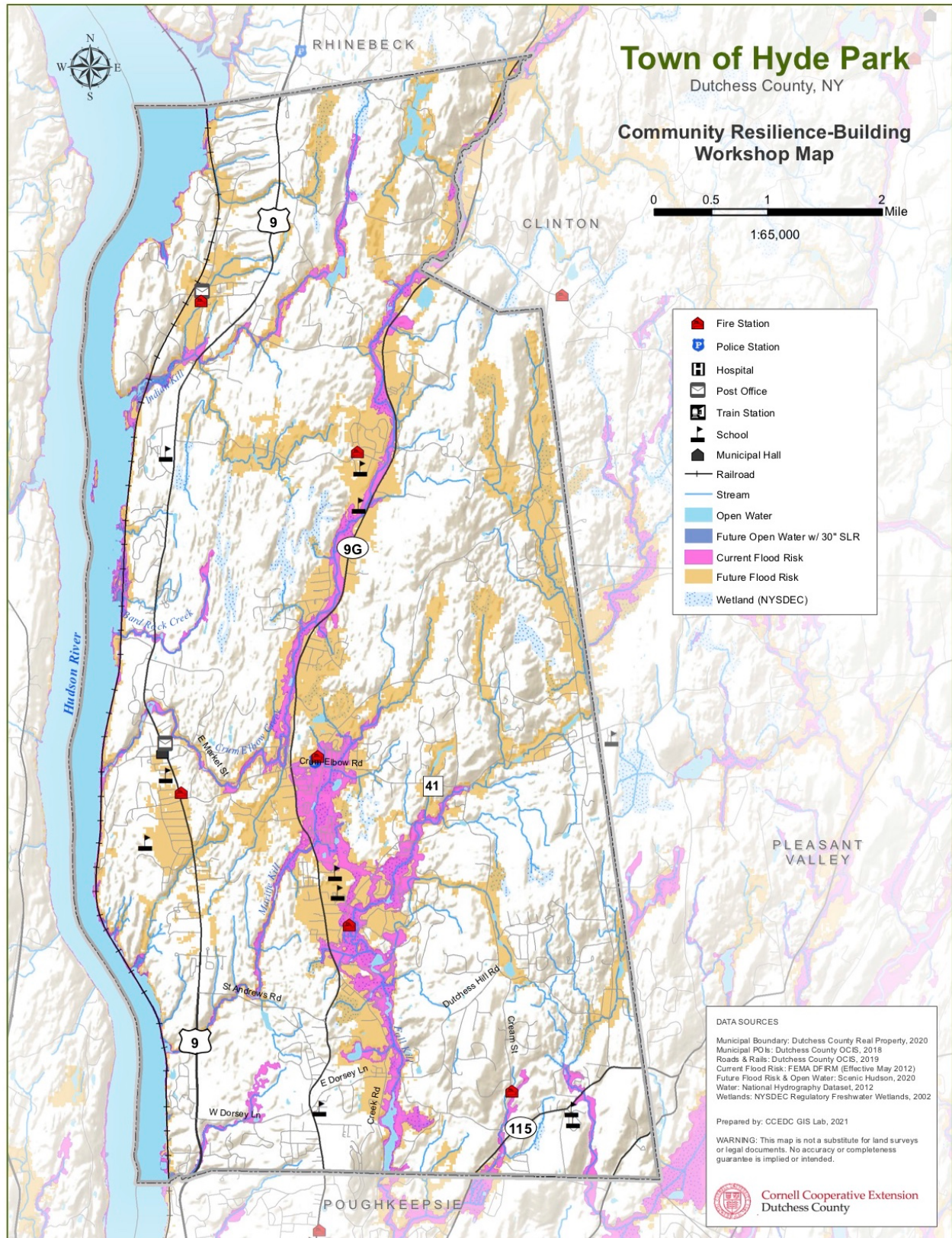


Figure 2. Current and future flood risk in the Town of Hyde Park.



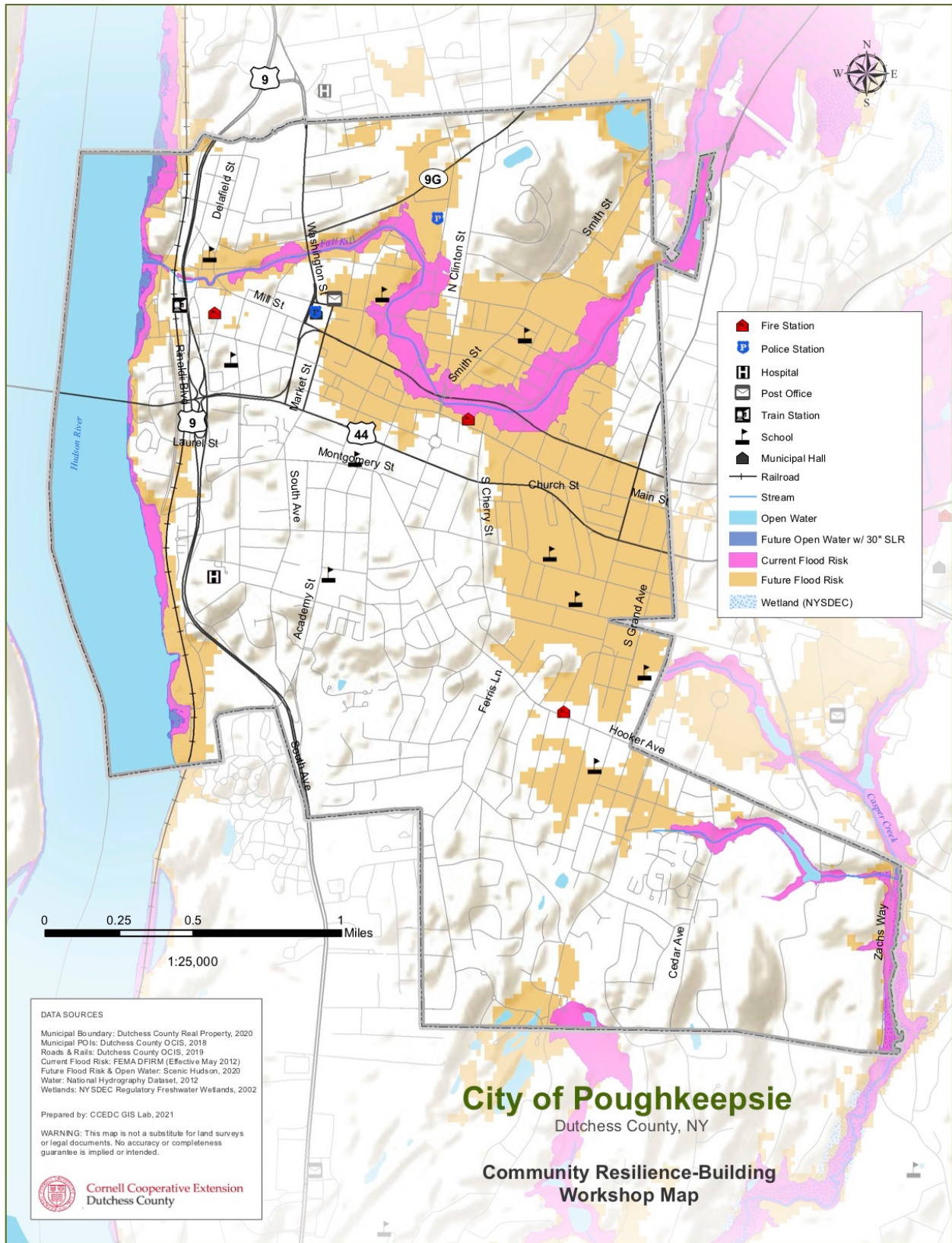


Figure 3. Current and future flood risk in the City of Poughkeepsie.



CLIMATE SMART RESILIENCY PLANNING TOOL RECOMMENDATIONS

Cornell Cooperative Extension Dutchess County worked with the Town of Hyde Park and City of Poughkeepsie to complete a [Climate Smart Resiliency Planning Tool \(CSRPT\)](#). The CSRPT, a priority action of the [NYS Climate Smart Communities \(CSC\) Certification](#) program, reviews a municipality's existing plans and ordinances to identify opportunities to help the community work toward becoming more resilient. The City of Poughkeepsie tool was completed in 2018, and the Town of Hyde Park tool was completed in 2021. The municipality received a copy of the finished tool, as well as a recommendations document to use as a roadmap to move forward with resiliency projects. Michelle Gluck, Environment and Energy Resource Educator from Cornell Cooperative Extension Dutchess County, also shared information and recommendations from the Climate Smart Resiliency Planning Tool for both municipalities via a recorded video presentation, which is available [here](#).

The resiliency planning tool is comprised of the following six sections. The first section is a list of all the relevant plans and ordinances that were considered throughout the tool. Section 2 examines how well the municipality addresses climate vulnerabilities and assesses climate risk. Section 3 looks at how the municipality includes the public in resiliency discussions and informs them about how to be more climate resilient. Section 4 assesses the degree to which the plans are integrated with one another. Section 5 examines the municipality's preparedness level for climate events and recovery procedures. Finally, Section 6 looks at how well the municipality attempts to mitigate climate hazards.

Areas of opportunity shared with both municipalities include:

- Participate in a 2021 Community Resilience Building Workshop.
- Hudson River waterfront communities can benefit from the NYS Local Waterfront Revitalization Program (LWRP), which opens up municipalities to grant funding opportunities to improve their waterfronts.
- Leverage completion of this Climate Smart Resiliency Planning Tool for points toward NYS Climate Smart Communities certification.
- Seek out training opportunities for municipal staff related to floodplain and emergency management issues.
- Flooding from multiple sources and drinking water protection are issues of concern.

Complete recommendations for both municipalities are detailed in Appendix I and II.



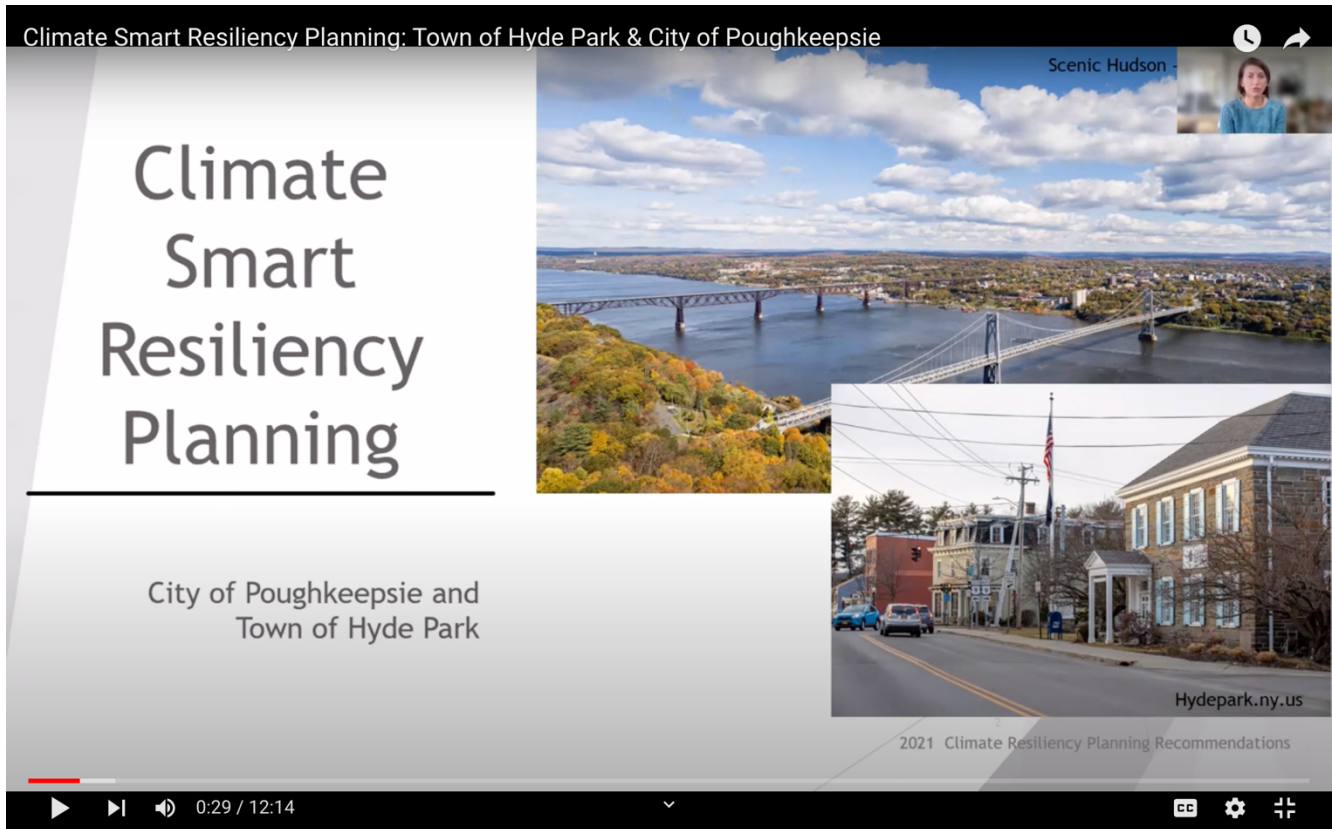


Figure 4. Michelle Gluck from Cornell Cooperative Extension Dutchess County shared information and recommendations from the Climate Smart Resiliency Planning Tool for the Town of Hyde Park and City of Poughkeepsie via a recorded video, available to view [here](#).



COMMUNITY RESILIENCE BUILDING WORKSHOP SUMMARY OF FINDINGS

Top Hazards

During the core team meetings that took place prior to the workshop and at the start of the Community Resilience Building workshop, workshop participants confirmed their top natural climate hazards as the following:

1. **Sea level rise and storm surge:** Projected rises in future mean sea levels, combined with severe coastal storms such as Superstorm Sandy, capable of producing storm surge and coastal flooding.
2. **Inland flooding:** Inland flooding caused by intense precipitation, storms and subsequent runoff from rain or snow.
3. **Drought:** Higher peak temperatures in summer with sporadic precipitation events which may stress municipal and private resources, especially public water supplies and private wells.

The above hazards have a growing impact on residents and businesses in the Town of Hyde Park and the City of Poughkeepsie, both located in Dutchess County. During the Community Resilience Building Workshop, participants from both municipalities were organized into two breakout groups and asked to identify community strengths, community vulnerabilities, and actions to improve resilience to climate hazards. Strengths and vulnerabilities included environmental, infrastructural, and social assets. Each breakout group also prioritized their most important actions. The following sections summarize the results of this process.

Current Strengths

Infrastructure

The Town of Hyde Park's highway department has been actively working on stormwater and drainage projects, including at a site in Staatsburg that did well in Hurricane Ida and other storms this year. The highway department's expertise is a strength, and they have good communication with the municipal engineers. Hyde Park has been working to expand water and sewer infrastructure to reduce the number of private septic systems.

The City of Poughkeepsie's wastewater treatment plant is located on the Hudson River waterfront, but outside of sea level rise projections. The City of Poughkeepsie has its own drinking water treatment plant with some excess capacity. They are exploring additional partnerships with the Town of Poughkeepsie to expand its service. Poughkeepsie is also redoing a major parking lot with permeable material, with support from the New York State Environmental Facilities Corporation.



Society

Both municipalities benefit from partnerships with county agencies and regional organizations. Dutchess County agencies, Cornell Cooperative Extension Dutchess County, and Scenic Hudson in particular have supported work in Hyde Park and Poughkeepsie. Both municipalities benefit from academic institutions that are forward-thinking and well-prepared. Two regional hospitals are located in the City of Poughkeepsie, including Vassar Brothers Medical Center and MidHudson Regional Hospital, and are accessible during emergencies.

The Town of Hyde Park has an active Conservation Advisory Council and Climate Smart Community Task Force. With ongoing activity and a supportive local government, the town has developed a sense of environmental sensitivity. Their Municipal Separate Storm Sewer System (MS4) administrator reviews projects and plans to ensure proper drainage and that streams will not be impacted negatively. Hyde Park has an Emergency Management Plan and an active website with up-to-date information on emergency warnings that support resilience.

The City of Poughkeepsie has a Climate Smart Communities Task Force, and is considering forming a Conservation Advisory Council. They are looking to the City of Newburgh as a potential example, as they recently incorporated their Waterfront Advisory Council into a Conservation Advisory Council. The City of Poughkeepsie is working on updating their comprehensive plan and zoning. They use The Buzz newsletter to share information and communications. Poughkeepsie is the seat of county government; it is also where Scenic Hudson and utility-provider Central Hudson are based.

Environment

For both municipalities, the Fall Kill is an asset and a vulnerability. The Fall Kill flows south through Hyde Park and Poughkeepsie before it enters the Hudson River. Both communities cited the value of the Fall Kill, including access to an inland waterway and its rich history over the centuries.

Hyde Park includes 15 parks, preserves, and historical sites and 13 trails, owned and operated by multiple entities. They have noted a significant increase in trail use, with activity nearly doubling over the past several years. Access to parks helps get residents and visitors outdoors. Hyde Park includes several National Park Sites, mostly located along the Hudson River and comprising much of the town's waterfront area. They have a very good relationship with New York State Department of Environmental Conservation, which has an office at Norrie Point Environmental Center. The Town of Hyde Park is currently working on a natural resources inventory, and has created an environmental fund to support climate smart activities.

The City of Poughkeepsie is working to improve waterfront access, including developing a pedestrian path/linear park along the Hudson River and connection to Walkway Over the



Hudson. Poughkeepsie is very diverse, and increasing numbers of people are using waterfront parks, including Waryas Park. Events like Riverfest and jazz festivals draw thousands of people annually. The City of Poughkeepsie is also working on programming to bring residents to the Hudson River. Poughkeepsie's waterfront has diverse land use, including residential, recreational (including sites for rowing, parks, and the Mid Hudson Children's Museum), and brownfield sites.

The City of Poughkeepsie's southern waterfront has not been developed, and represents a significant opportunity. While the Hudson River waterfront and Fall Kill are vulnerable to flooding and sea level rise, the natural topography of the southern waterfront protects it from flooding. The Southern Waterfront Task Force is working to identify strategies. This area has the potential to incorporate natural planning and be designed as a resilient park to benefit the community.

The City of Poughkeepsie completed their Natural Resources Inventory in 2018, and it represents a valuable baseline that a Conservation Advisory Council or Climate Smart Communities Task Force can use for reference or to take action. They also have documents on the Fall Kill that can assist a prospective Conservation Advisory Council. The City of Poughkeepsie has been working on a variety of ongoing planning projects related to climate resiliency, including Climate-adaptive Design studio (CaD) with Cornell University and the NYS DEC Hudson River Estuary Program, Community Resilience Building Workshop (CRB) with Hudson River Watershed Alliance and The Nature Conservancy, comprehensive planning, and Local Waterfront Revitalization Program (LWRP) through NYS Department of State. While these various plans and programs are a strength, they also represent a vulnerability, due to project fatigue and fragmentation of information.

Current Vulnerabilities

Infrastructure

Sea level rise and extreme weather will impact the CSX/Metro North/Amtrack railroad, located along the Hudson River in both Poughkeepsie and Hyde Park. Flooding from the remnants of Hurricane Ida in 2021 shut down the trains for about a week.

Both municipalities spoke to the need for expanded outreach to get more people on board with necessary infrastructure changes, including planning for the future. Infrastructure like sewers is out of sight for most people, and they may not recognize why it's so important to maintain and upgrade, despite the high cost of investment. In the City of Poughkeepsie, combined sewer systems into the Hudson River are a climate vulnerability. There is a need to separate combined sewers, but it comes at a high cost. With limited municipal budgets and capacity, the municipalities are concerned about a mindset of not being able to afford to do the right thing, and relying on the federal government to come in and fix things. This was described as a moral hazard.



At a larger scale, outdated design criteria for infrastructure are also a vulnerability. The municipalities need updated design criteria for infrastructure to take climate change and future projections into account, including stormwater management. This requires a recognition that the climate has changed and a willingness to spend money on improvements.

Society

Specific developed areas may experience flooding in the future. In the City of Poughkeepsie, this includes residential areas along the Hudson River, along with a new 300-unit building that may be vulnerable to future flooding and sea level rise. It's unclear if these buildings will be equipped to handle flooding. There are also concerns about access to the waterfront if water levels are high. The City of Poughkeepsie does not have an emergency preparedness plan, though they are part of Dutchess County's Hazard Mitigation Plan.

The City of Poughkeepsie does not have a centralized focus or dedicated role for someone to coordinate environmental hazards and sustainability. While they do have an MS4 manager and Climate Smart Communities Task Force, they don't have a department of the environment or sustainability coordinator. The lack of capacity makes it challenging to prioritize Climate Smart Communities actions and issues, with all their other priorities.

The Town of Hyde Park relies on many volunteers to fill these roles. The MS4 manager and Highway superintendent are paid staff, but volunteers do much of this work. Volunteers themselves are an "aging infrastructure," and there is a need to identify a strategy to replace people. There are not enough people to fill key roles.

Both municipalities lack an official grant-writer. While the City of Poughkeepsie has been successful in receiving some grant funds and support for projects like the LWRP and CaD, this work is piecemeal. The community also has difficulty discerning the difference between the variety of climate-related projects; the fatigue around planning projects and acronyms is a vulnerability. The Town of Hyde Park also does not have a dedicated grant-writing position, making grants a challenge to obtain. They also noted that in some cases, they may be competing with the City of Poughkeepsie for funds. The American Rescue Plan Act (ARPA) represents an opportunity for funding for climate resiliency; both municipalities will coordinate with Dutchess County.

Both municipalities described outreach and communications as a challenge. The Town of Hyde Park has some online news sources, including social media, but lacks a local newspaper. It has been difficult to get the message out about the need for municipal volunteers. The City of Poughkeepsie uses The Buzz newsletter to share information, but can't include everything, and community members may not be aware of the issues. There is also a risk of inundation with too much information. The City of Poughkeepsie is diverse, and there are concerns that certain communities are being left out of conversations. It is especially important to include those that are historically underrepresented and could be highly impacted so their voices are heard.



Housing was also a concern for both municipalities. The Town of Hyde Park noted that people from New York City are increasingly moving to the Hudson Valley, and there may be an increase in migration in the future. They are often motivated by more affordability, but this increases housing prices locally. It may be a challenge to serve this growing population with limited municipal budgets, along with the challenge of staying within the 2% tax cap while inflation rises 5%.

Local politics was also discussed as a challenge. It can be difficult to move projects forward, including infrastructure investments. Local elections contribute to municipal capacity issues.

Environment

The Fall Kill, which runs through both the Town of Hyde Park and the City of Poughkeepsie, is vulnerable to flooding in both municipalities. During Hurricane Irene, the Northside of Poughkeepsie sustained considerable damage from flooding. The Fall Kill is channelized and culverts often get backed up during severe storms; this infrastructure is also aging and needs to be maintained or improved. There is a lack of clarity on who is responsible for repair of the walls surrounding the Fall Kill within the City of Poughkeepsie, and whether it is private or municipal. The properties surrounding the Fall Kill are privately owned. Dumping of trash and debris into the Fall Kill is also an issue, especially when it floods. There is an opportunity for planning and infrastructure improvements around the Fall Kill specifically, and improving coordination with Dutchess County.

Along the Hudson River, there is a lack of access to the waterfront in Hyde Park outside of federal National Park Service sites and private property. In Poughkeepsie, the northern waterfront and existing park areas are low-lying and flood, including Waryas Park, which is city-owned. Waryas Park is vulnerable to sea level rise, and there is concern about losing that area in the future.

The City of Poughkeepsie has a disparity in tree canopy cover across the municipality. This leads to problems with heat mitigation and stormwater management in certain neighborhoods. Improving this would benefit mental health and climate resilience.

The municipalities also discussed the need for improved ecological literacy in general as a long-term project. This would help with outreach and communication efforts, and show how various pieces of climate resilience connect.

Both Hyde Park and Poughkeepsie also expressed interest in updating other municipal plans.



Priority Actions to Improve Resilience

Update and adopt the **Local Waterfront Revitalization Program** (LWRP). This would allow both municipalities to utilize the LWRP as a tool to achieve multiple actions related to climate vulnerabilities and resiliency planning.

Provide qualified, inspiring, fact-based, specific, and targeted **environmental education and outreach for youth**. Today's youth will be managing the impacts of climate change in the future.

Support improvements and focus on the **Fall Kill** in the Town of Hyde Park and City of Poughkeepsie, in coordination with key stakeholders.

Ensure that **climate change is considered in all policies**. This includes education for departmental staff who create, enact, and engage with these policies. It also includes ensuring that municipal comprehensive plans, codes, and all other plans are up-to-date and action-oriented around climate resilience and sustainability.

In coordination with CSX, Amtrak, and the Metropolitan Transportation Authority (MTA), initiate a risk analysis of the **CSX railroad** to address flooding and investigate issues in Hyde Park and Poughkeepsie.

Find innovative ways to **connect funding to climate priorities**. As part of this process, develop and strengthen local public, private, non-governmental organizations, and governmental partnerships. Be prepared to take advantage of funding opportunities as they arise. Ensure that comprehensive plans and codes are up-to-date and include climate resilience/sustainability components to help utilize opportunities like ARPA and dedicate funding towards climate projects.

Improve **outreach and communication**, both externally with community members and internally within each municipality. Build a narrative for climate-related vulnerabilities and projects, especially to better engage the public. Improve coordination and capacity to support resilience projects among municipal departments and committees. This could include forming a consolidated Conservation Advisory Council, identifying a Sustainability Coordinator, or incorporating responsibilities into MS4.

Develop a coordinated **intermunicipal emergency preparedness plan**, with the Town of Hyde Park and City of Poughkeepsie. Develop solutions for climate vulnerabilities.



All Recommended Actions to Improve Resilience

Infrastructure

Both municipalities:

- Develop a coordinated intermunicipal emergency preparedness plan, with the Town of Hyde Park and City of Poughkeepsie. Develop solutions for climate vulnerabilities.
- Streamline collection and prioritization of complaints about roads and infrastructure.
- In coordination with CSX, Amtrak, and the Metropolitan Transportation Authority, initiate a risk analysis of the CSX railroad to address flooding and investigate issues.

Society

Both municipalities:

- Include climate as a factor in every policy, similar to how there has been a push for health to be included in every policy.
- Develop effective education and outreach materials with communication experts.
- Engage more youth, including teenagers and high school students, to understand climate change and develop solutions and strategies.
- Build relationships with partners to support projects and improve access to grants. Continue and strengthen public-private-partnerships. Improve coordination with partners to help move projects forward.
- Expand grant funding sources to include both public and private resources.
- Include financial, tax, and assessment experts in climate working groups, to help identify additional ways to pay for projects outside of grants. Consider opportunities to have developers contribute to funding climate resilience projects, including through codes.
- Work with Dutchess County to dedicate some ARPA funds to climate projects.
- Consider creating an exclusion for the New York State tax cap to put money into a climate fund. This and other innovative options would require need help from the state and New York State enabling legislation.
- Develop a comprehensive planning process that is bold and aspirational to guide municipal policies and help municipal departments put those aspirations to work.
- Develop plans that include clear steps for achieving bigger-picture goals. Given limited municipal capacity, large and complicated projects should be broken down into manageable pieces so that effort can be focused. These steps should also focus on the most cost-effective and impactful strategies.

Town of Hyde Park:

- Conduct outreach to engage new municipal volunteers, especially to fill key positions.
- Identify roles for the Planning Board and Zoning Board of Appeals to contribute to climate resilience and sustainability.



- With the Planning Board and Zoning Board of Appeals, update codes and rectify past issues that were unclear.

City of Poughkeepsie:

- Develop an Emergency Preparedness Plan.
- Review current and future flood risk for developed areas. Assess vulnerability of existing and potential future development.
- Develop a fund for flood mitigation, potentially through new development projects and public-private partnerships, setting revenue aside specifically for climate adaptation initiatives. Identify other funding sources, such as MS4 committee funds. Consider innovative financing solutions.

Environment

Both municipalities:

- Reach out to property-owners and renters in floodable areas to educate and engage them on preparation and solutions, including floodplains, flood insurance, etc. to be more proactive about flooding issues.
- Improve conditions in the Fall Kill. In collaboration with adjacent property-owners, keep the channel clear of litter and debris to reduce flood risk. Work with a hydrologist to develop specific opportunities and alternatives, and present concepts to stakeholders. Provide education. Within the City of Poughkeepsie, maintain the Fall Kill trail as a visual asset, allowing residents to keep an eye on the creek. Keep pressure on key stakeholders, including Dutchess County, to support improvements and focus on the Fall Kill.

Town of Hyde Park:

- Work with private entities, such as the Culinary Institute of America, and public entities, such as the National Park Service, to improve access to the Hudson River waterfront.

City of Poughkeepsie:

- Consider consolidating the Shade Tree Committee, Climate Smart Communities Task Force, and Waterfront Advisory Committee into a Conservation Advisory Committee.
- Develop a Sustainability Coordinator position to look at citywide sustainability effort, and/or an expanded MS4 Coordinator role to be more involved with both public and private projects.
- Review current and future flood risk for waterfront parks, including Waryas Park. Determine appropriate solution and climate-adaptive design elements, and incorporate concepts developed through the Climate-adaptive Design studio into action. Consider flood-responsive landscaping design to adapt to sea level rise or relocation of parks to upland areas.



- Encourage the Common Council to adopt the new Local Waterfront Revitalization Program. The City of Poughkeepsie should use the LWRP and incorporate flood maps into waterfront development proposals.

The NYS DEC Hudson River Estuary Program and the New York State Water Resources Institute maintain a webpage that provides an overview of funding available to assist to local governments and non-profit organizations to build resilience and adapt to flooding, sea-level rise and other climate risks. For the latest information, view the [Funding climate adaptation and resilience webpage](#).



WORKSHOP PARTICIPANTS

First Name	Last Name	Municipality/Affiliation	Title
Rosaura	Andújar-McNeil	City of Poughkeepsie Planning Board	
Marsha	Guy	City of Poughkeepsie Climate Smart Task Force	Chair
Neil	Krupnick	Hyde Park Town Board	Deputy Supervisor
Duane	Martinez	Scenic Hudson/Northside Collaborative	River Cities Coordinator
Richard	Mattocks	Hyde Park Climate Smart Communities	Coordinator
David	McNary	Hyde Park Zoning Board of Appeals	Chair
Marc	Nelson	City of Poughkeepsie	City Administrator
Laura	Nordstrom	Hyde Park	Legislative Aide
Natalie	Quinn	City of Poughkeepsie	Planning
Robert	Rolison	City of Poughkeepsie	Mayor
Sue	Serino	New York State Senator	
Pete	Setaro	Hyde Park/CPL	Town Engineer



WORKSHOP FACILITATION TEAM

Workshop Organizers and Lead Facilitators

Emily Vail, Hudson River Watershed Alliance (Project Lead)

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Workshop Presenters

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ACKNOWLEDGMENTS

Special thanks to the Town of Hyde Park and City of Poughkeepsie for their willingness to embrace this process, particularly during the Covid-19 pandemic.

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RECOMMENDED REPORT CITATION

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**APPENDIX I: Climate Smart Community Resilience Tool Recommendations:
Town of Hyde Park**

**APPENDIX 2: Climate Smart Community Resilience Tool Recommendations:
City of Poughkeepsie**



Town of Hyde Park Climate Smart Planning

December 14, 2021

Prepared by Michelle Gluck, Cornell Cooperative Extension Dutchess County.

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

The Climate Smart Resiliency Planning Tool was used to evaluate opportunities for the Town of Hyde Park to improve community resilience to flooding and climate change. Climate resilience is the ability to bounce *forward* and thrive in response climate change impacts.¹ This can be achieved through effective resiliency planning.² Planning Tool reviews many long- and- short-term aspects of storm, emergency, and climate change preparedness by reviewing Town and County planning documents, activities and management. Documents were reviewed, and municipal staff members consulted in the process of completing the assessment. The assessment and recommendations have been shared through a presentation at the December 16th, 2021 Conservation Advisory Council (CAC) and CSC Task Force meeting.

Municipal staff engaged in the Town of Hyde Park Climate Smart Planning assessment:

Aileen Rohr, Town Supervisor

Neil Krupnick, Deputy Supervisor and Hudson 7 representative.

Kathleen (Tad) Moss, Zoning Administrator and MS4 Committee Coordinator

Richard Mattocks, Climate Smart Communities Task Force Chair and CAC member

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

Areas of Strength

- Participant in a 2021 Community Resilience Building workshop with City of Poughkeepsie. **CSC PE7 Action: Climate Vulnerability Assessment (4-16 pts.)**
- The Town has adopted the NYS Climate Smart Communities pledge.
- The Town has an active Conservation Advisory Council and Climate Smart Communities (CSC) Task Force. The Town also has an active Visual Environment Committee. These

¹ NYSDEC Hudson River Estuary Program definition

² An umbrella term for incorporating climate mitigation and adaptation into community planning via involving a diverse array of stakeholders, proactive strategies and policies, and referencing current climate data projections.

entities can build capacity for pursuing climate resiliency related projects and maintain an active public social media presence on the Town’s website.

- The CAC and CSC Task Force are assisting with a Climate Smart Communities Certification Program Certification submittal.
- CAC and CSC Task Force are active participants in the CCEDC CAC and CSC information listservs used for sharing and receiving information and tools.
- The CAC and CSC Task force are assisting with completion of a Natural Resources Inventory. **(CSC PE6 Action: Natural Resources Inventory (8-10 pts.)**
- There is an active interfaith community network in the Town. This could be utilized in the event there is an emergency for communitywide response.
- The Town maintains active collaboration with neighboring municipalities, which leads to beneficial outcomes
 - The Town is actively engaged in the Dutchess County MS4 Committee and could utilize these relationships moving forward to collaborate on and obtain funding for adaptation and mitigation projects.
 - The Town is actively involved with the Fall Kill Watershed Coalition and a supporter of a “whole watershed vision” approach to watershed planning.
 - The Town is a member of the Hudson 7 Drinking Water Intermunicipal Council
- The Town has successfully sought grant funding:
 - Natural Resources Inventory
 - Historical Resources Mapping
 - NYSERDA Town Century Plan
 - Community Development Block Grants

Areas of Opportunity

- The Town has a DRAFT Local Waterfront Revitalization Plan (LWRP) from 1990. There is Town interest in updating and adopting an LWRP.
 - Consider incorporating insights from the CRB workshop and CSRP tool process.
 - The Hudson River, and recently added Fall Kill creek, are identified within Coastal Waterbodies and Designated Inland Waterways, which opens up Hyde Park to LWRP grant funding.
- The Town has an active website and social media pages (i.e. Facebook “Community” pages) that can be utilized to share more information.
- Flooding from multiple sources and drinking water protection are issues of concern.
 - The Town CAC and CSC Task Force could be utilized to help educate residents about flooding prevention and mitigation on residential lands.
 - There are repeated flooding concerns of the Fall Kill in the Haviland and Roosevelt neighborhoods.

- The Town launched an initiative to upgrade culverts and drainage strategies to proactively prepare and reduce already observed impacts of increased precipitation patterns from climate change.
- Currently the whole Town Center is on septic. There is interest and momentum in pursuing a Town Center sewer district to mitigate potential risks from septic leach field failures. The Town is investigating funding sources for sewer infrastructure.
 - Additionally, multiple wastewater treatment plants have been installed to manage sewer district capacity.
- There are opportunities to improve pedestrian and bicycle friendly infrastructure in the Town through Complete Streets improvements. **CSC PE6 Planning & Infrastructure for Bicycling & Walking or CSC PE6 Complete Streets Policy.**
- The Town is a good candidate for the Centers and Greenspaces Greenway Guide concept implementation and is a member of the Greenway Connections Compact.
- Hyde Park is a Hudson River Waterfront community. There is interest in increasing accessibility to the waterfront to better connect residents and visitors to the river.
- The Town is a registered Climate Smart Community. It can leverage completion of this Climate Smart Resiliency Planning Tool for points toward Climate Smart Communities certification. **CSC PE7 Action: Climate Smart Resiliency Planning (6 pts.).** For more information on the Climate Smart Communities Certification Program, visit the Climate Smart Communities portal: <https://climatesmart.ny.gov/>

Recommendations

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

Section 2- Vulnerability and Risk Assessment

- Consider training and developing staff capacity for using vulnerability assessment methods (like FEMA’s HAZUS-MH) and risk-mapping tools (like flood insurance rate maps and cumulative risk assessments). If it is beyond the Town’s capacity, look to Dutchess County staff who have the capacity to use these resources.
- In the next update of the County Hazard Mitigation plan, expand to include more climate adaptation strategies in the list of mitigation strategies.
 - Identify and categorize by type, administration, condition, timing and geography
 - Evaluate and prioritize adaptation strategies using metrics, such as strategy cost, feasibility, timing of implementation, efficacy and co-benefits
 - Consider linking these strategies to capital budget cycles
- In the next Hazard Mitigation Plan update, consider updating maps to show populations (especially vulnerable populations), building stock, and natural and cultural resources in relation to identified hazards. The Town could utilize County GIS resources for this.

- Continue to track riverine repetitive loss properties with the National Flood Insurance Program³ and notifying emergency managers and public works officials of the location of riverine repetitive loss properties.
- Consider incorporating estimates of future financial losses resulting from riverine and coastal flooding into next Hazard Mitigation plan and/or report updates.
- Complete a build-out analysis using existing zoning ordinances and consider comparing it to the extent of storm surge scenarios and projected sea-level rise scenarios.
- Consider formally adopting the projections of sea-level rise from the State Sea Level Rise Task Force report⁴

Section 3- Public Outreach and Engagement

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

- Involve the public in the identification of historic storm effects, such as storm-surge elevations, flood-prone streets, overwash, or property loss through participatory mapping, public surveys, and stakeholder meetings. In one of the stakeholder meetings, allow the public to identify an overall acceptable level of natural-hazard risk.
 - This could be completed through a Local Waterfront Revitalization Program plan update.
- Provide the public with information on the natural and beneficial functions of floodplains, wetlands and green infrastructure practices. **CSC PE9 Action: Climate Related Public Events (3pts) or CSC PE9 Action: Climate Change Education and Engagement (4-8 pts.).**
 - This could be an initiative that the CAC/CSC Task Force assists with.
 - Education could take place through public learning sessions or through informational content on the Town website or social media pages.
- Create a webpage on the Town's website that is dedicated to storm/emergency preparedness and flood mitigation.
 - Publicize the availability of floodplain information to property owners, businesses, insurance agents, real estate agents, and lenders
 - Add a link directing residents and businesses to the Dutchess County Department of Emergency Response's webpage on storm-preparedness⁵ and webpages⁶ that provide information on what to include in an at-home emergency kit, emergency supplies, and evacuation kit (FEMA's Ready.gov checklist).

³ <https://www.fema.gov/national-flood-insurance-program>

⁴ http://www.dec.ny.gov/docs/administration_pdf/slrffinalrep.pdf

⁵ <http://www.co.dutchess.ny.us/QuickLinks/17006.htm>

⁶ <http://www.co.dutchess.ny.us/QuickLinks/17006.htm>

- Provide residents with information on expected inundation areas, evacuation routes, and evacuation bus pick-up locations, location of severe weather shelters and pet shelters prior to the threat of a storm.
- Share the link from the Dutchess County Department of Emergency Response's webpages⁷ to the ASPCA's disaster preparedness steps for domesticated animals
- Share FEMA suggested means⁸ to protect homes against storm and wind damage with property owners in the community
- Publicize the availability of floodplain information to property owners, residents and businesses, including guidelines to retrofit existing development for flood and wind risks.
- Continue to inform residents of the NY-Alert program⁹ and how they can sign up.
- Consider developing a public outreach plan focused on climate outreach and engagement: **CSC PE9 Action: Climate Change Education and Engagement (4-8 pts.)**.
- Consider completing a municipal flood guide to provide the public with emergency preparedness resources, community assets and evacuation information.
- Consider employing multilingual and culturally sensitive approaches while providing residents with essential information

Section 4- Integration of Municipal Plans

- In the next Comprehensive Plan update, consider the following: **CSC PE6 Action: Comprehensive Plan with Sustainability Elements (3-21 pts)**
 - Clearly identify climate resilience within the mission, vision, or goals and address climate hazards specifically, referencing the Hazard Mitigation Plan (2016).
 - Explain the support and involvement of emergency managers, floodplain managers, coastal managers and public works officials
 - Go beyond including citizens and public officials in the process to include civic organizations and businesses as well.
 - Identify potential coastal-hazard effects on infrastructure, land uses, housing and community facilities
 - Include recommendations to reduce hazard vulnerability through land-use planning
 - Encourage using green infrastructure techniques to help prevent flooding
 - Emphasize non-structural pre-disaster mitigation measures such as acquiring flood-prone lands and adopting No Adverse Impact flood plain regulations
 - Discuss strategies to determine whether to relocate structures that have been repeatedly flooded, including identifying an equitable approach for community involvement in relocation decisions and potential funding sources

⁷ <http://www.co.dutchess.ny.us/QuickLinks/17006.htm>

⁸ <https://www.ready.gov/severe-weather>

⁹ <https://alert.ny.gov/>

- When planning for development along the river’s edge, consider planning development that will help connect people to the river and accommodate water during floods
- Include the best available projections concerning the frequency and severity of extreme storm events and incorporate into Zoning Code requirements.
- Plan for costs associated with the follow-up inspection and enforcement of land development regulations and building codes
- Clearly identify safer growth areas in the community, adopt policies to encourage smart growth development in these areas, change land-use codes and regulations to allow for this type of development, and use capital improvement plans and budgets to support development in these areas
- Strive to reduce vulnerability in coastal zones through non-structural measures
- As much as possible, zone floodways and other frequently flooded areas for open space or recreation, and make sure zoned land uses are compatible with coastal hazards
- Consider updating/strengthening the Town’s Freshwater Wetlands ordinance to protect wetlands or eroding cliffs from development or disturbance.¹⁰
- The next time the Hazard Mitigation Plan is updated, consider:
 - Including projects that could be included in pre-disaster grant applications and expediting the application process for post-disaster Hazard Mitigation Grant Program acquisitions
 - Including cost and effectiveness details for past mitigation efforts
 - Providing a general explanation of the environmental, social and economic consequences of failing to address natural hazards
 - Consider updating the hazard map to include storm surge and erosion rates
 - Including inland riverine erosion, sea-level rise enhanced storm surges, landslides, tropical storms, hurricanes, and Nor’easters as a hazards
 - Addressing transportation and other needs of particularly vulnerable populations, such as homeless, low income, elderly, special needs and disabled
 - Corresponding mitigation goals with measurable mitigation objectives
 - Including a process for intergovernmental coordination for mitigating hazards
 - Continuing to consult with neighboring governments and Dutchess County EMO to coordinate disaster responses and hazard mitigation strategies
- Consider creating a floodplain management plan with the help of a licensed professional planner, professional hydrologist, and a certified floodplain manager, and incorporate it into the next Comprehensive Plan, Hazard Mitigation Plan, and Stormwater Management Plan updates.
- Consider updating the Town’s Flood Damage Prevention ordinance to go ‘above and beyond’ the minimum measures required by FEMA and NY State. This could include:

¹⁰ https://www.dos.ny.gov/opd/programs/resilience/Model_Local_Laws_to_Increase_Resilience.pdf

regulations requiring elevation of three or more feet (instead of the standard two) above base flood elevation for new construction standards; prohibiting critical facilities in the floodplain; cumulative substantial improvement; and more.¹¹

- Consider updating and adopting the Town’s DRAFT Local Waterfront Revitalization Plan
 - Identify the threat of storms and erosion, sea level rise and other climate related hazards, and the vulnerability of wildlife and habitat to coastal hazards
 - Include recommendations to reduce hazard vulnerability through land-use planning
 - Encourage using green infrastructure techniques to help prevent flooding
 - When planning for development along the river’s edge, consider planning development that will help connect people to the river and accommodate water during floods
 - Involve the public in the identification of historic storm effects, such as flood-prone streets, overwash, or property loss through participatory mapping, public surveys, and stakeholder meetings. In one of the stakeholder meetings, allow the public to identify an overall acceptable level of natural-hazard risk. **CSC PE9 Action: Climate Related Public Events (3pts)**

Section 5- Disaster Preparedness and Recovery

- Consider becoming a [Storm Ready Community](#)
- Consider training emergency responders in real-time estuarine observing systems and stream gauging methods.
- In the next update of the Emergency Preparedness Plan, consider:
 - Including the best available projections concerning the frequency and severity of extreme storm events
 - Including more detailed information on coordination and communication methods among critical stakeholders such as community-based organizations, local businesses, local health departments, utilities and local government leaders
 - Including steps for emergency protective measures
- Maintain a Special Needs Registry and vulnerable populations database.

Section 6- Hazard Mitigation Implementation

- Continue pursuing Climate Smart Community Certification.
- Consider using the Hazard Mitigation Plan to propose retrofitting public buildings, critical facilities and other infrastructure to withstand flood damage.
- Have building and permitting officials complete training on:
 - Retrofitting flood-prone residential buildings
 - Post-flood stream intervention training

¹¹ https://www.dos.ny.gov/opd/programs/resilience/Model_Local_Laws_to_Increase_Resilience.pdf

- Consider expanding utilized tools for managing development in hazard-prone areas to include techniques such as transfer or purchase of development rights, conservation overlay districts, or zoning for open or recreational space.
- Consider establishing special area ordinances for habitat preservation.

Potential Funding Sources

This section will list any applicable local, state, and federal funding available.

- NYSDEC Climate Smart Communities Grant Program:
<https://www.dec.ny.gov/energy/109181.html>
- NYSDEC Grant Applications: <https://www.dec.ny.gov/pubs/grants.html>
- NYSDEC Hudson River Estuary Program Grants:
<https://www.dec.ny.gov/lands/5091.html>
- FEMA Hazard Mitigation Grant Program: <https://www.fema.gov/hazard-mitigation-grant-program>
- Building Resilient Infrastructure and Communities Program (BRIC)
<https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>
- FEMA Flood Mitigation Assistance Grant Program: <https://www.fema.gov/flood-mitigation-assistance-grant-program>
- HUD Community Development Block Grants:
https://www.hud.gov/program_offices/comm_planning/communitydevelopment/programs
- NYS Department of State Grants (including Local Waterfront Revitalization Program):
<https://www.dos.ny.gov/funding/>
- Hudson Valley Greenway Community Grants:
<https://hudsongreenway.ny.gov/grants-funding>

City of Poughkeepsie Climate Smart Resiliency Planning

Prepared by Michelle Gluck, Cornell Cooperative Extension Dutchess County

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

The Climate Smart Resiliency Planning Tool was used to evaluate opportunities for the City of Poughkeepsie to improve resilience to flooding and climate change. The Planning Tool reviews many long- and short- term aspects of storm and climate change preparedness by reviewing City and County planning documents, municipal codes, activities and management. Documents were reviewed, and municipal staff members were consulted in the process of completing the assessment. The assessment and recommendations have been shared through meeting discussions, with the City Administrator's office, and presented at the September 25th, 2018 Waterfront Advisory Committee meeting session.

Municipal staff engaged in the City of Poughkeepsie Climate Smart Planning assessment:

Paul Hesse, Community Development Coordinator, Dutchess County Department of Planning and Development and City of Poughkeepsie

Natalie Quinn, City Planner

Judith Knauss, Deputy Zoning Administrator

Jennifer Rubbo, the Environmental Cooperative at the Vassar Barns

Europa McGovern, City of Poughkeepsie Waterfront Advisory Committee

The completed assessment and recommendations highlight areas of opportunity for the City of Poughkeepsie to integrate flood and climate change preparedness into its municipal operations and planning. Recommendations that align with NYSDEC Climate Smart Community Program actions are displayed in bold font.

Areas of Strength

- The City recently hired a Senior City Planner and two new code enforcement officers. This provides the City with increased staffing capabilities and capacity.
- The City has taken interest in community wellness and community development initiatives and received funding (2018) for pedestrian safety through the NYS Pedestrian Safety Action Plan.
 - In 2018, Marist College Environmental Planning students prepared a report on walkability titled, "The Poughkeepsie Northside Pedestrian Needs Assessment."
- The City has an active Waterfront Advisory Committee which works to strengthen, support and connect the City's waterfront areas.

- Collaborative community organizations (arts/culture, affordable housing, local jobs).
 - The City received \$1 million through the Department of State for rehabilitation of the Poughkeepsie Trolley Barn, located along the Fall Kill to spur revitalization through arts.
 - The newly activated Northside Collaborative (2017).
- The Waterfront Redevelopment Strategy provides a sound overview of City plans, historical context and integration of various local and regional plans and strategies, description of waterfront park conditions, floodplain issues on the waterfront, and property ownership.
- The City has several ongoing initiatives to make the City more pedestrian and bicycle friendly:
 - The City was recently awarded a 75,000 Greenway grant to connect College Hill Park and the Dutchess County Rail Trail¹
 - The Kaal Rock Connector Project (in partnership with Scenic Hudson)
- The City's land use process and procedure project: The City is currently reviewing its development process and administration (in partnership with PACE Land Use Law Center).

Areas of Opportunity

- There is interest and action to form a Conservation Advisory Council (CAC) for the City. The CAC could prove to be a valuable asset in implementing many of the CSRP recommendations and supporting the City in securing funding for them.
- The City has interest in updating its Zoning Code and is currently engaged in the Rezone Downtown Poughkeepsie project. Part of the policy framework is to offer a transit-supportive, pedestrian-friendly and bike-able city. This could potentially be an opportunity to incorporate CSRP recommendations when going through updates.
- The City has secured funding for the NYS Department of State Local Waterfront Revitalization Program² (LWRP) to update their plan with input from their Waterfront Advisory Committee (WAC). The City released an RFP with proposals due 7/27/2018. CSRP recommendations could be referenced in the update.
- The Fall Kill Watershed Management Plan (2006), Fall Kill Plan (2012), and the Fall Kill Watershed Neighborhood Source Assessment (2012) provide substantial data on flooding of the Fall Kill and recommendations to improve its health and that of surrounding neighborhoods.
- Mass Design Group completed an assessment of a City of Poughkeepsie portion of the Fall Kill. This assessment could help inform the Comprehensive Plan update, LWRP, or Resiliency Plan.
- The City will be cutting down 50 Ash Trees due to infestation from the Emerald Ash Borer Beetle. There is an innovative educational campaign to inform residents of why the trees are being cut down and the importance of maintaining healthy city trees. This is a great opportunity to provide education about the value and benefit of green infrastructure in urban environments.
- The City of Poughkeepsie can leverage completion of this CSRP for points towards Climate Smart Communities Program (CSC) certification. **CSC PE7 Action: Climate Smart Resiliency Planning (6 pts)**. For more information on the CSC Program and the actions listed in this document, visit the CSC portal: <https://climatesmart.ny.gov/>. CSC Certification is one of the 10 High Impact Actions of the NYSEDA Clean Energy Communities Program (CEC), which the City is actively pursuing.

¹ http://midhudsonnews.com/News/2018/September/17/Pou_Greenway_grant-17Sep18.html

² <https://www.dos.ny.gov/opd/programs/lwrp.html>

- The City is partnering with the Environmental Cooperative at Vassar Barns to complete a Natural Resources Inventory. This could open up opportunities for conserving beneficial land areas such as floodplains and urban tree canopy, and inform a Natural Resource Management Plan or an update to the current Open Space Plan (1976)
- The City recently started an engagement campaign with residents through promoting a Parks Improvement survey. This is part of an initiative to create a Parks Improvement Plan. This is a great opportunity for resiliency planning and green infrastructure practices to be incorporated.
- The City has a newly activated Anti-Blight Initiative headed by the City Administrator and built from the Poughkeepsie Distressed Property Initiative. The Anti-Blight Initiative aims to inventory properties and determine strategies for beneficial active use. Resilient building and land use practices could be incorporated when determining beneficial uses and restoration efforts.
- The City has been actively applying for grant funding for resiliency related topics:
 - NYS Consolidated Funding Application 2018 (CFA) to update Comprehensive Plan and create an Emergency Preparedness Plan through New York State Department of Environmental Protection (NYSDEC) CSC Program funding.
 - CFA 2018 to implement green infrastructure in a city owned parking lot.
 - NYSDEC Urban and Community Forestry Grant to conduct a tree inventory and management plan.

Recommendations

The following opportunities emerged as a result of the CSRP assessment and are organized according to priority projects and department specific recommendations:

Priority Projects

Comprehensive Plan Update:

CSC PE6 Action: Comprehensive Plan with Sustainability Elements (3-21 pts.) *CSC Grant Funding Available.

- Reference and integrate plans and initiatives such as the Fall Kill Watershed Management Plan (2006), the Fall Kill Plan (2012), and the Fall Kill Watershed Neighborhood Source Assessment (2012). Incorporate content from the Natural Resources Inventory.
- Update the Open Space Plan (1976) and adopt plan as part of the comprehensive plan. Coordinate plan with the New York State Open Space Plan.
- Involve emergency managers, floodplain manager, and public works officials in the process and other community stakeholders. Clearly explain participation techniques.
- Incorporate resilience within the mission, vision, and goals.
- Identify flood-prone areas and discourage development in those areas as well as require strategies to reduce flood damage to building, roads, driveways, and parking lots.
 - Implement green infrastructure installation projects at strategic locations to relieve stress on combined sewers during heavy rain events.
- Include strategies to reduce stormwater runoff from roads, driveways and parking lots (i.e. green infrastructure techniques to help prevent flooding.)

- Emphasize non-structural pre-disaster mitigation measures such as acquiring flood-prone lands and adopting No Adverse Impact floodplain regulations.
- Identify strategies to determine whether to relocate structures that have been repeatedly flooded. Include an equitable approach for community involvement in relocation decisions and potential funding sources.
- Identify safer growth areas in the City. Include recommendations and policy updates to encourage development in such areas.
- Ensure plan has a recommended update frequency, even if it is just a goal for when the plan should be updated or reviewed and not an official, mandated update frequency.

Zoning Code Update/Downtown Rezoning Initiative:

- Update codes to promote more flood resistant building.
- Review the use of impact fees, accommodation taxes, or user fees to manage development in hazard-prone areas.
- When planning new development, ensure that it is compact, walkable and has a variety of uses.
 - Refer to the City Center Revitalization Plan. Consider drawing content from the Poughkeepsie Northside Pedestrian Needs Assessment (2018).
- Encourage green infrastructure and low impact development strategies and regulations.
 - Tree protection ordinances, impervious cover limits, riparian buffers, vegetated drainage channels, cluster development
 - Implement green infrastructure installation projects at strategic locations to relieve stress on combined sewers during heavy rain events.

Create a Resiliency Plan that includes:

- Community visioning through involving the public in opportunities to identify historic storm effects including storm-surge elevations, flood-prone streets, or property loss.
 - Install publicly visible high water mark signs. Consider collaboration with local artists.
- Content from various other plans, reports, assessments and initiatives such as the Natural Resources Inventory, Fall Kill reports, and Anti-Blight Initiative
- Climate change trends and predictions
- Environmental/social/economic consequences of failure to address natural hazards
- Riverine and waterfront flooding concerns and floodplain/stormwater management
- Identification of areas of significant public investment, water dependent uses, and critical infrastructure that require structural protection because options for relocation, elevation, or employment of non-structural measures are not feasible
- A full Climate Vulnerability Assessment **CSC PE7 Action: Climate Vulnerability Assessment (4-16 pts.) *CSC Grant Funding Available.** Include;
 - Identification of climate hazards, past events, and details such as magnitude of consequences, operations disruptions, operating costs, number of persons affected.
 - Information from the Hazard Mitigation Plan (municipal annex) Section 9.3.4 Hazard Risk/Vulnerabilities and Ranking.

- Future estimates of losses that may result from hazards using the Department of State’s Asset Inventory Worksheet and Risk Assessment Tool³ to identify vulnerabilities.
- Categorized adaptation strategies prioritized by cost, type, administration, geography, feasibility, timing of implementation, efficacy, and co-benefits. Include strategies to reduce vulnerability through non-structural measures where possible. **CSC PE7 Action: Climate Adaptation Strategies (2-8 pts.)**
- Maps of vulnerabilities in relationship to risks; vulnerable populations, natural resources, cultural resources, landslides, sea-level rise. The City could work with Dutchess County to complete these maps.
- A procedure for coordinating with neighboring jurisdictions to explore a watershed-wide approach to stormwater management.
- Ensure plan has a recommended update frequency, even if it is just a goal for when the plan should be updated or reviewed and not an official, mandated update frequency

Local Waterfront Revitalization Project (LWRP) Update:

- Consider engaging in sustainable wetland or shoreline restoration, including non-structural and ecologically enhanced methods. **CSC PE7 Action: Restoration of Floodplains and Riparian Buffers (1-10 pts.) or PE7 Action: Nature-based Shoreline Protection (under review).**
 - Include guidance to control invasive plant species, especially near riparian buffers and shorelines of the Fall Kill and Hudson River.
 - Inform property owners of preferred sustainable shoreline protection techniques.
- Use all available authorities to restrict or prohibit any activities, development or other actions in erosion hazard areas, in order to minimize damage to property, and to prevent the exacerbation of erosion hazards.
- Adopt the projections of sea-level rise from the State Sea Level Rise Task Force report or more recent studies for planning purposes.

Create an Emergency Preparedness Plan:

- Include a procedure for public outreach on;
 - Storm preparedness including expected inundation areas, evacuation routes, evacuation bus pick-up locations, severe weather shelter locations, and pet shelters.
 - What to include in an at-home emergency kit, emergency supplies and in an evacuation kit. Guide residents on the development of personal or family evacuation plans.
- Become a Storm Ready Community
- Create an Emergency Response and Short-term Recovery Plan.
 - Include a hierarchy of authority during emergencies and identify first responders.
 - Include a list of contacts for operators of municipal facilities.
 - Include steps for emergency protective measures (sandbagging, erecting warning devices, search and rescue).
 - Include organizational framework to conduct preliminary damage assessments.
 - Incorporate best available projections for extreme storm frequency and severity.

³ <https://stormrecovery.ny.gov/community-regions/hudson-valley-and-westchester>

- Include guidance on coordination among critical stakeholders such as local community organizations, businesses, health departments, utilities, and local government leaders.
- Identify a designated emergency operations center and designated storm shelters that are located outside of flood-hazard areas; designed to withstand high winds; and have an elevated back-up power source.
- Create an Evacuation Plan. **CSC PE7 Action: Early Warning Systems and Evacuation Plans (under review⁴)**.
 - Clearly define responsibilities for municipal evacuation
 - Identify a time frame to evacuate residents from storm hazard areas
 - Identify flood prone locations on evacuation routes and identify more than one route.
 - Provide consideration that neighboring jurisdictions could be evacuating concurrently.
 - Identify evacuation options for populations that rely on public transportation.
 - Identify conditions for which a traffic lane reversal would be implemented.
 - Identify local and state evacuation assistance programs for the following special needs; hospitals, nursing homes, prisons, residents without personal transportation, elderly, disabled, schools.
- Maintain and promote a special needs registry for vulnerable populations.
- Establish a volunteer community emergency response team.
- Establish an adequate heat-warning system and cooling-center program for vulnerable populations. **PE7 Action: Cooling Centers (under review)**. *CSC Grant Funding Available
- Create a Continuity of Operations Plan including guidance on post-disaster waste management.
- Define procedures to conduct habitability and substantial damage assessments
- Store FEMA elevation certificates outside of flood-hazard areas.
- Create a Long-Term Recovery Plan. This plan could:
 - Identify redevelopment opportunities outside of flood-hazard areas.
 - Employ advisory flood maps to define post-disaster redevelopment building elevations.
 - Identify opportunities to retrofit or relocate existing structures in hazard-prone areas.
 - Utilize risk and vulnerability mapping to determine the location of future development.
 - Identify clear lines of coordination to transition from short-term to long-term recovery.
 - Include organizational framework for coordination and use of state, federal and NGO resources to provide maximum benefit to the disaster area.
 - Include provisions to reduce greenhouse gas emissions from reconstructed areas through energy efficiency, use of renewable energy and smart growth principles.
- Establish a temporary post-disaster building moratorium, if possessing the authority to do so.
- Ensure plan has a recommended update frequency, even if it is just a goal for when the plan should be updated or reviewed and not an official, mandated update frequency

Website Updates/Public Outreach Opportunities:

- Conduct public outreach on the natural and beneficial functions of floodplains, wetlands, and green infrastructure and other flood mitigation practices through webpage content, brochures, educational programs, public art, and increased signage.

⁴ Definition of "Under Review": These actions are currently being revised by the Climate Smart Communities interagency team and will be uploaded to the portal within the next few weeks.

- Use the City’s website to conduct outreach to residents and businesses by adding a link to the City’s website directing residents and businesses to Dutchess County’s webpage on storm-preparedness⁵, brochures and newsletters, community meetings, television, radio or on social media pages. **CSC PE9 Action: Social Media (3 pts.)**
- Add a link to the City’s website directing residents to Dutchess County’s webpages⁶ on developing personal and family evacuation plans, at-home emergency kits, emergency supplies, evacuation kits (FEMA’s Ready.gov checklist), and ASPCA’s disaster preparedness steps for domesticated animals. Other public outreach on these topics could be conducted through social media pages, brochures, community newsletters, etc. **CSC PE9 Action: Social Media (3 pts.)**
- Employ multilingual and culturally sensitive approaches when providing outreach to residents.
- Inform residents of the NY-Alert Program
- Consider developing a public outreach plan on climate outreach and engagement comprised of the elements above. **CSC PE9 Action: Climate Change Education and Engagement (4-8 pts.).**

Conservation Advisory Council:

- Take the CSC Program Pledge and consider eventually becoming a certified CSC.
 - Establish a Climate Smart Communities Task Force (**CSC PE1.2 (20 Points.)**)
 - Appoint a Climate Smart Community Coordinator (**CSC PE1.3 (10 Points.)**)
- Create a local Climate Action Plan. **CSC PE2 Action: Government Operations Climate Action Plan (12-16 pts.) or Community Climate Action Plan (16pts.).**
- Review existing tools used to manage development in hazard-prone areas and consider employing the following;
 - Rolling easements
 - Buyouts of vulnerable properties and other land acquisition programs
 - Transfer of development rights or purchase of development rights
- Prohibit automatic replacement of hardened structures impacted by flooding

Department Specific

Engineering/Public Works:

- Ensure staff capacity for using vulnerability assessment (like FEMA’s HAZUS-MH) and risk-mapping tools (like flood insurance rate maps). If it is beyond the City’s capacity, look to Dutchess County staff who have the capacity to use these resources.
- Have staff complete post-flood stream intervention training. For more information on this training, including upcoming scheduled trainings, visit the DEC’s webpage⁷
- Work with The Nature Conservancy through their Community Resilience Building process⁸.
- Increase active participation in the Dutchess County MS4 Committee.
- Describe municipal responsibilities for inspection and maintenance of facilities.

⁵ <http://www.co.dutchess.ny.us/QuickLinks/17006.htm>

⁶ <http://www.co.dutchess.ny.us/QuickLinks/17006.htm>

⁷ <https://www.dec.ny.gov/lands/86450.html>

⁸ www.communityresiliencebuilding.com/crbworkshopguide

Planning:

- Publicize the availability of floodplain information to property owners, businesses, insurance agents, real estate agents, and lenders through trainings on Parcel Access, or other means such as webpages, brochures, or educational trainings.
 - Include a link to Parcel Access and FEMA flood plain information in the application for site plan review checklist.
 - Provide property owners with guidelines to retrofit existing development for flood risks. Consider providing a “new homeowner” package to share this and related information.
- Work with The Nature Conservancy through their Community Resilience Building process⁹.
- Support land-acquisition programs to purchase land-conservation easements in hazard-prone areas. **CSC PE7 Action: Restoration of Floodplains and Riparian Buffers (2 pts.).**

Building:

- Address flood hazards; including making recommendations to reduce hazard vulnerability through land-use planning.
- Plan for costs associated with inspection and enforcement of building and zoning codes.
- Enhance protocol for assessing older building stock that may be more vulnerable to high winds.

City Administrator:

- When updating the Capital Improvements Plan, consider;
 - Flood risk, coastal hazards and sea-level rise projections into risk assessments over the expected service life of proposed infrastructure projects and municipal infrastructure.
 - Integration of existing plans, studies, reports, and technical information.
 - Identifying threats of coastal storms, erosion, sea-level rise, and other climate hazards.
 - Identifying the vulnerability of wildlife and habitat to coastal hazards.

Potential Funding Sources

- DEC Climate Smart Communities Grant Program: <https://www.dec.ny.gov/energy/109181.html>
- DEC Grant Applications: <https://www.dec.ny.gov/pubs/grants.html>
- DEC Hudson River Estuary Program Grants: <https://www.dec.ny.gov/lands/5091.html>
- FEMA Hazard Mitigation Grant Program: <https://www.fema.gov/hazard-mitigation-grant-program>
- FEMA Pre-disaster Mitigation Grant Program: <https://www.fema.gov/pre-disaster-mitigation-grant-program>
- FEMA Flood Mitigation Assistance Grant Program: <https://www.fema.gov/flood-mitigation-assistance-grant-program>
- HUD Community Development Block Grants: https://www.hud.gov/program_offices/comm_planning/communitydevelopment/programs
- NYS Department of State Grants (including Local Waterfront Revitalization Program): <https://www.dos.ny.gov/funding/>

⁹ www.communityresiliencebuilding.com/crbworkshopguide