

# Climate Smart Resiliency Plans, Policies, and Projects Improvement Plan for: The Town of Caroline

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## **Overview**

This document should serve as a supplement to the Climate Smart Resiliency Planning Evaluation Tool, which is a survey of existing plans, policies and projects intended to help ensure that all community plans and policies will either help reduce or, at a minimum, not increase vulnerability. The main objective of this document is to highlight deficiencies in the Town of Ulysses' plans and local laws to date, suggest improvements to strengthen the municipality's resilience to climate change, and document points of interest to the municipality identified through the planning process.

This document was completed, in part, to obtain points towards Climate Smart Communities certification. It follows the sections of the Climate Smart Resiliency Planning Tool. This document can also act as a road map for the Town of Caroline to incorporate climate resiliency vision, goals, and strategies into local plans and projects (CSC Pledge Element 7.4).

## **Improvement Areas**

### **Section 1: Community Plan Checklist**

The initial portion of the Climate Smart Communities Planning Tool is a checklist that simply reviews the plans, ordinances, and policies that the municipality may or

may not have. The Town of Caroline has established the following plans and ordinances that address some aspect of climate resiliency: a Comprehensive Plan, a Subdivision Ordinance, a Stormwater Management Plan, a Floodplain Management Plan, and a Flood Damage Prevention Ordinance.

The Town of Caroline has yet to formally adopt a Zoning Ordinance, an Open Space Plan, or a Natural Resource Conservation Plan. These plans could significantly increase Caroline's resiliency and there has been discussion within the town about beginning the work on creating some of these documents. The Town of Caroline is also planning on revising their Comprehensive Plan in the near future and incorporating some aspects of the previously mentioned plans could help shift focus onto these topics. Specifically, the Comprehensive Plan could more directly address hazards.

## **Section 2: Vulnerability and Risk Assessments**

The Town of Caroline was able to cover the vulnerability and risk assessment portion of the checklist effectively due in part to the Tompkins County multi-hazard mitigation document. Additionally, Caroline has stayed on top of flood risks through the use of risk-mapping tools and thorough communication with effected parties, whether that is the public or emergency managers.

Although there is a countywide multi-hazard mitigation plan resiliency would be improved if Caroline were to create their own local plan. Another area that Caroline could potentially expand would be the development of adaptation strategies for the most damaging hazards to the Town of Caroline, which could then reduce the cost of damages and investment in redevelopment.

## **Section 3: Public Outreach and Engagement**

In terms of public outreach, the Town of Caroline has been very effective at communicating some information but certain areas could still be improved. Caroline does a good job of providing the public with information regarding beneficial

functions that floodplains, wetlands, and green infrastructure can provide. Caroline also distributes information to property owners with details about creating emergency kits and plans. The Watershed Committee for the Town of Caroline has also played an important role in informing affected members of the public with flood mitigation information.

From an improvement standpoint, Caroline could focus more on effectively integrating the public in planning processes through participatory mapping, public surveys, and stakeholder meetings. Storm-preparedness outreach could also be improved through the adoption of different methods of fortification distribution. For example having a publically accessible website that provides effective methods protection against storm and wind damage could help the public increase Caroline's resiliency.

#### **Section 4: Integration of Municipal Plans**

This portion of the checklist focuses on describing what municipal plans are currently in place and evaluating their implications for resiliency. The Town of Caroline's Comprehensive Plan identifies the means through which specific hazards can be reduced and attempts to encourage green infrastructure techniques as a way of reducing flooding. Caroline has also recently adopted the International Building Code, which promotes flood-resistant development. Similarly, building code requires two or more feet above Base Flood Elevation for structures being built in floodplains. The Tompkins County Multi-Hazard Mitigation Plan as well as the Town of Caroline's Stormwater Management Plan are both very thorough and effectively address many aspects of climate resiliency.

There is still room for improvement, within many of the existing municipal plans and with the establishment of new plans, to strengthen Caroline's resiliency. One area for continued focus for Caroline is flooding and floodplains. Two potential improvements could be the further use of subdivision or zoning ordinances to encourage safe development in floodplains, specific protection of riparian buffers, attempts to lower population density in floodplains, as well as the adoption of a No

Adverse Impact strategy. The No Adverse Impact floodplain management approach makes it so that no action made by any party can negatively impact the resources or rights of others. These impacts could include increased flood peaks, stages, velocities, or increased erosion and sedimentation. There are also several plans that could be created that would help Caroline address climate resiliency including: a Floodplain Management Plan, a Capital Improvements Plan, and an Economic Development Plan. Additionally, Caroline could establish a stormwater utility that would be capable of funding efforts to reduce damages associated with large weather events.

### **Section 5: Disaster Preparedness and Recovery**

The Town of Caroline does not have much planning when it comes to disaster preparedness and recovery. Caroline does have an emergency warning system as well as an early flood-warning system to alert the public of potential hazards. Caroline also has a volunteer fire department, which can serve as a community emergency response team during disasters.

Since Caroline does not currently have any formal plans in place to deal with emergencies there is a lot of opportunity for improvement. Some plans that could be created include: Emergency Response Plan, Short-term Recovery Plan, Long-term Recovery Plan, Evacuation Plan, as well as a Continuity of Operations Plan. Caroline could also establish an emergency operations center, special needs registry, or cooling center program. In order to prepare for severe weather incidents Caroline could enroll in the Storm Ready Community program that is offered through the National Weather Service and helps communities proactively strengthen themselves. The public could be provided with information to help increase their household's resiliency through distribution of pre-disaster mitigation measures such as installing ponds to capture stormwater, planting inundation-tolerant vegetation, or managing land to improve the soil's water retention.

## **Section 6: Hazard Mitigation Implementation**

The Town of Caroline public representatives have done a good job participating in trainings that help with hazard mitigation including: retrofitting flood-prone residential buildings and post-flood stream intervention trainings. Caroline also provides the public with guidelines for how to retrofit for flood and wind resiliency. Caroline has been active in using FEMA grants to bolster flood prone areas including the FEMA Flood Mitigation Assistance Program.

Caroline could improve its hazard mitigation efforts by adopting a Climate Action Plan, which could take into account the potential change in hazard frequency or magnitude in the future and create appropriate mitigation strategies. Caroline could enroll in FEMA's Community Rating System, which helps strengthen floodplain properties against floods and avoid flood damage for new development while also giving discounts on flood insurance premiums. Programs could also be developed to reduce the extent of or prevent the spread of invasive plant species and increase habitat preservation within the Town. Finally, more tools to manage development in hazard-prone areas could be implemented such as: conservation overlay districts or cluster development, rolling easements, and buyouts of vulnerable properties.

**Table of potential actions towards climate resilience for the Town of Caroline identified through the Climate Smart Resiliency Planning Process.**

<u>Potential Actions</u>	<u>Relevant CSC Actions</u>	<u>Timeline</u>	<u>Responsible Party</u>
<b>Section 1: Community Plan Checklist</b>			
<b>Adopt a Zoning Ordinance</b>	<ul style="list-style-type: none"> <li>• <u>6.19:</u> Preserve Natural Areas Through Zoning or Other Regulations</li> <li>• <u>6.2:</u> Incorporate Smart Growth Principles into Land-use Policies and Regulations</li> <li>• <u>7.5:</u> Incorporate Climate Resiliency Vision, Goals, and Strategies into Local Plans and Projects</li> </ul>		
<b>Adopt an Open Space Plan</b>	<ul style="list-style-type: none"> <li>• <u>6.17:</u> Develop a Natural Resource Inventory</li> <li>• <u>6.19:</u> Preserve Natural Areas Through Zoning or Other Regulations</li> <li>• <u>7.5:</u> Incorporate Climate Resiliency Vision, Goals, and Strategies into Local Plans and Projects</li> <li>• <u>7.13:</u> Conserve Natural Areas for Species Migration and Ecosystem Resilience</li> </ul>		
<b>Adopt a Natural Resource Conservation Plan</b>	<ul style="list-style-type: none"> <li>• <u>6.17:</u> Develop a Natural Resource Inventory</li> <li>• <u>6.5:</u> Create Resource-Efficient Site Design Guidelines</li> </ul>		

	<ul style="list-style-type: none"> <li>• <u>6.19</u>: Preserve Natural Areas Through Zoning or Other Regulations</li> <li>• <u>7.13</u>: Conserve Natural Areas for Species Migration and Ecosystem Resilience</li> </ul>		
<b>Section 2: Vulnerability and Risk Assessments</b>			
<b>Adopt a local multi-hazard mitigation plan</b>	<ul style="list-style-type: none"> <li>• <u>7.1</u>: Conduct a Vulnerability Assessment</li> <li>• <u>7.4</u>: Develop Climate Adaptation Strategies</li> <li>• <u>7.5</u>: Incorporate Climate Resiliency Vision, Goals, and Strategies into Local Plans and Projects</li> <li>• <u>7.6</u>: Update the multi-hazard mitigation plan to address changing conditions and identify specific actions to reduce vulnerability to natural hazards</li> </ul>		
<b>Develop adaptation strategies for relevant hazards</b>	<ul style="list-style-type: none"> <li>• <u>7.4</u>: Develop Climate Adaptation Strategies</li> <li>• <u>7.6</u>: Update the multi-hazard mitigation plan to address changing conditions and identify specific actions to reduce vulnerability to natural hazards</li> <li>• <u>7.1</u>: Conduct a vulnerability assessment</li> </ul>		
<b>Section 3: Public Outreach and Engagement</b>			
<b>Integrating the public in the planning process</b>	<ul style="list-style-type: none"> <li>• <u>9.1</u>: Create a climate change education, outreach, and engagement program, focusing on mitigation and adaptation</li> <li>• <u>9.3</u>: Host climate related educational seminars, workshops, conferences, or fairs</li> </ul>		

<p><b>More proactively provide storm-preparedness outreach</b></p>	<ul style="list-style-type: none"> <li>• <u>9.1:</u> Create a climate change education, outreach, and engagement program, focusing on mitigation and adaptation</li> <li>• 9.3: Host climate related educational seminars, workshops, conferences, or fairs</li> </ul>		
<p><b>Section 4: Integration of Municipal Plans</b></p>			
<p><b>Encourage safe development in floodplains</b></p>	<ul style="list-style-type: none"> <li>• <u>6.2:</u> Incorporate smart growth principles into land-use policies and regulations</li> <li>• <u>6.19:</u> Preserve natural areas through zoning or other regulations</li> <li>• <u>7.12:</u> Conserve, revegetate and reconnect floodplains and buffers in riparian areas</li> <li>• <u>7.10:</u> Create or update a watershed assessment to identify flooding and water quality priorities</li> <li>• <u>7.14:</u> Facilitate a strategic relocation of uses that are not water dependent from flood prone areas</li> </ul>		
<p><b>Further protection of riparian buffers</b></p>	<ul style="list-style-type: none"> <li>• <u>7.12:</u> Conserve, revegetate and reconnect floodplains and buffers in riparian areas</li> </ul>		
<p><b>Attempt to lower population density in floodplains</b></p>	<ul style="list-style-type: none"> <li>• 6.19: Preserve natural areas through zoning or other regulations</li> </ul>		
<p><b>Adopt a No Adverse Impact policy in floodplains</b></p>	<ul style="list-style-type: none"> <li>• <u>8.3:</u> Include green industries in economic development plans</li> </ul>		

<b>Adopt a Floodplain Management Plan</b>	<ul style="list-style-type: none"> <li>• <u>7.11</u>: Adopt a floodplain management and protection ordinance to reduce vulnerability to flooding and erosion</li> </ul>		
<b>Adopt a Capital Improvements Plan</b>	<ul style="list-style-type: none"> <li>• <u>8.3</u>: Include green industries in economic development plans</li> <li>• 8.9: Establish incentives for green industry or businesses to locate in community</li> </ul>		
<b>Adopt an Economic Development Plan</b>	<ul style="list-style-type: none"> <li>• <u>7.5</u>: Incorporate climate resiliency vision, goals, and strategies into local plans and projects</li> <li>• <u>8.3</u>: Include green industries in economic development plans</li> </ul>		
<b>Establish a Stormwater Utility</b>	<ul style="list-style-type: none"> <li>• 7.16: Use green infrastructure to manage stormwater in developed areas</li> <li>• 7.17: Conserve wetlands and forests to manage stormwater, recharge groundwater and mitigate flooding</li> </ul>		
<b>Section 5: Disaster Preparedness and Recovery</b>			
<b>Adopt an Emergency Response Plan</b>	<ul style="list-style-type: none"> <li>• <u>7.7</u>: Develop and implement a heat emergency plan</li> </ul>		
<b>Adopt a Short-term Recovery Plan</b>	<ul style="list-style-type: none"> <li>• <u>7.6</u>: Update the multi-hazard mitigation plan to address changing conditions and identify specific actions to reduce vulnerability to natural hazards</li> </ul>		
<b>Adopt a Long-term Recovery Plan</b>	<ul style="list-style-type: none"> <li>• <u>7.6</u>: Update the multi-hazard mitigation plan to address changing conditions and identify specific actions to reduce vulnerability to natural hazards</li> </ul>		

<b>Adopt an Evacuation Plan</b>	<ul style="list-style-type: none"> <li>• <u>7.6</u>: Update the multi-hazard mitigation plan to address changing conditions and identify specific actions to reduce vulnerability to natural hazards</li> </ul>		
<b>Adopt a Continuity of Operations Plan</b>	<ul style="list-style-type: none"> <li>• <u>7.6</u>: Update the multi-hazard mitigation plan to address changing conditions and identify specific actions to reduce vulnerability to natural hazards</li> </ul>		
<b>Establish an Emergency Operations Center</b>	<ul style="list-style-type: none"> <li>• <u>7.9</u>: Open or expand existing cooling centers</li> </ul>		
<b>Create a Special Needs Registry</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>		
<b>Create a Cooling Center Program</b>	<ul style="list-style-type: none"> <li>• <u>7.9</u>: Open or expand existing cooling centers</li> </ul>		
<b>Enroll in the Storm Ready Community Program</b>	<ul style="list-style-type: none"> <li>• <u>7.11</u>: Adopt a floodplain management and protection ordinance to reduce vulnerability to flooding and erosion</li> </ul>		
<b>Provide public with more information on how to increase hazard resiliency</b>	<ul style="list-style-type: none"> <li>• 9.1: Create a climate change education, outreach, and engagement program, focusing on mitigation and adaptation</li> <li>• 9.5: Use social media to inform the community about the progress of local government's efforts</li> </ul>		
<b>Section 6: Hazard Mitigation Implementation</b>			
<b>Adopt a Climate Action Plan</b>	<ul style="list-style-type: none"> <li>• <u>2.5</u>: Develop a Government Operations Climate Action Plan</li> <li>• <u>2.6</u>: Develop a Community Climate Action Plan</li> </ul>		

	<ul style="list-style-type: none"> <li>• <u>7.2</u>: Develop a Climate Resilience Vision and Associated Goals</li> </ul>		
<b>Enroll in FEMA's Community Rating System</b>	<ul style="list-style-type: none"> <li>• <u>7.15</u>: Promote community flood prevention strategies through the National Flood Insurance Program Community Rating System</li> </ul>		
<b>Establish programs to reduce the extent of or prevent invasive plant species</b>	<ul style="list-style-type: none"> <li>• <u>7.13</u>: Conserve Natural Areas for Species Migration and Ecosystem Resilience</li> </ul>		
<b>Establish programs to increase habitat preservation</b>	<ul style="list-style-type: none"> <li>• <u>7.13</u>: Conserve Natural Areas for Species Migration and Ecosystem Resilience</li> </ul>		
<b>Increasing the number of tools used for hazard mitigation</b>	<ul style="list-style-type: none"> <li>• 7.10: Create or update a watershed assessment to identify flooding and water quality priorities</li> <li>• 7.6: Update the multi-hazard mitigation plan to address changing conditions and identify specific strategies to reduce vulnerability to natural hazards</li> </ul>		