

# Town of Gardiner Climate Smart Planning

March 26, 2021

Prepared by Brent Gotsch, Cornell Cooperative Extension of Ulster 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 Gardiner to improve its community's resilience to flooding and climate change. The Planning Tool reviews many long- and short- term aspects of storm and climate change preparedness by reviewing Town and County planning documents, 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 discussions at meetings with the members of the Climate Smart Committee and select Town officials.

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

Franco Carucci, Town Board Member/Liaison to Climate Smart Task Force  
Andy Lewis, Code Enforcement Officer  
Marybeth Majestic, Town Supervisor  
Brian Stiscia, Highway Superintendent

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

## Areas of Strength

- The Town of Gardiner has a completed Climate Action Plan that identifies preliminary greenhouse gas inventories and provides an outline for future actions the Town plans to complete in the Climate Smart Communities program.
- The Town has completed a comprehensive Open Space Plan that identifies priority areas for conservation and provides a framework for the protection and wise use of the Town's open space.
- The Town has completed a Natural Resource Inventory that catalogs natural resources in the Town including the many diverse habitats within its bounds.

- The Town participates in the National Flood Insurance Program.

## Areas of Opportunity

- The Town of Gardiner adopted the Ulster County Multijurisdictional Hazard Mitigation Plan, which makes the community eligible to receive FEMA grants such as the Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance Program (FMA), and the Building Resilient Infrastructure and Communities (BRIC) program.
- The Town has a website that is capable of sharing documents, links, and plans to the public. It is possible to make this site more intuitive and user friendly. Some examples include:
  - Consider revising the website to be more visually appealing and user friendly. Have pages on the Town website or separate websites for the Environmental Conservation Commission and the Climate Smart Task Force.
  - Revise the “Resources and Links” tab to better itemize documents under appropriate topic headings so important documents like the Town Natural Resources Inventory and Open Space Plan can be accessed easily and downloaded quickly.
  - Have a dedicated page on the website for information on preparing for disasters and providing warning on imminent storms or weather events.
- Participate in The Nature Conservancy Community Resilience Building Workshop<sup>1</sup>, which helps community participants identify hazards, challenges, strengths, and priority actions for community resilience.
- Seek out training opportunities for municipal staff related to floodplain and emergency management issues such as the FEMA Emergency Management Institute’s course on the Community Rating System, Advanced Floodplain Management Courses, and similar trainings available at the National Emergency Training Center campus.
- The Town of Gardiner can leverage completion of this Climate Smart Resiliency Planning Tool for points toward Climate Smart Communities certification **CSC PE7 Action: Evaluate Policies for Climate Resilience (6 pts.)**. For more information on the Climate Smart Communities Program and the actions listed in this document, visit the Climate Smart Communities portal.<sup>2</sup>

## Recommendations

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

---

<sup>1</sup> The Nature Conservancy Community Resilience Building Workshop (CRB): [www.communityresiliencebuilding.com/crbworkshopguide](http://www.communityresiliencebuilding.com/crbworkshopguide)

<sup>2</sup> Climate Smart Communities Portal: <https://climatesmart.ny.gov/>

## Section 2- Vulnerability and Risk Assessment

- Conduct a full vulnerability assessment detailing the magnitude of consequences associated with current and future climate hazards **CSC PE7 Action: Climate Vulnerability Assessment (4-16 pts)**. Include how these events will affect internal operations, people, public health, the environment, the economy, and capital and operating costs. Consider using the Department of the State’s Asset Inventory Worksheet and Risk Assessment Tool.<sup>3</sup> Ensure that vulnerability and risk assessments are shared with all relevant municipal officials and emergency managers.
- Train municipal managers on the use of available risk (like FEMA’s HAZUS-MH) and vulnerability (like flood insurance rate maps and cumulative risk assessments) tools. Many of these trainings are offered through the FEMA Emergency Management Institute.<sup>4</sup>
- Consider creating maps including maps of populations (especially vulnerable populations), building stock, and natural and cultural resources.
- Create a map or visuals to supplement the current build-out analysis for the Town based on current zoning and overlay it with risk areas such as the Special Flood Hazard Area on FEMA Flood Insurance Rate Maps (FIRMs).
- Incorporate estimates of future financial losses resulting from flooding into plans.

## Section 3- Public Outreach and Engagement

- Consider installing high water mark signs at visible public locations. Include kiosks or educational signage to explain flooding issues and potential future conditions in Town.
- Publicize the availability of floodplain information to insurance agents, real estate agents, lenders, and the community. Encourage them to attend the “Floodplain Management for Real Estate Professionals Course” offered by Cornell Cooperative Extension of Ulster County and the Ulster County Department of the Environment. Contact Ulster County Board of Realtors for training dates.
- Inform residents about available disaster resources through municipal website links, television, radio, social media, etc. **CSC PE9 Action: Social Media (3pts)**. Resources could include:
  - ASPCA’s disaster preparedness steps for domesticated animals.<sup>5</sup>
  - FEMA’s “Are You Ready” guide.<sup>6</sup>
  - FEMA’s Homeowner’s Guide to Retrofitting.<sup>7</sup>

---

<sup>3</sup> Department of the State’s Asset Inventory Worksheet and Risk Assessment Tool: <https://stormrecovery.ny.gov/community-regions/hudson-valley-and-westchester>

<sup>4</sup> FEMA Emergency Management Institute: <https://training.fema.gov/emi.aspx>

<sup>5</sup> ASPCA’s Disaster Preparedness for Domesticated Animals: <https://www.aspc.org/pet-care/general-pet-care/disaster-preparedness>

<sup>6</sup> FEMA’s “Are You Ready” Guide: <https://www.fema.gov/media-library/assets/documents/7877>

<sup>7</sup> FEMA’s Homeowner’s Guide to Retrofitting: <https://www.fema.gov/media-library/assets/documents/480>

- Provide residents with guidance on the development of 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 **CSC PE9 Action: Climate Change Education and Engagement (4-8 pts.)**.
  - Take advantage of the numerous fairs, festivals and events held either in or near the Town of Gardiner to provide visitors to area with information about flooding and the Town’s plans to become more resilient to climate change. This could include educational signage or in-person educational programs.
  - Hold a climate change education event at a Town function, such as an Earth Day celebration or similar event, to inform the public about climate change, its effects on the Town, and efforts that the Town is taking to make the community more resilient.<sup>8</sup>
- As more activities in the Climate Smart program are completed, revise the Climate Smart Gardiner Task Force webpage (or consider developing a new website) to focus on the efforts and accomplishments of the community to reduce Greenhouse Gas (GHG) emissions **CSC PE9 Action: Local Climate Action Website (3 pts.)**.<sup>9</sup> Must 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 made toward achieving GHG targets and other goals.
  - Ways that 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 that residents and businesses in the community can take to reduce their GHG emissions. This can include links to external resources that provide more information and describe the support available for actions related to, for example, energy efficiency, renewable energy, healthy vegetarian diets, and clean transportation options, such as electric vehicles.

## Section 4- Integration of Municipal Plans

- When updating the Town Comprehensive Plan be sure to include sustainability elements within it **CSC PE6 Action: Comprehensive Plan with Sustainability Elements (3-21 pts)**.<sup>10</sup>

---

<sup>8</sup> This action was identified as a priority action by municipal staff

<sup>9</sup> This action was identified as a priority action by municipal staff

<sup>10</sup> This action was identified as a priority action by municipal staff

- Reference and incorporate components of any relevant plans (Open Space Plan, Climate Action Plan, etc.).
- Explain the support and involvement of emergency managers and public works officials.
- Explicitly mention and incorporate resilience within the plan’s mission, vision, and goals.
- Link recommendations to reducing hazard vulnerability through land-use planning.
- Emphasize non-structural pre-disaster mitigation measures, such as acquiring flood-prone lands.
- Consider including strategies that determine whether to relocate structures that repeatedly flood, including identifying an equitable approach for community involvement in decision-making and potential funding sources.
- Be sure that it cross-references the County’s multijurisdictional hazard mitigation plan.
- Consider adopting the following local law when updating the Town comprehensive Plan:<sup>11</sup>
  - For individual properties, consider a requirement through a subdivision plat or a covenant attached to a deed to indicate environmental constraints on the property. Consider adopting zoning ordinances that limit development in flood-prone areas such as creating overlay districts that are contiguous with the FEMA mapped Special Flood Hazard Area within the municipality. To provide more protection, the municipality could define the boundary as the 500-year floodplain (0.2 percent or greater annual chance flood).
  - More information can be found in Chapter 4: Management of Floodplain Development, Section 4.1 Limit Development in the 100-Year or 500-Year Floodplain in the [NYS Model Local Laws to Increase Resilience](#).
    - A local example includes the Town of Dover’s Municipal Code, Chapter 145: Zoning, Article IV: Overlay District Regulations, Section 145-13 [Floodplain Overlay District](#).
- Consider creating a Local Waterfront Revitalization Plan (LWRP) and access funding through the NYS Department of State.<sup>12</sup>
- Consider adopting the Association of Floodplain Managers No Adverse Impact concepts.<sup>13</sup>
- Create a plan combining elements of a capital improvements plan and economic development plan **CSC PE8 Action: Green Economic Development Plans (4 pts.)**. The plan should:

<sup>11</sup> This action was identified as a priority action by municipal staff

<sup>12</sup> NYS Local Waterfront Revitalization Program: <https://www.dos.ny.gov/opd/programs/lwrp.html>

<sup>13</sup> Association of State Floodplains No Adverse Impact: <https://www.floods.org/index.asp?menuID=349&firstlevelmenuID=187&siteID=1>

- Include a licensed professional planner and engineer in the planning process.
- Consider the risk of flooding when upgrading existing municipal infrastructure and on proposed infrastructure projects.
- Incorporate projections of flooding into risk assessments over the expected service life of municipal infrastructure.
- Incorporate existing plans, studies, reports and technical information.
- Identify economic vulnerabilities due to hazards.
- Incorporate climate change effects into its assessments of economic vulnerabilities.
- Create an up-to-date emergency plan that:<sup>14</sup>
  - Clearly defines roles of municipal officials and emergency responders.
  - Incorporates data and predications 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 disaster.
- Consider creating a local Hazard Mitigation Plan that clearly identifies the most pressing concerns of the Town **CSC PE7 Action: Hazard Mitigation Plan (4 pts.)**. The plan should:
  - Document how climate change may affect a community’s vulnerability to flooding, wildfire, drought, and extreme temperatures.
  - Assess and document potential impacts such as power outages during summer heat waves; increased home, street, and sewer flooding due to heavy precipitation events; and increased structural damage and impaired operations of critical infrastructure.
  - Identify mitigation actions that reduce these risks and vulnerabilities.
  - Be complementary to the Ulster County Multijurisdictional Hazard Mitigation Plan.

## Section 5- Disaster Preparedness and Recovery

- Consider participating in the National Weather Service Storm Ready Community program<sup>15</sup>, which helps communities take a proactive approach to prepare for extreme weather and natural disasters.
- Inform the public of the NY-Alert<sup>16</sup> program and how to sign up.<sup>17</sup>

---

<sup>14</sup> This action was identified as a priority action by municipal staff

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

<sup>16</sup> NY-Alert is a New York State service that alerts citizens of hazards and emergencies via email or telephone. <https://nyalert.gov/>

<sup>17</sup> This action was identified by municipal staff as a priority action

- Create a Heat Emergency Plan **CSC PE7 Action: Heat Emergency Plan (6 pts.)**. Be sure to identify cooling center locations (ex: libraries, firehouses, community centers) where vulnerable populations can go and how community will respond during a prolonged heat emergency.<sup>18</sup>
- 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.
  - Promote awareness of cooling centers.
  - Implement additional services to encourage utilization of cooling centers.
- Create a formal evacuation plan with routes out of known hazard areas.<sup>19</sup>
- Consider participating in the National Flood Insurance Program (NFIP) Community Rating System (CRS) **CSC PE7 Action: National Flood Insurance Program Community Rating System (3 pts.)**. The Community Rating System is a program within the National Flood Insurance Program that reduces flood insurance policy holder premiums town-wide based on actions that the Town does. Actions can be done to earn points in the system including education and outreach efforts as well as higher standards for floodplain management such as additional freeboard standards for new buildings in the floodplain.
  - The Town of Shandaken is the first community in Ulster County to be admitted to the Community Rating System. It has been admitted as a Level 8 community which provides a 10% reduction in flood insurance premiums town-wide. Consult with officials from that community to learn best practices from them.
- Consult with Cornell Cooperative Extension of Ulster County to provide preparedness education for area farmers so their farms will be more resilient in case of a natural disaster.

## Section 6- Hazard Mitigation Implementation

- Engage in wetland or riparian buffer restoration and protection **CSC PE7 Action: Riparian Buffers (2-14 pts)**. Be sure to:
  - Assess the riparian buffers in the community.
  - Encourage sustainable enhanced methods of streambank and riparian area protection encouraged through incentives or regulation.
  - Establish special area ordinances for habitat preservation.
  - Implement impact fees to pay for restoration and protection efforts.
  - Develop a plan to control invasive species.

---

<sup>18</sup> This action was identified by municipal staff as a priority action

<sup>19</sup> This action was identified by municipal staff as a priority action

- Engage with the Trees for Tribes<sup>20</sup> program to complete these objectives.
- Consider using federal grant programs such as the FEMA Hazard Mitigation Grant Program, FEMA Flood Mitigation Assistance Program, and FEMA Building Resilient Infrastructure and Communities Program to implement mitigation projects.
- Consider adopting a new Design Flood Elevation (DFE) for structures in the community to make them more resilient to flooding **CSC PE7 Action: Design Flood Elevation and Flood Maps (2-14 pts.)**. Consider adopting the following as a local law to implement a DFE:
  - Consider adopting a design flood elevation (DFE) that exceeds base flood elevation (BFE) requirements plus NYS 2-foot freeboard standards.
    - More information can be found in Chapter 4: Management of Floodplain Development, Section 4.3. Establishing a Design Flood Elevation in the [NYS Model Local Laws to Increase Resilience](#).
- Consider adopting the following as a local law to improve floodplain resiliency:
  - Adopt a “Cumulative Substantial Improvement” definition into the Flood Damage Prevention Ordinance definitions section and commit to tracking substantial improvements over a defined set of years (typically 10 years) and using that to determinate substantial damage classifications. Define Cumulative Substantial Improvement as “Any reconstruction, rehabilitation, addition, or other improvement of a structure that equals or exceeds 50% of the market value of the structure at the time of the improvement or repair when counted cumulatively for 10 years.”
    - For a local example see Town of Shandaken Municipal Code, Chapter 77 Flood Damage Prevention, [Section 77-4](#).
- Assess any culverts or dams in the community and right-size or remove as appropriate **CSC PE7 Action: Culverts and Dams (2-24 pts.)**. Be sure to:
  - Assess any stream crossings in the municipality.
  - Create a road-stream crossing management plan.
  - Install a right-sized culvert or bridge.
  - Create an inventory of any dams in the municipality.
  - Remove dams by working with the appropriate authorities.
  - The Ulster County Department of the Environment, Ulster County Soil and Water Conservation District, and Cornell Cooperative Extension of Ulster County can be utilized as resources for road-stream crossing replacements and dam removal concerns.

---

<sup>20</sup> Trees for Tribes: <https://www.dec.ny.gov/animals/77710.html>



## Potential Funding Sources

- DEC Climate Smart Communities Grant Program: <https://cwconline.org/fhmi-program-overview/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 Building Resilient Infrastructure and Communities Program: <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](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/>
- NYS Local Waterfront Revitalization Program (direct link to LWRP): <https://www.dos.ny.gov/opd/programs/lwrp.html>