



# NY Rising Countywide Resiliency Plan MADISON COUNTY



July 31, 2014



## Madison County NY Rising Community Reconstruction Plan

***This document was developed by the NYRCR Madison County Planning Committee as part of the NY Rising Community Reconstruction (NYRCR) Program and is supported by the NYS Department of State. The document was prepared by the following Consulting Team:***

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# Foreword

### *Introduction*

Flooding from severe summer storms in 2013 inflicted damages in five upstate counties, bringing home the reality that it no longer takes a hurricane or tropical storm for raging flood waters to wreak havoc in our communities. Those summer storms – as well as Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee – signal that we need to rebuild our communities in a way that will mitigate against future risks and build increased resilience.

To meet these pressing needs, Governor Andrew M. Cuomo led the charge to develop an innovative, community-driven program. The NY Rising Community Reconstruction (NYRCR) Program provides the State's most impacted communities with the technical expertise needed to develop reconstruction strategies to build more resilient communities.

### *Program Overview*

The NYRCR Program is a planning and implementation process established to provide rebuilding and resiliency assistance to communities heavily damaged by Hurricane Irene, Tropical Storm Lee, Superstorm Sandy, and the severe summer storms of 2013. Drawing on lessons learned from past recovery efforts, the NYRCR Program is a unique combination of bottom-up community participation and State-provided technical expertise. This powerful combination recognizes that community members are best positioned to assess the needs and opportunities of the places where they live and work. Up to \$3 million was committed by the Governor for each of the five counties.

While part of the larger NYRCR effort involving over 100 communities in 20 other counties, the approach taken in the five upstate counties of Niagara, Madison, Herkimer, Oneida and Montgomery was tailored to meet their particular circumstances. In each, a countywide NYRCR Planning Committee was formed in consultation with local leaders that included members representing county planning, economic development, human service organizations, soil and water services, emergency services, highway services, local governments, educational institutions, business and other organizations.

The approach in these five counties was two-pronged, focusing first on identification of remaining recovery needs, and then on developing countywide long-term resiliency strategies and actions. Planning Committee meetings were held, during which Planning Committee members worked with the State's NYRCR Program team to identify storm damage, recognize recovery efforts in the immediate aftermath of the storms, and develop a list of projects still needed to recover from the storms. These reports, published in early April included descriptions of recovery projects and their estimated costs and project benefits.





## NY Rising Madison County Resiliency Plan

The Planning Committees then looked more closely at where storm damages occurred; what assets are at risk; and how the risk to those assets can be reduced or eliminated. They describe in this plan the strategies they will use to avoid future damages a list of actions to implement those strategies.

All Planning Committee meetings were open to the public, and public engagement events attracted community members who provided feedback on proposals. Throughout the planning process, Planning Committees were supported by planners from New York State Department of State and consultants from planning firms that specialize in engineering, flood mitigation solutions, green infrastructure, and more.

To ensure tangible progress on the county's NYRCR Countywide Resiliency Plan, the plan includes an implementation schedule that identifies each strategy; actions to be taken to implement the strategy; potential funding sources; target dates; and responsible parties.

The program has leveraged the Regional Economic Development Council's State Agency Review Teams (SARTs), composed of representatives from State agencies and authorities, for feedback on projects proposed by NYRCR communities. The SARTs review projects with an eye toward regulatory and permitting needs, policy objectives, and preexisting agency funding sources. The NYRCR Program is continuing to work with the SARTs to streamline the permitting process and ensure shovels are in the ground as quickly as possible.

### *The NYRCR Countywide Resiliency Plan*

Each NYRCR Planning Committee began the planning process by assessing storm damage and describing recovery needs. Next, the Planning Committee identified critical assets in the community and assessed the assets' exposure to risk. On the basis of this work, the Planning Committee described resiliency needs and opportunities. The Planning Committee then developed a series of reconstruction and resiliency strategies, and identified projects and implementation actions to help fulfill those strategies.

While developing projects for inclusion in this NYRCR Plan, Planning Committees took into account cost estimates, cost-benefit analyses, the effectiveness of each project in reducing risk to populations and critical assets, and potential funding sources. The list of projects presents a long-term approach to becoming more resilient that reflects a need for some actions to be staged before others can be taken, and recognizes that the availability of funds for implementing projects will change over time. Inclusion of a project or action in this NYRCR Plan does not guarantee that a particular project or action will be eligible for funding or that it will be implemented. In addition, implementation of the projects and actions found in this NYRCR Plan are subject to applicable Federal, State, and local laws and regulations.

On the pages that follow, you will see the results of months of thoughtful, diligent work by NYRCR Planning Committees, passionately committed to realizing brighter, more resilient futures for their communities. In the months and years to follow, many of the projects and actions outlined in this NYRCR Plan will become a reality helping New York not only to rebuild, but also to build back better. This NYRCR Countywide Resiliency Plan is an important step toward rebuilding a more resilient community.



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# Executive Summary

### *Overview of NY Rising Community Reconstruction Community: Madison County*

Severe rainstorms hit fifteen Upstate New York Counties from June 27 to July 4, 2013, causing massive flooding, erosion, property damage, long-term power outages for more than thirteen thousand residents, long-term unavailability of potable water, and even loss of life. The federal government declared a local state of emergency for Madison County along with 7 other counties and 15 local municipalities. The five hardest hit counties, including Madison County, were invited to participate in the New York Rising Community Reconstruction (NYRCR) Program. Three million dollars has been allocated for recovery and resiliency projects within this Community.

The documented damages, combined with the first-hand experiences shared by residents at multiple well-attended public engagement events led to the identification of several critical issues facing the Community. These issues served to define needs, opportunities, strategies, and eventually projects that would help make the Community more resilient and sustainable. Critical issues include the need to:

- Provide a more natural floodplain for the numerous streams and creeks that run through the County
- Stabilize streambanks and repair of severe erosion that has occurred
- Provide regular sediment and debris removal in high risk streams
- Strengthen the regulation of development in the floodplain
- Improve and strengthen communication systems before, during and after disasters
- Provide safer and more resilient housing options for those living in the floodplain
- Increase public education for homeowners, and potential homeowners, on the risks of living in a floodplain
- Improve emergency evacuation preparedness and procedures
- Implement innovative technology to strengthen the resiliency of key assets and create redundancy in the electrical power supply;
- Manage stormwater and water flow through the streams, creeks, and tributaries within the County
- Upgrade aging infrastructure

The Committee also identified several critical issues to be addressed at the regional level, which include:

- Improved coordination with other emergency service providers, municipalities and key institutional entities
- Strengthening of the local economy

*“By noon, we were under six feet of water. I’ve never been through anything like it. It was surreal seeing an air boat cruising down Sconondoa Street.”*

*– Jonathon Rauscher, Oneida City*



### *NYRCR Program: A Community-Driven Process*

Through multiple public engagements and discussions during Committee meetings, the Madison County NYRCR Planning Committee developed the following Vision Statement to guide the entire planning process and ensure that the recommended actions – included in the Madison County NYRCR Countywide Resiliency Plan (NYRCR Plan) – address the critical issues they identified:

*The communities of Madison County are dedicated to enhancing our rural charm, natural beauty, and strong community values, while preserving our family farms, growing our friendly neighborhoods and supporting our locally owned businesses by embracing smart growth strategies.*

*Our focus is on recovery from the summer storms of 2013 and reducing future risk from natural disasters. We will rebuild stronger, smarter and safer, to ensure the long term resiliency of our people, property and natural resources.*

All strategies and projects identified were measured against the Vision Statement to ensure that recommended actions would not detract from the Community achieving its desired goals.

The Public Engagement Process did not end with the development of the Vision Statement. In keeping with Governor Cuomo’s emphasis on bottom-up planning, members of the Community were involved in each step of the NYRCR Program. The NYRCR Planning Committee was composed of municipal representatives from across the County who understand the character of the Community, its needs, and strengths in good times and bad. As of July 31<sup>st</sup>, seven Committee meetings were held. All Committee meetings were open to the public, with meeting dates and times posted on the NYRCR website ([www.stormrecovery.ny.gov/nyrcr](http://www.stormrecovery.ny.gov/nyrcr)).

The Community at-large was invited to take part in the NYRCR Program through a variety of methods. Their feedback was reviewed by the Committee and incorporated into the decision-making that informed the development of this Plan.

### *Resilience Orientation*

The planning process for the development of the NYRCR Countywide Resiliency Plan utilized a three-pronged approach to help the Madison County Community rebound from the summer 2013 flood events and prepare for a safer and more sustainable future:

1. **Recover** – repair what remained damaged from the summer 2013 flooding
2. **Recover more resiliently** – wherever possible, use the repair as an opportunity to update or upgrade the damaged asset to reduce future flood risks
3. **Build resiliency** – looking to the future, beyond damages from the summer 2013 flooding, identify needs and opportunities to reduce flood risks to Madison County communities while bolstering the local economy



*“The splendid cooperation of the response community was outstanding. Local first response was almost immediately supplemented by regional assistance, and our state and federal partners responded with great speed.”*

*– Joe DeFrancisco, Emergency Preparedness Coordinator*

Recovery projects were relatively straightforward to identify because the impacts were in plain sight—washed out bridges and culverts, destabilized streambanks, and undermined roadways, retaining walls, and utilities. In some cases, the Community wished to restore damaged assets to their pre-storm condition, such as dredging and stabilization of stream banks. More often, the Community wanted to restore the *function* of the asset, but in an upgraded approach, such as with more storm-resilient construction. Examples of this include “rightsizing” of bridges and culverts, which refers to replacing a damaged bridge or culvert with one of appropriate size to handle a calculated flow; streambank stabilization with armoring and natural channel design to reduce future erosion; and relocation of damaged critical facilities out of the floodplain to ensure continuity of crucial operations in future flood events.

These resilient flood recovery projects served as a jumping off point to discuss Countywide resiliency needs, opportunities, and strategies with the Planning Committee and Madison County Community at large. A wide range of resiliency strategies were discussed, from emergency communications to floodplain expansion, from green infrastructure to protection of evacuation routes, from resilient housing construction to downtown revitalization. The Community is particularly enthusiastic about projects that aim to reduce flooding while protecting and growing the local economy. These include actions and investments that capitalize on Madison County’s natural and cultural resources, improve stormwater infrastructure in downtowns to spur revitalization, and increase housing options for young professionals, families, and the elderly outside of the flood zones and near downtowns.

### ***Final Plan as a Blueprint for Implementation***

The process of identifying post-storm needs and opportunities informed the Planning Committee’s development of strategies to resolve these needs and realize opportunities. In turn, the strategies helped to conceptualize and design projects to specifically address these needs and opportunities.

Strategies are approaches to the conceptualization of projects, programs, policies, or other actions that specifically address an identifiable need. Potential strategies span an array of methodologies and timeframes, from preparedness to retrofits, from immediate procedural improvements to long-range capital investments programs. Strategies may also include conservation of natural protective features, regulatory changes and building code updates, structural defenses, resilient retrofits, market measures, land use planning, and education and outreach in an effort to employ multiple, complementary actions rather than relying on a single means of protection.

Typically, there are several strategies to address a given need and the Committee and Community were tasked with assessing which strategies would best enhance Community assets, capitalize on opportunities, and resolve critical issues. As general resiliency strategies evolved into specific projects



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and actions, several factors were considered to begin prioritizing the most effective and feasible strategies, and thus identify the best use of recovery funds.

Each strategy that was elevated through the process met the following criteria:

1. Must reduce the current and projected level of risk and met an identified community need
2. Will contribute to the protection (or improve the resiliency) of vulnerable populations
3. Could feasibly be implemented through discrete programs and/or projects

Projects are the path to executing strategies and meeting the Community's need for resiliency. In the months and years to follow, many of the projects and actions outlined in this Countywide Resiliency Plan will become a reality helping Madison County not only to rebuild, but also to build back better.

**Table 1: Madison County Resiliency Strategies**

Strategy	Project Title
<b>Community Planning and Capacity Building</b>	
Provide flood proof emergency shelter and facilities for the Community.	Oneida Armory Flood Barrier Installation
Secure equipment necessary for emergency responders to function during a storm event.	Fire Department PFD's and Dry Suits
Flood proof existing electrical and natural gas infrastructure located in the floodplain and create a backup system of power.	Emergency Power Generation for Municipal Buildings and Shelter
Enhance communications and expand educational efforts so that people, businesses, and social service providers know what to expect and how to access assistance prior to, during, and immediately following a storm.	Countywide Emergency Communications Plan
Collaborate with nearby communities to foster regional cooperation in addressing flooding and related issues.	Emergency Stream Intervention Training
Expand, update, and strengthen local land use regulations and building codes to reduce development in areas at risk of flooding.	Resiliency Tools Guide
<b>Economic Development</b>	
Diversify the local economy, including tourism, light industry, small business, agriculture, and green industries.	Madison County Strategic Economic Development Plan Implementation
	Countywide Downtown Revitalization Plan
	City of Oneida Downtown Revitalization Plan
Create a marketing/branding strategy to attract visitors.	Countywide Wayfinding Signage Plan and
	Centralized Chamber of Commerce Feasibility Plan
Identify funding opportunities to attract and assist small businesses.	Extension and Recapitalization of the County's Microenterprise Program
<b>Health and Social Services</b>	
Upgrade and/or relocate critical government facilities and infrastructure out of the floodplain.	City of Oneida DPW Garage Relocation
	Relocation of the Oneida City Water Department Garage
	Relocation of the Oneida City Salt Shed
	Resiliency Evaluation of Municipal Facilities Countywide
Formalize a system with partnering organizations to provide services during and following a flood event.	Madison County Department of Health Data Management System
Planning and preparedness for protection of residents including the most vulnerable populations.	Vulnerable Populations Registry and Outreach



Table 1: Madison County Resiliency Strategies Cont'd

Strategy	Project Title
<b>Housing</b>	
Enhance public safety and wellbeing within flood impacted neighborhoods.	Flood Impacted Housing Demolition
Ensure a diversity of safe, affordable housing options in areas not prone to flooding.	Countywide Housing Needs Evaluation
	City of Oneida Housing Needs Evaluation
	City of Oneida Affordable Downtown Rental Housing
Provide incentives for elevation or retrofit of homes.	Residential Floodproofing Assistance Program
<b>Infrastructure</b>	
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage to repairing, improving and protecting.	Poolville Road Culvert Repairs
	Fearon Road Culvert Repairs
	Dugway Road Culvert Repairs
	Hart Road Culvert Repairs
	Reservoir Road Culvert Repairs
	Skaneateles Turnpike Culvert Repair
	Carey Road Culvert Repair
	Tallett Road Culvert Repair
	Williams Corners Road Culvert Repairs
	Roberts Road Culvert Repair
	Jones Road Repair
	Bonney Road Culvert Repairs
	Williams Road Culvert Repair
	Harris Road Culvert Repair
	Borden Road Culvert Repair
	Carncross Road Bridge Repair
	Falin Road Culvert Repairs
	Abbert Road Culvert Repairs
	Jones Road Culvert Repairs
	Hughes Road Culvert Repair
	Thomas Road Culvert Repair
	Greene Road Reconstruction
	North Lake Road at Blue Canoe Reconstruction
	Bishop Road Culvert Repair
	Quarry Road Culvert Repair
	Haslauer and Cook Road Culvert Repairs
	Maple Road Reconstruction
	Ridge Road Flood Reconstruction
	South Hill Road Stabilization and Restoration
	Thompson Hill Road Repairs
	Sunrise Boulevard Reconstruction
	North Lake Road Reconstruction
	Sealed Sanitary Manholes
Countywide Infrastructure Inventory and Mapping	
Countywide Stormwater Management Plan	



**Table 1: Madison County Resiliency Strategies Cont'd**

Strategy	Project Title
<b>Natural &amp; Cultural Resources</b>	
Stabilize stream banks that are severely eroded or at high risk of collapse.	Town of Brookfield Streambank Stabilization and Restoration
	Carey Road Streambank Stabilization and Restoration
	Route 20 Flooding Remediation
	Bronder Hollow Road Bank Stabilization and Restoration
	Maxwell Field Streambank Stabilization and Restoration
Restore and expand stream capacity by removing debris and sediment from floodwaters.	Countywide Stream Debris Removal
	Chittenango Creek Logjam Clearings
Mitigate stormwater runoff that leads to erosion and flash flooding of creeks on a regional basis and reconnect the floodplain.	Countywide Stream Maintenance Program
	Countywide Flood Mitigation Initiative
	Countywide Hydropower Feasibility Study
Support the economic viability of agriculture.	Agriculture and Farmland Protection Plan Update



## Section I: County Overview

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*Logos were painted on 16 barns in Madison County as part of the County's Bicentennial Celebration in 2006.<sup>1</sup>*



## NY Rising Madison County Resiliency Plan

*Madison County includes the City of Oneida; nine (9) Villages [Canastota, Cazenovia, Chittenango, DeRuyter, Earlville, Hamilton, Morrisville, Munnsville, and Wampsville]; and fifteen (15) Towns [Brookfield, Cazenovia, DeRuyter, Eaton, Fenner, Georgetown, Hamilton, Lebanon, Lenox, Lincoln, Madison, Nelson, Smithfield, Stockbridge, and Sullivan].*

Madison County is a 662-square mile area which includes 6 square miles of water bodies. Madison County is comprised of small hamlets and villages surrounded by working agricultural lands and state forests.

Madison County is part of three watersheds: the Susquehanna River Drainage Basin, the Oswego River Drainage Basin, and the Mohawk River Drainage Basin. Many rivers and streams wind through the County such as the Tioughnioga River, Oneida Creek, the

Chenango River and the Otselic River. Oneida Lake and Oneida Creek define part of the northern boundary. Additionally, the County boasts several lakes that provide recreational activities including Cazenovia Lake, DeRuyter Lake, and Hatch Lake. Figure 1 on the following page depicts Madison County.



*Dr. West Memorial Park in front of the Presbyterian Church in the Village of Chittenango*

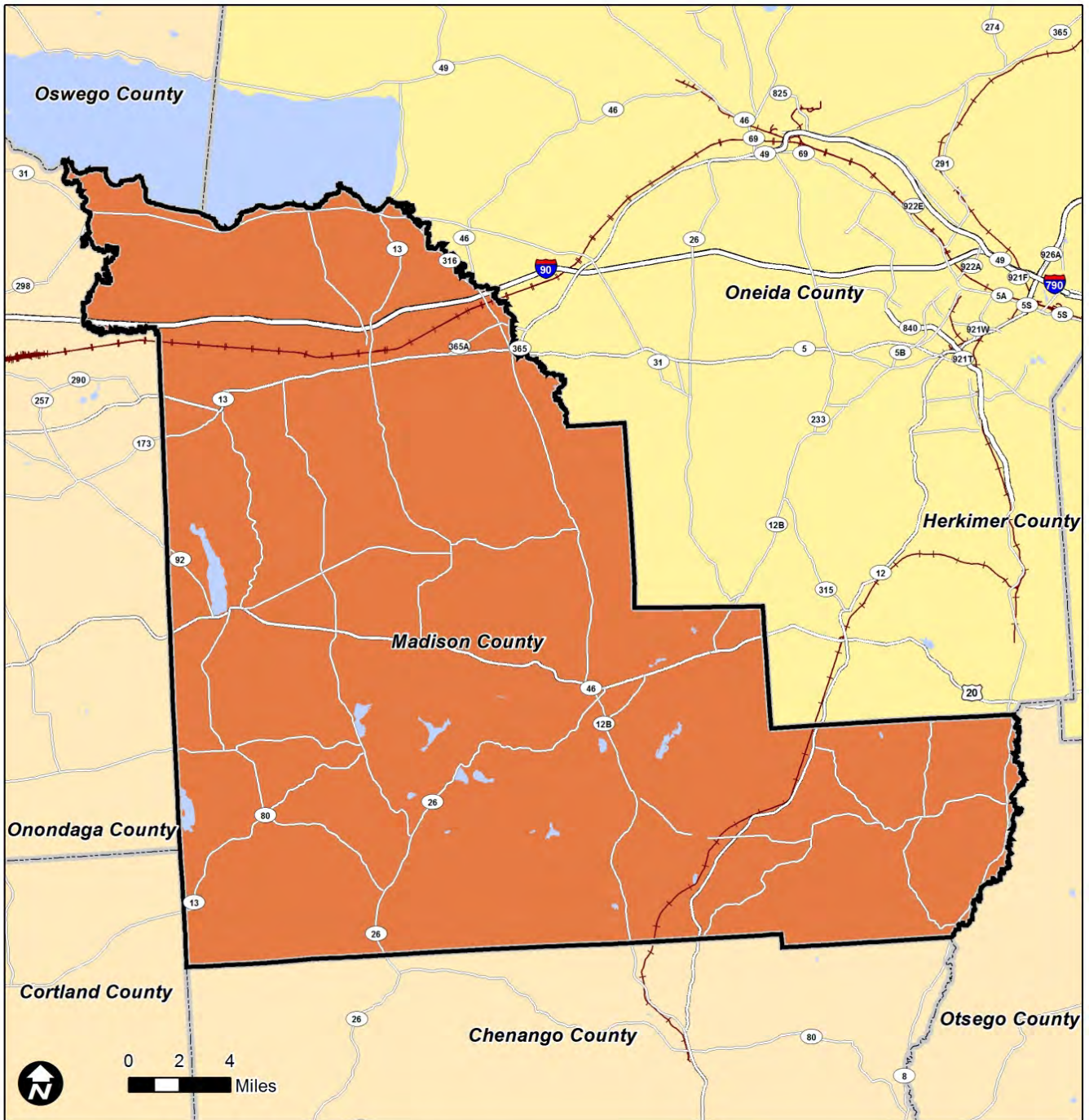


*Agricultural Land*





Figure 1: Location Map



Legend		Highways	
	Madison NYRCR Planning Area		Interstate
	Other NYRCR Planning Areas		State
			Railroad
			County Boundary

Source: NYS DOT, NYS DOS, MTA





## A. Planning Area

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The geographic scope of the NYRCR Plan is the entirety of Madison County with a more intense focus on areas: where assets are most at risk from flooding; where future construction or reconstruction of existing development should be encouraged or discouraged; or where key investment to improve the local economy can be instituted. These areas include the Villages of Canastota, Cazenovia, Chittenango, DeRuyter, Earlville, Morrisville, Munnsville, Poolville and Wampsville, the City of Oneida, and the Town of Hamilton. The Village of Wampsville also serves as the County Seat, providing services for the County as a whole (e.g. County Clerk, Health Department, and County Court to name a few). Oneida stands as the only city and the major population center in the County.

The spirit of Madison County is illustrated by its natural beauty, charming communities and valued history. Rolling hills, miles of farmland, natural trails and water features such as lakes, reservoirs, and waterfalls define the County's vibrant landscape. Each community's character is built upon vibrant community events and programs, historic architecture, neighborly attitudes and small town values. The history of the County is re-lived through historic hop house trails, museums, original structures and annual traditions.



*Colgate University in the Town of Hamilton*

Madison County's communities have a shared history of farming and manufacturing which can be attributed to its physical landscape, central location and transportation options. In recent years, the County's farmland has been compromised by residential and commercial growth. However, the County continues to be a community deeply defined by and dedicated to agriculture. Today, 50% of the County's land is farmland.<sup>2</sup> Nonetheless, the agricultural industry provides less than 1% of the jobs within the County.<sup>3</sup>

The population of Madison County has seen a gradual increase over the past two decades.<sup>4, 3</sup> The number of employed residents exceeds the number of jobs in the County. Fortunately, its proximity to



large cities, such as Syracuse and Utica, provides opportunities for employment and services outside the County. Syracuse, located in Onondaga County, is approximately 20 miles west of Madison County and had a population of approximately 144,669 in 2013 with 9,870 businesses in 2007.<sup>5</sup> Utica, located in Oneida County, is approximately 30 miles east of Madison and had a population of approximately 61,808 in 2013 and 3,683 businesses in 2007.<sup>6</sup> Advancements in industries within Madison County provide potential to sustain employment, economy, current residents and attract new residents and businesses.

### *Climate*<sup>7, 8</sup>

Madison County enjoys four seasons and boasts a significantly higher placement on the comfort index than the U.S average. The following table illustrates annual climate averages for Madison County.

**Table 2: Madison County Climate**

Climate	Madison County, NY	United States
Annual Rainfall	40.1 inches	36.5 inches
Annual Snowfall	96.7 inches	25 inches
Precipitation Days	153 days	100 days

During the summer 2013 storms, Madison County received a substantial amount of rain. On June 27, parts of Madison County had seen up to 4 inches of rainfall. The 24 hour accumulation from the morning of July 1<sup>st</sup> to the morning of July 2<sup>nd</sup> ranged from 0.5 inches to 6.0 inches in the southern part of the county. Because much of the ground was already saturated from heavy rains in the week prior, it could not absorb this additional, large amount of water.

### *Land Use and Land Cover*

Madison County is predominantly rural with forest comprising 41% of all land cover. The table below demonstrates the overall lack of development in Madison County, with under five percent of all land defined as developed.

**Table 3: Land Cover in Madison County<sup>9</sup>**

Land Cover Type	% of Total Land Cover
Water	1.2%
Developed	4.6%
Barren Land	< 0.5%
Forest	41.2%
Shrubland	7.7%
Herbaceous	3.4%
Pasture	19.2%
Cultivated	16.2%
Wetlands	6.6%



## *Hydrology*<sup>10</sup>

Madison County is located at the headwaters of three major drainage basins as follows:

- Susquehanna River Drainage Basin (304 square miles)
  - The southern 46.1% of the County is drained by streams flowing south into the Susquehanna River Basin, which flows to the Atlantic Ocean by way of the Chesapeake Bay in Virginia.
- Seneca-Oneida-Oswego Rivers Drainage Basin (324 square miles)
  - Streams in the northern 49.2% of the County are in the Seneca-Oneida-Oswego River Basin and flow north to Lake Ontario by way of Oneida Lake and the Oswego River. The primary tributaries that drain to Oneida Lake are Oneida, Cowaselon, Chittenango, and Limestone. This water eventually makes its way to the Atlantic Ocean at the Gulf of St. Lawrence in Eastern Canada.
- Mohawk River Drainage Basin (31 square miles)
  - A small area (4.7%) in the eastern part of the County is in the Mohawk River Basin. Oriskany Creek drains into the Mohawk River, which eventually flows into the Hudson River and enters the Atlantic Ocean at the New York Harbor.

Madison County's Hazard Mitigation Plan goes into great detail about flooding patterns in the County:

"Many of Madison County's flooding problems are closely related to its topography. Although, rainfall was greatest in the southern portion of the County during the summer 2013 storms, the worst flooding problems have historically been found in the northern municipalities: Town of Sullivan, Town of Lenox, City of Oneida, Village of Chittenango, and the Village of Canastota. These municipalities are located on relatively flat land north of the steep north facing Onondaga Escarpment. Water flows down the face of the escarpment in waterways such as Chittenango Creek, Oneida Creek, Cowaselon Creek, Canaseraga Creek, and Canastota Creek. During peak flows caused by either spring snow melt or heavy rains these creeks carry large quantities of water. When these waters reach the lowlands, the grade of the creeks flatten out, velocity slows, water carrying capacity drops, and these creeks overflow their banks. Flooding problems can be exacerbated by the fact that these creeks also drop much of their bedload of gravel at the base of these slopes as the water velocity drops. Over time the creeks lose their water carrying capacity as the stream bed becomes filled with gravel. In a similar fashion, tree limbs and other debris are carried down the hills and become logjams on the lowlands. It is not unusual for logjams to cause flooding outside of the 100 year flood corridor.

On a smaller scale, flooding also occurs in the southern townships in a similar manner to northern Madison County. In August of 2003, heavy rains in the Towns of DeRuyter and Cazenovia caused floods to occur at the base of hills where the grade of creeks flattens out. Large bedloads of gravel were deposited overnight. Gravel deposits filled in culverts under Pompey Hollow Road in Cazenovia, Route 13 in DeRuyter, and Crumb Hill Road in DeRuyter causing water to overflow the roadways. Both Towns were declared disaster areas. Damages from this overnight storm were \$700,000.



## NY Rising Madison County Resiliency Plan

The manner in which flooding occurs is unique to each municipality. Some Towns and Villages suffer less flooding than others.”

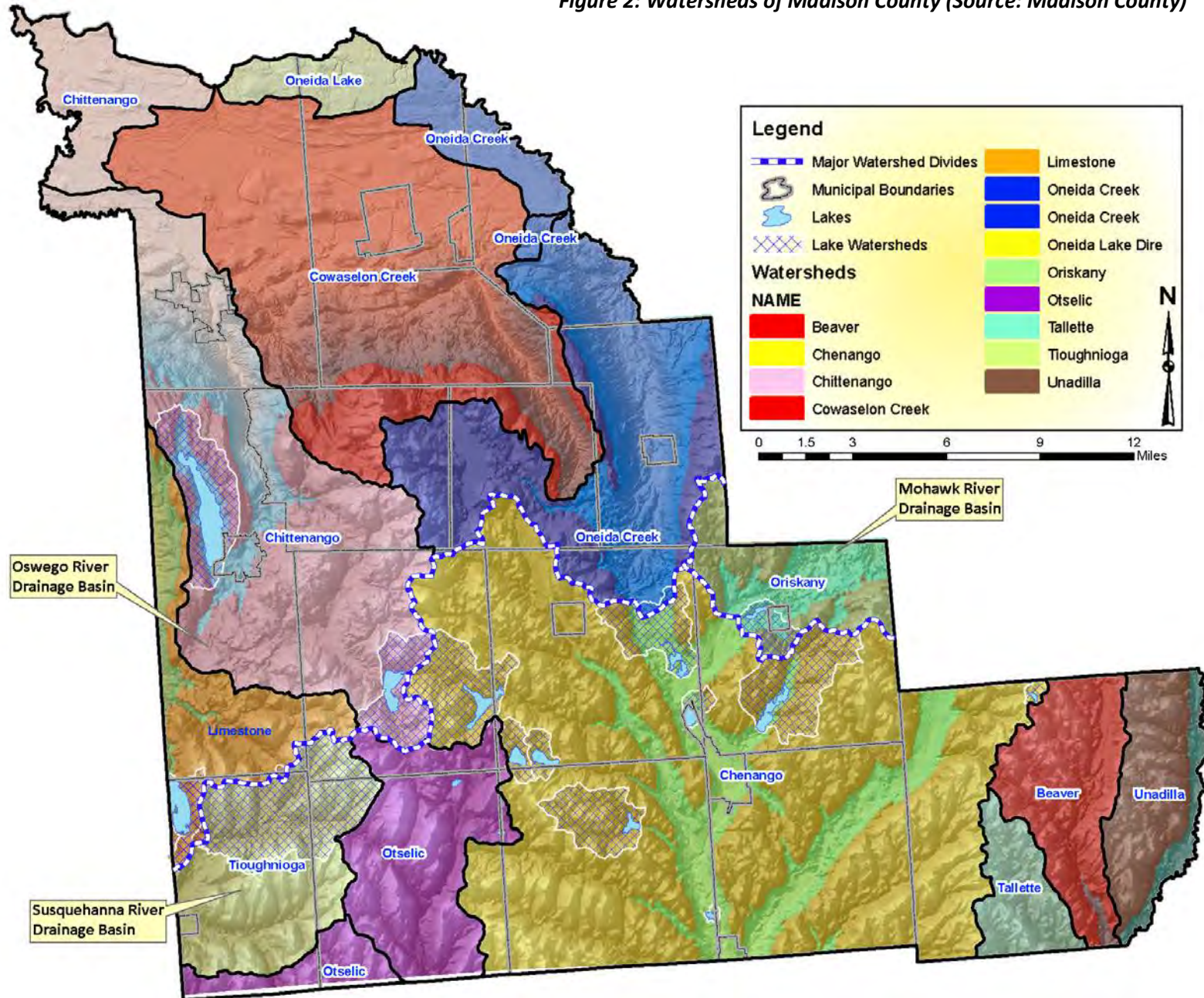


*Chittenango Creek in the Town of Cazenovia*



# NY Rising Madison County Resiliency Plan

Figure 2: Watersheds of Madison County (Source: Madison County)





## *Countywide Demographic Overview*

The Census data provided below is intended to provide an overview of the composition and general characteristics of the Community.<sup>11</sup> In addition to County-level demographic data, demographics for the City of Oneida are also provided in order to offer a more detailed depiction of the area and a basis of comparison, where appropriate.

### **Population, Race and Age**

The population of Madison County has increased by 5.8% from 2000 to 2010. In 2010, the County's population was reported as 73,442. The County's median age is 35.9.<sup>12</sup> The City of Oneida stands as the major population center of the County with a population of 11,393. From 2000 to 2010, Oneida experienced a modest 3.7% increase in population.

### **Income and Poverty**

The median household income for Madison County residents is \$52,293 compared to the NYS median household income of \$57,685. Approximately 11% of the population is living below the poverty line in comparison to the 15% of NYS residents living in poverty.<sup>13</sup> The median household income in Oneida is \$45,152 and 12.9% of Oneida's population is living in poverty.

### **Employment and Journey to Work**

Nearly 60% of Madison County residents are in the labor force. Of those in the labor force, 56.2% are employed while 3.6% are unemployed.

For the 96% of County residents (workers 16 and over) not working from home, the mean travel time to work is 22.6 minutes. Few residents in the County travel more than an hour to get to work.<sup>14</sup> However, nearly half (48.5%) of Madison County residents commute outside the County for work.<sup>13</sup>

### **Key Industries**

The national trend of re-locating manufacturing facilities overseas has impacted the County's economy. However, manufacturing remains a key source of employment for County residents. The manufacturing industry is one of the four major employment sectors within the County.<sup>2</sup> The other major employment sectors are: education, health care and retail. Currently, sectors such as management, finance and insurance and arts and recreation are the fastest growing industries in the County.<sup>2</sup>

The local economy is also supported by area colleges. The County is home to Colgate University, Cazenovia College and the State University of New York at Morrisville. Other notable educational institutions in neighboring counties are only a short trip away. The presence of colleges and universities increases the population's access to education, provides employment, attracts residents, and offers cultural events and programs.

The County's location and geographical assets also provide vast potential for economic success in additional industries.<sup>4</sup> Renewable energy initiatives and the emergence of small farm operations have created jobs and attracted a new brand of tourism to Madison County.



## Housing

Within the County, 12.6% of the housing units are unoccupied. Of the occupied units, 75.7% are owner occupied and 24.3% are utilized as rental properties.<sup>12</sup> Of the total housing units in the City of Oneida, 6.3% are vacant, 57.4% of the housing units in Oneida are owner occupied, and 42.6% are occupied by renters.

## Guidance and Insight from Demographic Analysis

The demographic analysis indicated a few important trends and characteristics that were helpful in shaping the identification of needs, opportunities, and projects for the NYRCR Community of Madison County. The number of employed people living in Madison County is greater than the number of jobs in Madison County. Major employment sectors are education, health care, manufacturing and retail. The highest percent of positive change was within the finance and management sector.

The County has experienced some population growth during the past two decades. In order to maintain/improve the County's economy, focus should be on protecting land, supporting businesses that keep people visiting and spending money in the County and increasing local jobs that keep people working within the Community. The more people that work and visit the communities, the more initiatives will be supported such as 'Buy Madison,' which promotes local purchasing of goods and services, from visitors and residents alike, to improve local businesses and to generate sales tax revenue for Madison County and its municipalities.<sup>15</sup>

The following is a brief overview of the City of Oneida and towns within Madison County.

### *City of Oneida* <sup>16, 17, 18 19, 20</sup>

The City of Oneida encompasses a total area of 22.1 square miles. Oneida was once a booming manufacturing and farming town. Today, much of the land once used for farming is occupied by both residential and commercial structures. Oneida has been able to maintain some of its architectural history with its 19<sup>th</sup> century Victorian homes. The business district of Oneida has transitioned from the downtown area and is now concentrated along the Route 5 corridor. While Oneida is a center of employment for the County, many City residents commute to the cities of Syracuse and Utica for work.

Oneida's Department of Planning and Development directs the planning, zoning, community development and economic development within the City. Ongoing development includes the Route 5 corridor project which focuses on improving transportation, and the Oneida Rail Trail; a project aimed at repurposing the City's old







## NY Rising Madison County Resiliency Plan

rail tracks into bike trails. In addition, the City recently conducted a walkability study of the downtown area. The study aims to guide revisions to the City's Comprehensive Plan.

The Oneida Creek serves as the eastern and northern boundaries for the City and was the source of flooding during the summer 2013 storms for the City. The Cowaselon Creek runs through the western area of the City. Other waterbodies include small ponds. Ten homes on Schoolheimer Road and two homes on Kelly Road suffer repetitive flooding.

### *Town of Brookfield* <sup>21, 22 23, 24,25</sup>

The hills and valleys of Brookfield spread out across the southeast corner of Madison County. Amid its beautiful landscape is the Unadilla River as well as many springs and falls. Brookfield is known for dairy farming, its largest industry, and conservation of its natural resources. The Brookfield Trail System travels through over 13,000 acres and three state forests (Beaver Creek, Brookfield Railroad and Charles E. Baker). The trail is utilized year round for activities such as hiking, bicycling, snow-mobiling and horseback riding.

The Town of Brookfield adopted their Comprehensive Plan in 2014 to guide development within its community. The plan aims at preserving the agricultural traditions of the Town while increasing economic opportunity for residents. The Town's plan is to manage expansion, protect its water, limit road use, diversify agricultural pursuits and attract both small and environmentally friendly businesses.

Many stream and creeks run through the Town including: Sangerfield River, Pleasant Brook, Number Six Brook, Handsome Brook, Shawter Brook, Tallette Creek, West Creek, Beaver Creek, Button Creek, and the Unadilla River which also serves as the eastern boundary for the Town. There are also various unnamed tributaries to these waterways within the Town. Flooding from the summer 2013 floods left many of these waterways in need of streambank stabilization and restoration. Other waterbodies include Gorton Lake, Woodland Pond and small ponds.

### *Town of Cazenovia* <sup>26, 27, 28, 29, 30</sup>

The Town of Cazenovia is known for its preservation of open space and celebrated heritage. Within the Town is the Village of Cazenovia, situated on the shores of Cazenovia Lake and surrounded by active farmland. The village has managed to maintain both its historic structures and original layout despite commercial growth in the area. Cazenovia's population has grown and the business district no longer provides sufficient employment for residents. The majority of residents in Cazenovia commute to surrounding areas



*Downtown Cazenovia*



for employment. Cazenovia is an anchor for economic development within the County.

Cazenovia is one of two Towns within the County where manufacturing is on the rise with businesses such as Marquardt Switches, Harvest Moon Cidery, Owerea Vineyards, and Thrush Industrial Park.

Major waterways within the Town of Cazenovia include East Branch Limestone Creek and Chittenango Creek, which forms the northeastern border of the Town. There are also many smaller unnamed tributaries and creeks. Other waterbodies include Cazenovia Lake, which is roughly four miles long and half a mile wide.

### *Town of DeRuyter*<sup>31, 32, 33</sup>

The rural community of DeRuyter makes up the southwest corner of the County. Its close proximity to Syracuse and Cortland offer residents access to employment and conveniences. DeRuyter's serene hills and valleys, and the presence of water features such as the Tioughnioga River and DeRuyter Reservoir provide year round outdoor activities. DeRuyter has a large Amish population whose presence is observed by small farm stands and horse and buggies along town roads.

Major waterways within the Town of DeRuyter include Middle Branch Tioughnioga Creek, East Branch Tioughnioga Creek and Limestone Creek along with many smaller unnamed tributaries and creeks. The DeRuyter Reservoir is located in the northwestern corner of the Town.

### *Town of Eaton*<sup>34, 35, 36</sup>

Eaton encompasses an area of 45.6 square miles, characterized by farmland and a multitude of water features including lakes, reservoirs and ponds. Eaton's Village of Morrisville is home to the State University of New York (SUNY) at Morrisville. SUNY Morrisville supports the local economy by providing jobs, bringing visitors to the area and preparing students to contribute to the agrarian community.

Major waterways within the Town of Eaton include Chenango River, Blue Creek, Callahan Brook and Eaton Brook as well as many smaller unnamed tributaries and creeks. Other waterbodies include Hatch Lake, Leland Pond, Woodman Pond, Bradley Brook Reservoir, part of the Eaton Reservoir and smaller ponds.

### *Town of Fenner*<sup>37, 38, 39, 40</sup>

Fenner spans an area of 31.1 square miles of land and is surrounded by the Towns of Lincoln, Sullivan, Smithfield, Nelson and Cazenovia. Fenner is best known for its partnerships and advancements in green energy technology. Notable facilities include Fenner Wind Farm, the Fenner Renewable Energy Education Center and Fenner Alps Weather Station.

Major waterways within the Town of Fenner include Munger Brook, Canaseraga Creek, Canastota Creek, Clockville Creek and Chittenango Creek, which forms the northeastern border of the Town. There are also many smaller unnamed tributaries and ponds.



## *Town of Georgetown* <sup>41, 42, 43</sup>

The small rural community of Georgetown is located at the southwest border of the County and contains Muller Hill State Forest. The forest's topography encourages activities such as snowmobiling, cross country skiing and trail hiking.

Major waterways within the Town of Georgetown include Otselic River, Otselic Creek, Middle Branch Tioughnioga Creek, East Branch Tioughnioga Creek, Muller Brook, Lenanon Brook, South Lebanon Brook and the Mann Brook. There are also many smaller unnamed tributaries and creeks. Other waterbodies include the Torpy Pond, Georgetown Reservoir and smaller ponds.

## *Town of Hamilton* <sup>44, 45, 46, 47</sup>

Hamilton is best known as home to the prestigious Colgate University. The University is located in the Village of Hamilton; a village often described as a little City due to its active, diverse and densely populated community. Hamilton's downtown gathers residents and visitors with its shops, restaurants, and community events. In 2012, Hamilton was named by Forbes magazine as one of the friendliest towns in America. In addition, Hamilton shares the Village of Earlville with the neighboring County of Chenango. Earlville offers culture, history and recreation. It is important to note about 60% of Town residents live within the village of Hamilton whose land area makes up less than 6% of the Town.

Major waterways within the Town of Hamilton include the Sangerfield River, Payne Brook and Pleasant Brook as well as many smaller unnamed tributaries and creeks. Other waterbodies include Taylor Lake, Poolville Pond, Earlville Reservoir and smaller ponds.

## *Town of Lebanon* <sup>48, 49, 50</sup>

The largely rural Town of Lebanon is located at the southern portion of the County between Georgetown and Hamilton. The Town is made up of six hamlets.

Major waterways within the Town of Lebanon include Bradley Brook, Lebanon Brook, South Lebanon Brook, Payne Brook, Chenango River and Stone Mill Brook along with many smaller unnamed tributaries and creeks. Other waterbodies include the Lebanon Reservoir, Earlville Lake, Stone Mill Pond, Seymour Pond and smaller ponds.

## *Town of Lenox* <sup>51, 52, 53, 54, 55, 56, 57, 58</sup>

The Town of Lenox is comprised of historic villages surrounded by open space and Oneida Lake at its northern border. The Town's small Village of Wampsville is the County seat of Madison County. A revitalized portion of the Erie Canal runs through the center of Canastota, a Village which is the most populous area in Lenox. The Great Swamp Conservancy in Canastota is a 60-acre restored wetland, with natural trails and 900 foot. As an important resting area for migratory birds, visitors to the Conservancy can see over 185 different bird species.

Major waterways within the Town of Lenox include Cowaselon Creek, Owlville Creek, Canastota Creek, and Oneida Creek which forms the northeastern border of the Town. There are also many smaller



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unnamed tributaries and creeks. Other waterbodies include Oneida Lake, which forms the northern border of the Town, and unnamed ponds.

### *Town of Lincoln*<sup>59, 60, 43</sup>

Lincoln is an agricultural community with a history of dairy farming and hop production. The small town feel of Lincoln is fostered by family businesses such as Callahan-Nannini Quarry. However, the community plans to encourage future business development within the area through the creation of wind power and gas to power facilities.

Major waterways within the Town of Lincoln include Clockville Creek, Canastota Creek, Owlville Creek, Cowaselon Creek and Limestone Creek. There are also many smaller unnamed tributaries and ponds.

### *Town of Madison*<sup>61, 62, 63, 64</sup>

The County takes its name from the quaint agrarian community of Madison. The Town is situated at the eastern border of the County. Its history of agriculture is alive today with its many organic produce farms. Madison's hamlet of Bouckville draws visitors each year for its Antique Week.

Major waterways within the Town of Madison include the Oriskany Creek and the Payne Brook as well as many smaller unnamed tributaries and creeks. Other waterbodies include Lake Moraine, Madison Lake, Madison Reservoir, Lyons Pond and smaller ponds.

### *Town of Nelson*<sup>65, 66, 67, 68, 69, 70, 26</sup>

The Town of Nelson is a rural community located in the western part of the County. The Town adopted a revised comprehensive plan in 2007. The plan's priorities include maintaining the Town's natural resources and upholding the community's agrarian character. Manufacturing is on the rise in Nelson. The Nelson Farms processing facility owned by SUNY Morrisville provides support to entrepreneurs within the agri-business industry.

Major waterways within the Town of Nelson include Otselic River, East Branch Limestone Creek, Chittenango Creek, East Branch Limestone Creek and Callahan Brook along with many smaller unnamed tributaries and creeks. Other waterbodies include the Eaton Reservoir, Tuscarora Lake and smaller ponds.

### *Town of Smithfield*<sup>71, 72, 73, 74, 75</sup>

The Town of Smithfield is situated in the central part of the County. The Town's most notable area is its hamlet of Peterboro, once a major stop on the Underground Railroad and home to the well-known abolitionist Gerrit Smith.

Major waterways within the Town of Smithfield include Cowaselon Creek and the Oneida Creek as well as many smaller unnamed tributaries and creeks. Other waterbodies include Miller Lake and smaller ponds. Flash Flooding frequently occurs in a tributary to Cowaselon Creek. During peak runoff events, a large bedload of gravel is carried by this tributary. The gravel clogs the culvert, and flood waters and debris overflow across Creek Road.



### ***Town of Stockbridge*** <sup>60, 76, 77, 78</sup>

The rural Town of Stockbridge is located on the eastern border of the County. Within the town is the Village of Munnsville, home to Gravity Fest; an annual skateboarding festival held during the month of August.

Major waterways within the Town of Stockbridge include the Oneida River, Blue Creek and Oriskany Creek as well as many smaller unnamed tributaries and creeks.

### ***Town of Sullivan*** <sup>79, 80, 81, 82, 83, 43</sup>

Situated at the northwest corner of the County is the Town of Sullivan. Its natural beauty is highlighted by Chittenango Creek's 167 foot waterfall, located in Chittenango Falls State Park. Within the Town is the small Village of Chittenango, best known as the birth place of L. Frank Baum, author of the Wizard of Oz.

Major waterways within the Town of Sullivan include Canaseraga Creek, Cowaselon Creek, and the Chittenango Creek which forms the northwestern border of the Town. There are also many smaller unnamed tributaries and creeks. Other waterbodies include Oneida Lake, which forms the northern border of the Town, and unnamed ponds.



## B. Description of summer 2013 storm damage and locations prone to flooding

The impact of the 2013 summer storms was significant across the entire region, with severe water damage to, or complete destruction of electric substations, water systems, wastewater treatment plants, roads, bridges and culverts, homes, recreational facilities and municipal buildings. Flooding from the storms was primarily caused by the rapid overflowing of the numerous creeks and streams that flow throughout the County. The creek and tributary systems that caused the most significant amount of damage from flooding included but were not limited to: Oneida Creek, Chittenango Creek, the Chenango River, the Unadilla River, Electric Light Stream, Muller Brook, Eaton Brook, and Pleasant Brook. Impacts were exacerbated by the nearly 30 days of rainfall prior to the severe 2013 storms, creating saturated soil conditions.

The effects of the storms have been well documented. Nevertheless, it is important to characterize the effects from the storms, and the impact on the land, the people, and the economy in order to understand the recovery needs for the Community, and the projects identified by the Madison NYRCR Planning Committee.

According to record NOAA data, areas in Madison County received up to 4.5 inches of rain between June 27th and 28<sup>th</sup>. The USGS gauges reported Oneida Creek at over 16 feet in the City of Oneida which exceeded the Creek's typical base flow of 3 feet and the National Weather Service flood stage of 11 feet.

In Madison County, the areas hardest impacted by the summer 2013 flooding were in the northern, central and southern parts of the County. Most of the flooding was the result of



*Storm Damage (Source: Madison County)*

flash flooding in areas that were already highly saturated. In the northern part of the County, the City of Oneida was severely impacted by the overtopping of the Oneida Creek on June 28, 2013. Entire neighborhoods including the Oneida Flats neighborhood were flooded resulting in the displacement of residents. The lack of water rescue equipment further complicated emergency rescue.

Additionally, the first floor of the emergency shelter in Oneida (the Armory) flooded forcing displaced residents to seek shelter with friends, family or in hotels. A number of businesses and municipal facilities were also damaged in the City of Oneida and Madison County. The City of Oneida DPW garage was



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flooded resulting in the loss of equipment. The flooding in Oneida caused power outages and created safety concerns forcing a public safety curfew to keep residents away from unsafe structures.

In the southern and central part of the County, small communities such as Nelson, Hamilton, Brookfield, Eaton, Morrisville and DeRuyter were also impacted by flash flooding in the days following the Oneida flooding. Severe erosion exposed gas lines in several communities and above ground fuel tanks were displaced causing potential environmental impacts. Roads and culverts were damaged by the sheer force of the water and from floating debris. Many homes were evacuated including 220 homes in the City of Oneida, 14 in the Hamlet of Eaton, 6 in the Town of DeRuyter and 2 in the Town of Brookfield. Agricultural crop damage was also widespread throughout the County. Flooding and erosion of corn and hay fields in the region negatively affected the region's dairy farmers, who rely on an abundant corn crop and high-quality hay supply to feed their cows throughout the year.<sup>84</sup>

The Town and Village of DeRuyter were entirely cut-off for several hours the evening of July 1, 2013. All roadways into and out of the Village were closed due to flooding or damage caused by the overtopping of the Tioughnioga River. Several homes along the Tioughnioga River in the Village of DeRuyter were evacuated.

Carey Road in DeRuyter, for example, was closed for five days preventing residents from leaving their homes. In the Town of Eaton, Williams Corner Road was severely damaged, which resulted in its closure for five weeks making access to properties difficult. Additional flooding from a tributary to the Chenango River onto State Route 20 caused lane closures and damages to eight homes and businesses in Morrisville.

The following types of damage occurred in Madison County as a result of these storms:

### *Economic*

- Numerous commercial assets flooded and were impacted such as:
  - Malone Service Center, Herb Philipson's, Wagon Wheel and 40 other commercial properties in the City of Oneida
  - Oneida Commons (retail and tourism)
  - Shepard's Garage on Main Street in Morrisville
  - Restaurant in Nelson
  - Entire Village of DeRuyter cut off for hours due to flooded roadways, including commercial area and homes
- Significant crop losses due to flooding in this highly agricultural area

### *Housing*

- Many individual homes flooded Countywide with areas in DeRuyter, Nelson, Brookfield and Oneida experiencing significant impacts
- Emergency evacuations of numerous homes: 220 homes in the City of Oneida, 14 in the Hamlet of Eaton, 6 in the Town of DeRuyter and 2 in the Town of Brookfield



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- Homes in low income areas such as the Oneida Flats significantly impacted (200+ housing units flooded, approximately 30 homes cannot be returned to, 67% on public assistance)
- Twenty homes evacuated in Eaton

### *Infrastructure*

- Overflow from streams impacted the dewatering facility in Oneida
- Oneida DPW Garage and fueling station flooded. Two vehicles damaged, others were able to be relocated
- Electrical outages and impacts to the power grid
- Difficulty for National Grid to access homes to turn off gas and electric due to severe flooding. Local assessment crews were in the field to assist customers
- Significant damage to roads and culverts Countywide, on both local and County routes. Damages impaired vehicular travel and water flow. In the Town of DeRuyter alone 14 roadways were impacted.
- Eaton, Nelson and Madison areas experienced severe erosion from flooding leading to exposed gas lines
- City of Oneida wastewater treatment plant (located next to Oneida Creek on Harden St) experienced damage to effluent building and digester rooms. Approximately \$1.4 million in damage.
- Hydrants impacted when hit by debris in the City of Oneida



*Damage to Abbert Road in the Town of Madison (Source: Madison County)*





## *Natural and Cultural Resources*

- Flood debris clogged stream channels and required removal
- Significant damage to stream channels, such as the Oneida Creek, Tioughnioga Creek, Chenango River, Chittenango River, Muller Brook, Mill Creek, Chittenango Creek and several other streams and tributaries
- Damage to various golf courses (Seven Oaks, Castlewood, etc.)
- Fuel oil and propane tanks were dislodged and leaked, causing environmental and public health concerns
- Maxwell Field and Carinci Park in Oneida damaged
- Overall, more than 100 miles of the New York State Canal System were closed for days, and subsequently impacted by debris and flooding

## *Health and Social Services*

- Oneida Armory (emergency shelter) flooded and displaced people seeking emergency shelter (damage to lower level and elevator)
- Ambulance service in Oneida flooded
- Lack of electricity for street lights led to public safety concerns
- First ever water rescues for first responders
- Isolated residents in DeRuyter and Brookfield were unable to receive help from emergency personnel
- Flood waters and standing water provided optimal breeding conditions for mosquitoes, sparking public health fears over mosquito-borne illnesses – West Nile Virus and Eastern Equine Encephalitis



*Flooding at Oneida Armory (Source: City of Oneida)*

Perhaps the best way to assess the damage is to recognize the sheer number of people and resources that were needed in the days and months following these storms to aid the communities:

- Emergency rescue organizations (such as United Way, Red Cross, and Salvation Army) provided clean-up kits, food, and water via mobile units and roving canteens
- In the immediate aftermath, the State employed dozens of resources to help local residents and officials:
  - New York State Police Troop D assisted with emergency evacuations and maintaining the public safety curfew in Oneida
  - New York State Division of Homeland Security and Emergency Services assisted with organization of emergency services



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- New York State Office of Fire Prevention and Control Damage Assessment Response Team provided damage assessment and code enforcement assistance
- New York State Department of Environmental Conservation Spill Response Team provided hazardous materials cleanup assistance
- The State activated a New York State Flood Helpline to provide information to residents.
- New York State Department of Transportation mobilized quickly to provide assistance to local officials.

### *Recovery Efforts*

New York State Homes and Community Renewal (HCR) administered the Mohawk Valley and 2013 Upstate Recovery Program created by Governor Cuomo to provide assistance to homeowners, small business owners, and farmers who were victims of the floods. It was intended to provide immediate recovery assistance to victims, and to address gaps in disaster related coverage, such as insurance.

Each municipality, along with the County, received substantial assistance repairing roads and culverts from the NYS Department of Transportation in the days and weeks following the storm event. Additionally, many projects including culvert replacements and road repairs were completed with assistance from FEMA.

Recovery efforts also involved many local infrastructure repairs that were completed by municipalities. In the Town of DeRuyter, for example, the Town repaired the Smith Ambulance garage driveway after it was damaged in the flooding. The repairs also included stream bank stabilization along the Tioughnioga River. In the City of Oneida, the City repaired the DPW garage to the extent it could to allow for operations to continue. However, structural concerns still exist at the facility.

The Madison County Public Health Department had a significant role in three areas immediately following the storms: environmental health, preventative health and health promotion. Their Disease Surveillance and Response Committee was able to mobilize within 48 hours to address issues resulting from the flooding. From an environmental health perspective, the Health Department provided technical assistance to local water and wastewater operators to get systems back on line and also provided educational outreach to the public.

The preventative health outreach included providing vaccinations to volunteers and residents on site of the locations hardest hit. Over 540 vaccinations were given within 2-3 days of the storms.

The health promotion outreach included distributing materials for the public, going door to door, with information ranging from mold prevention to mosquito breeding prevention and safety. Information was also made available on the County's website.

Individual communities also reached out to their residents during and immediately following the flooding. The Town of DeRuyter, for example, provided:

- A Flood Relief Program for low-to-moderate income households (in accordance with U.S. Dept. of Housing and Urban Development's definition of "low-to-moderate") where up to \$5,000 was made available to four qualifying households



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- Multiple press releases to inform residents of emergency orders and available assistance programs
- Facebook posts to inform public on relief efforts (total reach was 16,642 people)
- With the Madison County Solid Waste Department, dumpster service for all residents to discard flood debris



## C. Critical issues

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The NYRCR Madison County Planning Committee (Committee) expressed concern about a variety of resiliency issues relating both to protecting the life and safety of Community members in the face of storm events and preserving the unique nature of the Community. Some of the most significant and critical issues identified include:

**Natural Environment:** Madison and the surrounding counties contain a complex web of streams, creeks and rivers that comprise a number of watershed basins that drain the region. Flooding in the County typically occurs from peak flows during the springs snow melt or heavy rains, although logjams and debris buildup also cause flooding outside of the 100 year flood corridor. Much of the flooding is attributed to the County's topography: when waters flow down the steep Onondaga Escarpment and reach lowland areas, the grade of the creeks flatten out, velocity slows, water carrying capacity drops, and these creeks overflow their banks. Because watershed boundaries are not contained by county or municipal boundaries, controlling storm water runoff and mitigating future flooding needs to be approached in a comprehensive manner at the regional level.

**Economic Development:** The Central New York region has a very diverse economy that is supported by a growing workforce, a well-developed infrastructure base, and strong academic resources. However, the region is economically challenged as indicated by a variety of statistics showing stagnant population base, low per capita income, and areas of high long-term unemployment.<sup>85</sup> The Central New York Regional Economic Development Council (CNY REDC) identified the following economic barriers: the high cost of doing business, fragmented government, "brain drain" (loss of younger workers and lack of diversity making it difficult to attract and retain talent), and concentrated areas of poverty.<sup>92</sup> To address these challenges, various strategic economic development plans have been developed by the region over the past twenty years which include the CNY Comprehensive Economic Development Strategy (CNY CEDS), Vision 2010: A Regional Economic Development Strategy for Syracuse and Central New York, and the Essential New York Initiative. Together these represent a short-term economic development strategy and a long-term comprehensive approach to economic growth.<sup>85</sup>

**Utilities and Infrastructure:** Electricity and the susceptibility of the power grid are both national and regional issues of concern, as well as a County concern. The summer 2013 flooding demonstrated the vulnerability and risk of critical infrastructure systems, such as electricity, gas and water supply, particularly in the City of Oneida. Concern was also expressed over continuous damage to a large quantity of culverts throughout the County. Damage to culverts has often lead to subsequent damages to roadways, impeding traffic flow as well as damage to adjacent land and homes.

**Climate Change:** Climate scientists predict that increasing average global temperatures will have discernible impacts at the local level. According to the New York State Energy Research and Development Authority (NYSERDA) ClimAID Team<sup>86</sup> in a 2011 report, annual average temperatures in New York State have risen by 0.6°F per decade since 1970. Additionally, "intense precipitation events (heavy downpours) have increased in recent decades." It is anticipated that the frequencies of extreme heat events, warm season droughts and heavy precipitation events will continue to increase. These



changing climate conditions have local repercussions, such as uncertainty of water resources, ecosystems, and agriculture, susceptibility of energy and telecommunications networks, and exacerbation of public health issues especially for vulnerable populations. The negative effects on water supply could prove very difficult for Madison County in terms of energy generation, since there are several hydroelectric dam operations within the County. If water levels were to shrink substantially, the County may need to employ other methods of electricity generation. Additionally, increased costs for farming could be debilitating to the economy since dairy farming is an important aspect of the local economy.

Specific issues the Community identified include:

- Providing a more natural floodplain for the numerous streams and creeks that run through the County
- Streambank stabilization and repair of severe erosion that has occurred
- Providing regular sediment and debris removal in high risk streams
- Strengthening the regulation of development in the floodplain
- Improving and strengthening communication systems before, during and after disasters
- Providing safer and more resilient housing options for those living in the floodplain
- Increasing public education for homeowners, and potential homeowners, on the risks of living in a floodplain
- Improving emergency evacuation preparedness and procedures
- Implementing innovative technology to strengthen the resiliency of key assets and create redundancy in the electrical power supply
- Managing stormwater and water flow through the streams, creeks, and tributaries within the County
- Upgrading aging infrastructure

The Committee also identified several critical issues to be addressed at the regional level, which include:

- Improving coordination with other emergency service providers, municipalities and key institutional entities
- Strengthening the local economy



## D. Vision

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The NYRCR Madison County Committee developed the following vision statement to guide the entire planning process and to ensure that the recommended actions included in this plan address the critical issues identified.

### Vision Statement

*The communities of Madison County are dedicated to enhancing our rural charm, natural beauty, and strong community values, while preserving our family farms, growing our friendly neighborhoods and supporting our locally owned businesses by embracing smart growth strategies.*

*Our focus is on recovery from the summer storms of 2013 and reducing future risk from natural disasters. We will rebuild stronger, smarter and safer, to ensure the long term resiliency of our people, property and natural resources.*



*Marquee advertising a NY Rising public meeting in the City of Oneida at the Kallet Theater.*



## E. Relationship to Regional Plans

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Due to the character of the County, many towns and villages share similar challenges as well as opportunities relative to the natural environment, physical infrastructure, economic development and other built systems.

To better understand the planning environment and the work done to date within Madison County, as well as the regional level, an effort was undertaken to review pertinent plans, studies, and reports. The following plans were identified and reviewed:

- *Madison County Community Health Assessment (2013)*
- *Madison County Planning Department Annual Reports (2009-2012)*
- *Central New York Regional Economic Development Council Strategic Plan (2011) and Updates*
- *Madison County Water Quality Strategy (2011)*
- *Madison County Coordinated Public Transit-Human Services Transportation Plan (2010)*
- *Madison County Multi-Jurisdictional Hazard Mitigation Plan (2009)*
- *Madison County Agriculture and Farmland Protection Plan (2005)*
- *City of Oneida Comprehensive Plan (2005)*

Of the 27 towns, villages and City that comprise Madison County, 16 have comprehensive plans. There are numerous plans and studies by the County, State and Federal government that address issues countywide. Below is an overview of plans reviewed to date.

### ***Madison County Community Health Assessment (2013)***<sup>87</sup>

In the fall of 2012, the New York State Department of Health required all local Public Health Departments in the state to produce a Community Health Improvement Plan in keeping with the goals identified in the *Prevention Agenda 2013*. Local health departments were mandated to work with local hospitals as well as other area partners to complete a Community Health Assessment that includes a Community Health Improvement Plan for 2013-2017.

In 2012, the Madison County Board of Health identified three overarching Strategic Health Directives to guide and direct health prevention across multiple settings and advances efforts to build a healthier Madison County: Health Care, Healthy Behaviors and Healthy Environment.

- Health Care
  - Goal 1 – is to ensure access to and receipt of recommended quality, effective, evidence-based preventive and health care services and information for individuals at each stage of life.
- Healthy Behaviors
  - Goal 2 – is to support individuals at each stage of life in making healthy choices.
- Healthy Environments
  - Goal 3 – is to create and sustain social and physical environments that are accessible; that support health, safety, and quality of life for individuals at each stage of life.



## NY Rising Madison County Resiliency Plan

This NYRCR Plan builds upon the Community Health Assessment by providing for an overall healthier, stronger community making it more resilient and supporting the County Health Department who plays a large role in storm recovery efforts. One project identified in this NYRCR plan calls for a comprehensive data management system for the County Health Department.

### *Madison County Planning Department Annual Reports (2009-2012) and Updates*<sup>88, 89, 90, 91</sup>

One of the primary focal points for Madison County's Planning Department over the past five years has been to consolidate agricultural districts (originally 13 prior to 2009) into four districts based on town boundaries. The Planning Department reached the half way mark of the consolidation efforts in 2012.

Other efforts and topics of discussion have included the following:

- Installation of Best Management Practices (BMPs) on farms in Madison County
- Climate Change Innovation program to develop policies and strategies to reduce greenhouse gas emissions and promote clean energy alternatives
- Healthy Design for Madison County (Primer for Smart Growth) for creating an economic climate that enhances the viability of working lands, while conserving natural lands
- Environmental affairs and climate change innovation, grants coordination, Solarize Madison, trails of Madison County, housing, land use and zoning, parks and recreation, and transportation

This NYRCR Plan relates to the Annual Reports by planning for a resilient future for Madison County and identifying various projects relating to economic development, sustainability, housing, agriculture and environmental matters.

### *Central New York Regional Economic Development Council Strategic Plan (CNY REDC) (2011)*<sup>92</sup>

Central New York is the heart of New York, and includes the Syracuse metropolitan area (Onondaga County), and Cayuga, Cortland, Madison, and Oswego counties. This Plan, first released in 2011, was initiated by New York State as a means to help develop the regional economy. The plan contains three major goals to guide the region's collective actions:

- Strengthen Targeted Industry Concentrations that Leverage Unique Economic Assets
- Improve Competitiveness in, and Connections to, the Regional, National, and Global Economies
- Revitalize the Region's Urban Cores, Main Streets, and Neighborhoods

The CNY REDC Plan highlighted many of the regional concerns important to the communities of Madison County and identified four market levers representative of the County's goals, assets, and collaborations which will build a strong foundation for economic development moving forward: regional industrial clusters; connecting people, jobs, and housing; workforce alignment; and innovation infrastructure.

In 2012 and 2013, the CNY REDC focused on strategies with immediate opportunity for implementation, while maintaining a long-term view on each strategy within the Five-Year Strategic Plan. Accomplishments included growing key sectors with the creation of state-of-the-art facilities and quality jobs; accelerating global competitiveness with new efforts to drive innovation and effectively respond to private sector workforce needs; and revitalizing municipal cores through improvements to physical infrastructure and empowerment of the residents who make up the community fabric.<sup>93</sup>





Unprecedented construction marks the urban landscapes, and rural communities are increasingly adding value to their home grown products and accessing new markets around the country and the world. Businesses, educators, entrepreneurs, and community leaders have been working together to drive the economy. Central New York remains committed to preserving the quality of life that makes the region special by continuing to invest in neighborhoods, the arts, and the recreational opportunities.<sup>94</sup>

This NYRCR Plan builds upon the CNY REDC and its subsequent updates by focusing on strengthening, building upon and growing Madison County's assets. The Plan details a number of economic development projects relating to revitalation, tourism, marketing, agriculture and hydropower.

### ***Madison County Water Quality Strategy (2011)***<sup>10</sup>

The 2011 Madison County *Water Quality Strategy* was designed to provide an overview of the environmental setting, identify priority water resource issues of concern, and present goals and objectives for water resource protection. It serves as a guidance tool for prioritizing and implementing water quality programming in the County and has an overall focus of the control of non-point source pollution and protection of water quality in local lakes and streams.

This NYRCR Plan relates to the County's Water Quality Strategy by reducing risk of flooding and associated damages thereby keeping waterways healthy and free from debris and sediment. Some projects include debris removal, streambank stabilization, flood mitigation initiatives, and a stream maintenance program.

### ***Madison County Coordinated Public Transit-Human Services Transportation Plan (2010)***<sup>95</sup>

The Madison County Coordinated Public Transit-Human Services Transportation Plan is a locally developed, coordinated public transit-human services transportation plan for underserved populations. The Plan aims to improve transportation services for persons with disabilities, older Americans, and individuals with lower incomes. The provisions ensure that communities coordinate transportation resources provided through multiple Federal programs.

This NYRCR Plan relates to the Transportation Plan by identifying roadway and transportation infrastructure projects to recover from the storms last summer, as well as projects to reduce future risk thereby protecting the infrastructure from damages.

### ***Madison County Multi-Jurisdictional Hazard Mitigation Plan (2009)***<sup>96</sup>

Madison County's Multi-Jurisdictional Hazard Mitigation Plan was adopted in 2009. There are 16 named potential hazards examined in this Hazard Mitigation Plan and they are severe storms, transportation accidents, winter storms, fires, ice storms, floods and hurricanes, tornadoes, ice jams, infestations, extreme temperatures, epidemics (human), epidemics (animal), droughts, earthquakes, dam/levee failures, and wildfires.

Mitigation Measures proposed by the Plan that apply to all hazards include:

- Reverse 911 System
- Re-establishment of Emergency Operations Center (EOC)



- Identification of Vulnerable Populations for Emergency Situations

Flood and Hurricane Mitigation Measures include:

- Buyout of Repetitive Flood Structures – suggests that funding be appropriated to purchase structures that have had repetitive flood losses.
- The Countywide Stream Maintenance Program recommends that Madison County adopt a countywide maintenance program that would provide for the inspection and clearing of all streams in the County. The purpose of the program would be to make sure that the creeks are free of debris and have the capacity to conduct a maximum flow of water during flood events.
- The County Highway Department Infrastructure Inventory and Mapping would require that Madison County’s Highway Department create an inventory of its culverts and other highway infrastructure.
- The Local Zoning Restriction on 100 Year Floodplain Construction measure would require, on a town by town basis, the use of zoning to prevent the building of structures in the 100 year floodplain or high hazard area.

The Hazard Mitigation Plan also identified the best example of a successful mitigation project in Madison County as the draining and demolition of the upper Mount Hope Reservoir, built in 1906, in the City of Oneida. Over time the reservoir was no longer used as a water supply for the City and was in danger of dam failure. With FEMA funding, Madison County was able to drain the reservoir and breach the dam. The parcel now serves as a City park and the danger from flooding downstream has been removed.

This NYRCR Plan builds upon the Hazard Mitigation Plan by reducing the risk to the Community from future flooding events. Identified projects in the NYRCR Plan directly reflect the recommendations of the Mitigation Plan; these include an emergency communications plan, housing evaluations, residential floodproofing assistance, and a stream maintenance plan.

### ***Madison County Agriculture and Farmland Protection Plan (2005)***<sup>97</sup>

This Plan, created over a 4-year period, was adopted in July 2005 by the Madison County Farmland Protection Board and the Madison County Planning Department. One challenge identified in the plan related to the muckland area of northern Madison County. This region was once a productive vegetable growing area, but more recently it has seen substantial soil erosion and abandonment of viable productive soil. Many residential developments have taken place on the “hard land” fringe of the muck soil areas. A significant number of properties, approximately 500 acres of muckland, have been enrolled in Federal wetland creation programs.

The County Agriculture and Farmland Protection Plan included the following goals :

- Farmland Protection
- Agricultural Economic Development: support and promote agriculture within the County
- Increase public awareness of agriculture as an economic resource
- Prepare Madison County agriculture for the future



## NY Rising Madison County Resiliency Plan

This NYRCR Plan builds upon the Agriculture and Farmland Protection Plan by calling for an update and discussing ways to maintain and grow agriculture through economic development, tourism and a reduction in flooding risk.

### *City of Oneida Comprehensive Plan (2005)<sup>98</sup>*

The City of Oneida outlined seven goals in its Comprehensive Plan, adopted in 2005:

- Provide a transportation system that alleviates congestion while providing adequate provisions for pedestrians
- Upgrade and maintain the City's infrastructure
- Reestablish the downtown as the City's central business district
- Provide a variety of high quality housing opportunities
- Improve land management by updating the City's Zoning Ordinance
- Develop a focused City-wide economic development plan
- Utilize potential and existing recreational and educational facilities to support opportunities for youth and area residents

These goals resulted in a Citywide Action Plan which provides specific action items for the City to implement. It recommended that the City improve its land management by updating Zoning Ordinance to reflect and encourage future land uses as proposed in the Comprehensive Plan. An example of how this can benefit the City comes from examining the natural resources within the City boundaries such as the Oneida and Cowaselon Creeks and the 100 year floodplain. Identified issues include controlling flood issues along the creek in the eastern part of the City, while further developing natural recreation areas in the City.

This NYRCR Plan builds upon the Oneida Comprehensive Plan by detailing methods to reduce the risk to the City's assets from flooding. Specific projects include relocating key government facilities out of the floodplain, a downtown revitalization plan, flood impacted housing demolition and a housing needs evaluation.



## Section II: Assessment of Risks and Needs

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*Oneida Creek, City of Oneida*



## A. Assessment of Needs and Opportunities

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Needs and opportunities were identified based on the Community's reconstruction and economic growth goals, existing plans and studies, and the Community's overall vision for its future.

The term "need" is used here to illustrate infrastructure and services that were damaged or rendered inoperable by the 2013 summer flooding, as well as operations that failed to work during the storm event or experienced insufficient capacity to respond effectively. During a disaster, many things can go wrong, such as communications breakdowns, equipment failure, infrastructure damage, and more. Considering what took place during the storm event, as well as what was damaged, provided insights as to the inherent resiliency of structures, procedures, and operations. This assessment process led to a frank discussion of Community needs and included recognition of changing climate patterns and the economic and practical necessity of factoring resiliency and adaptive capacity into recovery actions.

Opportunities are based on the idea that additional resiliency benefits, whether economic, environmental, social, or cultural, may be achieved by taking advantage of local assets and strengths, and by the integration of new methods, procedures, and materials in the course of rebuilding. The post-disaster environment also presents opportunities to rebuild in ways that create a community that is stronger and more resilient to future storms. Resilient communities tend to have redundant infrastructure and communication systems, diverse and flexible adaptation strategies, and collaborative public and private partnerships.

Throughout this plan, projects and strategies are categorized by their Recovery Support Function (RSF). FEMA uses these RSFs to identify, coordinate, and ultimately deliver assistance to communities from several different funding sources available through the recovery effort—e.g., Federal, State, private, philanthropic, and not-for-profit. The "Economic Development" RSF, for example, brings together opportunities to achieve business recovery and resiliency through the projects identified by the Community (discussed further in Section IV: ).

The six Recovery Support Functions are:

1. Community Planning and Capacity Building: Improving the Community's ability to both implement storm recovery activities and to plan to mitigate the effects of future storms.
2. Economic Development: Returning economic and business activities to a state of health and developing new economic opportunities that result in a stronger, more resilient Community.
3. Health and Social Services: Restoring and potentially expanding public health programs, health care facilities and essential social services, especially for vulnerable populations.
4. Housing: Assessing local housing conditions and associated risk levels during the re-building process, rebuilding and improving the resiliency of housing.
5. Infrastructure: Investing in infrastructure to rebuild resources destroyed during the storm and to reduce future risks to critical assets.
6. Natural and Cultural Resources: The rehabilitation, management, and protection of the natural



# NY Rising Madison County Resiliency Plan

and cultural resources that define the Community’s physical and human character.

The following is a discussion of the needs and opportunities identified by the Committee members and the Community at large within each RSF.

## *Community Planning and Capacity Building*

This Recovery Support Function relates to the Community’s ability to implement and respond to short and long term recovery measures. It includes procedures, policies, regulations, and planning activities, as well as public education and engagement.

The Community identified the need for enhanced communication and coordination among responding agencies to give residents adequate warning of flood dangers and improved information on resources during and following emergency event(s), including shelters, distribution centers, and assistance. Increased awareness and education of storm risks and preparedness at the public and household levels were needs identified to improve public safety. Increased awareness of the locations and requirements of vulnerable populations, particularly the elderly and low-income populations, was also highlighted. The existing expertise and resources of the Madison Planning Department was also identified as an opportunity to help develop comprehensive flood plain regulation. The Community also suggested existing programs and organizations as opportunities to expand upon including the Department of Health, the County’s website, and the Madison County Planning Department.

**Table 4: Madison County Needs and Opportunities for Community Planning and Capacity Building**

Community Planning and Capacity Building
<p><b>Need:</b> Improved communication systems during emergency  <b>Opportunity:</b> Utilize technology to reduce the time to alert emergency personnel and residents of flood events</p>
<p><b>Need:</b> Improved information, education, and coordination between affected homeowners and agencies regarding flood risks, flood elevation requirements, resilient construction techniques, assistance programs, etc.  <b>Opportunity:</b> Establish a regional flood recovery and revitalization office in conjunction with County Sherriff and Emergency Management offices</p>
<p><b>Need:</b> Evaluate local zoning codes and ordinances, and updated plans  <b>Opportunity:</b> Work with technical experts and the Community to identify Community specific regulations</p>
<p><b>Need:</b> Sufficient Community capacity to secure and administer grants and implement projects  <b>Opportunity:</b> Share recovery manager/grant writer with other area municipalities</p>
<p><b>Need:</b> Greater focus on development around water bodies  <b>Opportunity:</b> Training for local Planning and Zoning boards and code officers on floodplain management</p>
<p><b>Need:</b> Increased infill development as well as increased traditional neighborhood development  <b>Opportunity:</b> Revitalization of existing neighborhoods and downtowns where infrastructure is already present</p>
<p><b>Need:</b> Move residents out of the floodplain  <b>Opportunity:</b> Alternate living options outside of floodprone areas</p>
<p><b>Need:</b> Reduced flood damage to homes outside the floodplain  <b>Opportunity:</b> Educate current and potential homeowners about the dangers of living close to streams, even those without mapped floodplains</p>
<p><b>Need:</b> Inventory of the most floodprone areas in the County  <b>Opportunity:</b> Conduct research on historical flooding</p>



## *Economic Development*

This Recovery Support Function identifies means of strengthening the existing local and regional economy to make businesses more resilient during storm events and assist them in utilizing measures to recover efficiently and swiftly after storm events.

The Community identified several needs relating to strengthening the local and regional economies. These included the reinvigoration of existing downtown areas, creation of attractive streetscapes and gateways, renewed interest in heritage, promotion of tourism and protection of existing jobs and the local tax base. The Community also identified growth in the agriculture sector and current trends such as the growing of hops, Community Supported Agriculture (CSA) and the booming Greek yogurt industry. This presents the opportunity to expand on current crops, grow new crops and to sell to markets outside of Madison County.

**Table 5: Madison County Needs and Opportunities for Economic Development**

<b>Economic Development</b>
<p><b>Need:</b> Stronger and more diverse economic base  <b>Opportunity:</b> Provide training and technical resources for business owners and economic development assistance for local communities</p>
<p><b>Need:</b> Revitalization of community centers  <b>Opportunity:</b> Implement streetscape and gateway enhancements to encourage economic development and tourism</p>
<p><b>Need:</b> Increased year-round visitors to the region  <b>Opportunity:</b> Build on area’s tourism industry, including a greater emphasis on winter activities, heritage tourism and integration of tourism with product development</p>

## *Health and Social Services*

This Recovery Support Function relates to the Community’s ability to recover, rebuild and improve essential health and social services, especially those serving vulnerable populations. Making these networks more resilient will support the well-being of residents, resulting in improved overall health and sustainability of the whole Community.

While the emergency response to the summer 2013 floods was impressive in its scope and speed, the Community identified the need to better protect the health and safety of its residents during and after future storm events. The Community also reported that while hospitals and healthcare facilities did not have problems with flooding, major roads that serve as the primary access to those facilities were flooded and therefore those facilities became inaccessible to some. Existing institutional knowledge among various County departments and emergency responders regarding the location of vulnerable populations was identified as an opportunity to help target educational efforts at those populations. In addition, the most vulnerable populations did not have all the necessary information to adequately prepare for and respond during the disaster. Communities also realized that their designated shelter locations in public facilities may not be fully equipped to serve a sheltering function or are susceptible to flooding themselves. In particular, the basement of the City of Oneida’s emergency facility became flooded causing electrical failure. Electricity is critical at emergency shelters for lighting, heating/cooling



the facility, and providing power to communications and medical devices. Reliable power is also a need for public facilities that perform emergency services during and following an event, such as departments of public works, emergency management offices, and other municipal service offices.

**Table 6: Madison County Needs and Opportunities for Health and Social Services**

Health and Social Services
<p><b>Need:</b> Need appropriate emergency responder equipment.  <b>Opportunity:</b> Seek funding for appropriate emergency responder equipment</p>
<p><b>Need:</b> Transporting residents to hospitals and healthcare facilities during flood events  <b>Opportunity:</b> Providing reliable access to hospitals and healthcare facilities during flood events</p>
<p><b>Need:</b> Protection of the most vulnerable populations  <b>Opportunity:</b> Capitalize on existing institutional knowledge of vulnerable populations among local agencies and departments</p>

## Housing

This Recovery Support Function identifies where housing stock and affordability gaps exist by evaluating economic conditions and forming strategies to address those gaps.

During the summer 2013 flood event, hundreds of homes throughout Madison County were flooded. Many older housing structures in the County pre-date current flood resistant design standards and were severely damaged. Committee members also explained that many homes in the area had been in the same family for generations and were completely paid for with no mortgage, and therefore are not required to buy flood insurance. The Community would like to learn more about opportunities and programs to relocate homes and structures outside of the floodplain to mitigate future damage and reduce risk for local residents. However, the Community recognized that in many cases there is not an adequate monetary incentive for residents and property owners to relocate. The Community also highlighted the need for additional housing options in the County. The Community described several demographic segments who are seeking smaller units closer to downtown areas, including aging populations looking to downsize.

**Table 7: Madison County Needs and Opportunities for Housing**

Housing
<p><b>Need:</b> Code-compliant housing  <b>Opportunity:</b> Capacity and enforcement</p>
<p><b>Need:</b> Mixed-income and multi-generational housing options (address affordability issues)  <b>Opportunity:</b> Creation/utilization of federal and/or local home programs</p>
<p><b>Need:</b> Clean-up of abandoned/foreclosed properties  <b>Opportunity:</b> Create incentives to encourage rehabilitation of existing housing stock</p>
<p><b>Need:</b> Protection of existing housing stock from repetitive flooding and relocation  <b>Opportunity:</b> Create incentives to encourage rehabilitation of existing housing stock</p>
<p><b>Need:</b> Storm damage housing assessment with focus on senior citizens and low-income populations  <b>Opportunity:</b> Assist seniors and low-income populations recover from damage</p>
<p><b>Need:</b> Housing for displaced residents  <b>Opportunity:</b> Create a system to provide short-term/emergency housing for displaced residents</p>





## *Infrastructure*

This Recovery Support Function relates to the identification of the Community’s infrastructure which was damaged during storm events. This includes facilities which have only received temporary repairs until permanent rehab or replacement can occur as well as facilities requiring significant attention because they have yet to receive any repairs.

The summer 2013 flooding impact on infrastructure was a significant focus. The roads, bridges, culverts, drainage systems and electrical facilities were extensively impacted at a fundamental level, affecting both public safety and quality of life. The Community identified the need to upgrade infrastructure whenever possible to withstand or accommodate floodwaters. This includes upsizing of stormwater catch basins and pipes and designing culverts and bridges at stream crossings to accommodate the calculated storm flows.

The County’s infrastructure is made up of facilities and networks that fall under multiple jurisdictions, including local towns, the County, and the State. Most systems of roadways, bridges, and water systems have a schedule of maintenance and upkeep and long-term replacement. Particularly recognized was the need to design and plan for the upgrading and rightsizing of infrastructure when the assets come up for replacement. Due to unforeseen circumstances, such as the summer 2013 flooding, assets sometimes require emergency repairs and replacements. Such emergency replacements must conform, to the greatest extent that funding allows, with designed upgrades rather than replacing exactly what previously existed.

**Table 8: Madison County Needs and Opportunities for Infrastructure**

Infrastructure
<p><b>Need:</b> Upgrades to sanitary and storm sewer lines  <b>Opportunity:</b> Consider upgrading infrastructure as needed</p>
<p><b>Need:</b> Protection of electrical infrastructure, including mobile generators  <b>Opportunity:</b> Work with National Grid to reconfigure electrical grids</p>
<p><b>Need:</b> Protection of potable water supply systems  <b>Opportunity:</b> Evaluate and ensure compliance with industry standards for public systems and individual septic systems</p>
<p><b>Need:</b> Protection of roadways, particularly access and evacuation routes  <b>Opportunity:</b> Reduce the time associated with interruptions in communications and transportation access</p>
<p><b>Need:</b> Rightsizing of bridges and culverts  <b>Opportunity:</b> Provide capacity for calculated storm event flows</p>

## *Natural and Cultural Resources*

This Recovery Support Function addresses the restoration of natural systems in order to benefit the Community through mechanisms such as stormwater management and enhancement of recreational and cultural amenities, like fishing access, parks and museums. The County’s vulnerability can be reduced during storm events by the conservation and rehabilitation of these resources.

The value of the natural environment was recognized by noting the importance of the County’s many rivers, streams and creeks to the identity, economy, and environment of the County. The Committee



identified the importance of protecting and restoring the natural floodplain for the streams that pose the highest risk of flooding, such as the Oneida Creek. Improving stream and storm water management for the County’s many waterways was identified as the most critical need among both the Committee and the Community. Utilizing the County’s natural resources, such as the Chittenango State Park and Cazenovia Lake, to support recreational activities that can also act as economic drivers and assets was also noted.

Agricultural lands and farmland in the County were discussed as both a significant natural resource and an economic driver. The existing Agriculture and Farmland Protection Plan is almost 10 years old and in need of updating to reflect current issues and trends. The Community seeks to protect, maintain and grown the agricultural industry through economic development, tourism and a reduction in flooding risk.

**Table 9: Madison County Needs and Opportunities for Natural and Cultural Resources**

Natural and Cultural Resources
<p><b>Need:</b> Reduced flooding from creeks and stormwater runoff  <b>Opportunity:</b> Establish maintenance program for streams and creeks</p>
<p><b>Need:</b> Strengthened stream banks and clear channel flow  <b>Opportunity:</b> Establish maintenance program for streams and creeks</p>
<p><b>Need:</b> Preservation of historic, cultural and natural assets and character  <b>Opportunity:</b> Take measures to protect recreational resources</p>
<p><b>Need:</b> Protect valuable agricultural lands  <b>Opportunity:</b> Work with local farmers</p>
<p><b>Need:</b> Protect riparian areas from erosion and storm drainage  <b>Opportunity:</b> Collaborate with neighboring counties on shared waterbodies  <b>Opportunity:</b> Establish maintenance program for riparian areas</p>
<p><b>Need:</b> Protect and manage floodplains, wetlands, streams, lakes and riparian corridors  <b>Opportunity:</b> Create a Greenway Master Plan</p>
<p><b>Need:</b> Decrease storm runoff in the most floodprone watersheds  <b>Opportunity:</b> Conduct feasibility studying</p>
<p><b>Need:</b> Protect viable agricultural lands  <b>Opportunity:</b> Evaluate existing Madison County Agriculture and Farmland Protection Plan</p>



*Chittenango Falls State Park*



## B. Description of Community Assets

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An important step in the NYRCR process is to assess the risk posed to Community assets and systems that have been affected by past flood events or may be impacted by future storms. This evaluation is intended to assist the Community to develop projects and strategies that mitigate risk and make the Community more resilient.

The first step in the risk assessment process is to inventory and map assets and system components that provide essential community functions and are proximate to known flood risk areas. Community assets and systems may consist of places, services, groups, or infrastructure networks, and can be categorized into five (5) asset classes related to their role in the Community, which are as follows:

- A. Economic
- B. Health and Social Services
- C. Housing
- D. Infrastructure Systems
- E. Natural and Cultural Resources

The Madison County asset inventory was developed by compiling existing digital datasets from multiple municipal, state, and federal agencies. These asset datasets were cross-referenced and supplemented with aerial imagery and address locators, and collated into an asset inventory listing. To streamline the inventory, assets were grouped together if they served the same community function, were located close to one another, or had similar site characteristics. For example, small businesses could be grouped into a downtown center, or single-family homes into a neighborhood. Asset systems were inventoried by enumerating the principal points and components of those systems, such as treatment plants in the wastewater conveyance system and substations in the electric transmission system.

Information was added for each asset, including address, geographic coordinates, risk area, asset class and subcategory, Community value, critical facility designation, and whether the asset served socially vulnerable populations. Addresses and geographic coordinates pinpoint the location of assets for mapping, and once mapped allow for risk area identification. Asset classes and subcategories characterize each asset for grouping, community values rank the overall importance of each asset to the community, and FEMA critical facility designations identify assets considered essential to recovery following a storm event. Identifying assets that provide services for socially vulnerable populations, such as children, the elderly, or low-income community members, can help to further enumerate assets that are particularly important both before and following a storm. Additionally, spatial analysis was used to capture landscape attributes, or features of the landscape that could either mitigate or exacerbate the impacts of flooding and erosion to an asset.

Once a preliminary asset inventory was developed, it was presented to the Committee and to Community residents during public events to gain their input and capitalize on their intrinsic understanding of their Community. A two-tiered approach was utilized to ensure a comprehensive



inventory. One tier included culling existing digital datasets while the second tier used public and the Committee's local knowledge. The dataset analysis supplemented the work of the Committee by identifying assets that may have been hidden in plain sight—i.e., assets vital to the Community's health and resilience that go unnoticed on a day-to-day basis because they only become obvious when they fail, such as small roadway bridges and smaller government service offices. Alternatively, assets that may have not been captured in the existing digital datasets or for which digital data did not exist could be enumerated by the Committee.

As part of their review of the asset inventory, the Community also identified how important different assets were by determining community value rankings. In Madison County, the highest community values were placed on assets related to emergency response, healthcare, public works, utility and transportation infrastructure, and homes and facilities for vulnerable populations. Community value can be expressed as follows:

- A **High Value** community asset is determined by the Community to be so significant in the support of that Community's day to day function that the loss of that asset or extended lack of functioning would create severe impacts to the Community's long-term health and well-being or result in the loss of life or injury to residents, employees, or visitors. High Value Community Assets will also generally be limited in number within a community and be difficult to replace in the short- to mid-term.
- A **Medium Value** community asset is determined by the Community to be important to the functioning of the Community's day-to-day life and that the loss of that asset or extended lack of functioning would cause hardship to the Community's well-being but whose function could be replaced or duplicated in a mid-term time frame without significant burden to a Community's long-term health. Medium Value Community Assets are generally more common than High Value Assets.
- A **Low Value** community asset is determined by the Community to play a role in the functioning of a Community's day to day life, but whose loss could be managed and overcome within a Community without substantial impact to that Community's functioning. Can be started, replaced, or temporarily duplicated in a short-term time frame with limited burden to a Community's long-term health.

While the asset inventory was being developed, maps were also produced to illustrate the geographic distribution of risk areas across the NYRCR planning area, and were used as a guide to focus the asset inventory on those areas at risk. Risk areas in riverine inland communities such as Madison County are synonymous with the floodplains delineated by the Federal Emergency Management Agency (FEMA):

- **Extreme Risk Area:** The most frequently flooded areas are typically found in the 10-year floodplains, which encompass the Extreme Risk Area. In Madison County, the 10-year floodplain had not been digitally modeled by FEMA. Input from members of the Committee as to which places have been frequently inundated and damaged by flooding was used to approximately identify the Extreme Risk Areas within the County. These areas include the floodplains of the



## NY Rising Madison County Resiliency Plan

Oneida Flats, Hamlet of Poolville, and Villages of Chittenango, DeRuyter, and Morrisville.

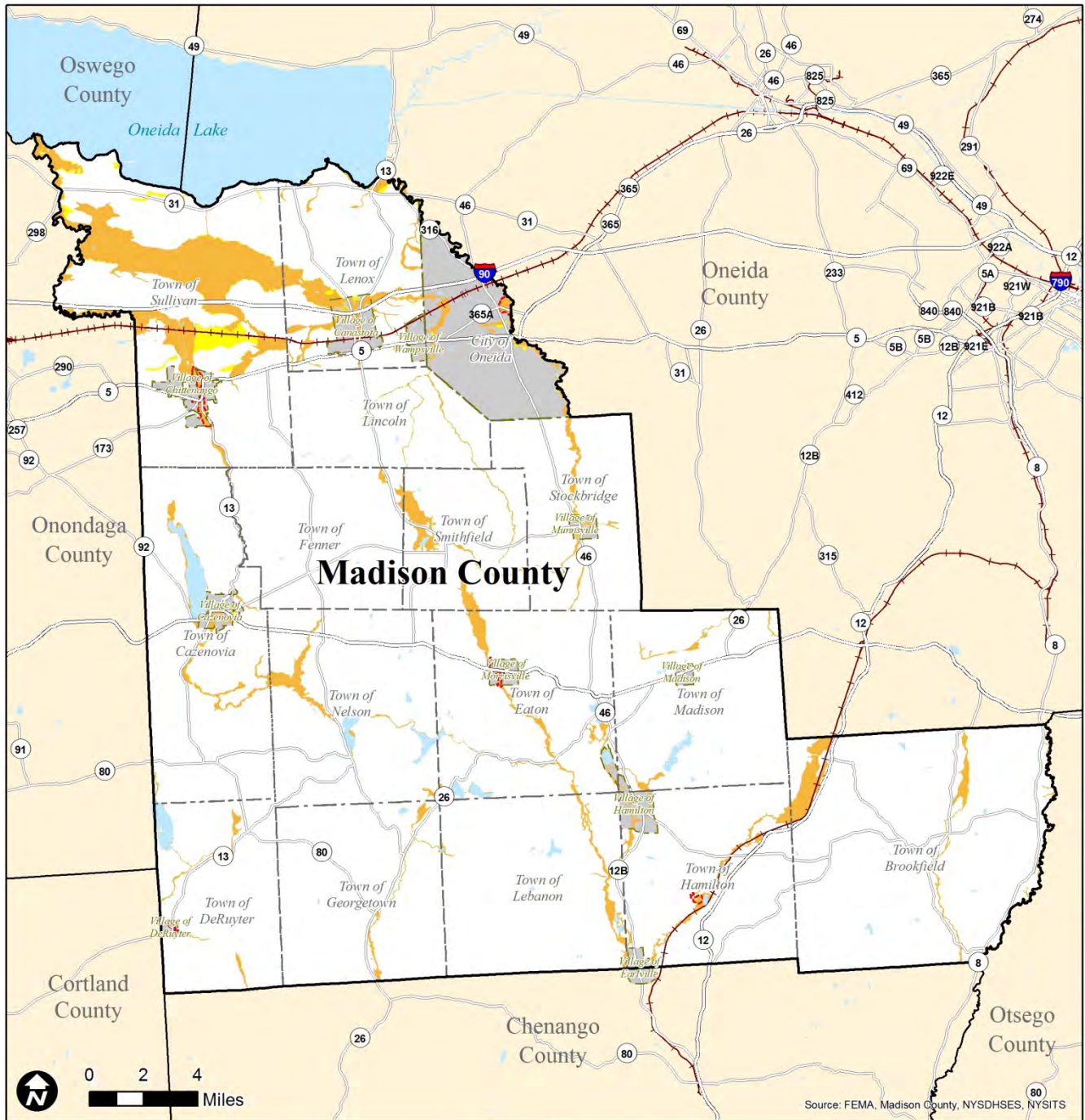
- **High Risk Area:** The 100-year floodplains encompass the High Risk Area, and are subject to a 1.0% chance of flooding on any given year. These flood zones had been digitally mapped by FEMA in Madison County, and can be found throughout the communities along major rivers, streams, and water bodies. High Risk Areas are the most prevalent of the risk zones in the Madison planning area, with the Towns of Sullivan and Lenox and Villages of Chittenango, Canastota, Cazenovia, and Hamilton contain particularly large floodplains in comparison to their overall sizes.
- **Moderate Risk Area:** The 500-year floodplains encompass the Moderate Risk Area, and are subject to a 0.2% chance of flooding on any given year. These flood zones had also been digitally mapped by FEMA in Madison County, and are typically found on the fringes of High Risk Areas.

The figures on the following pages illustrates the risk areas found within the Madison County planning area in detail.



# NY Rising Madison County Resiliency Plan

Figure 3-1: Countywide Risk Area Map



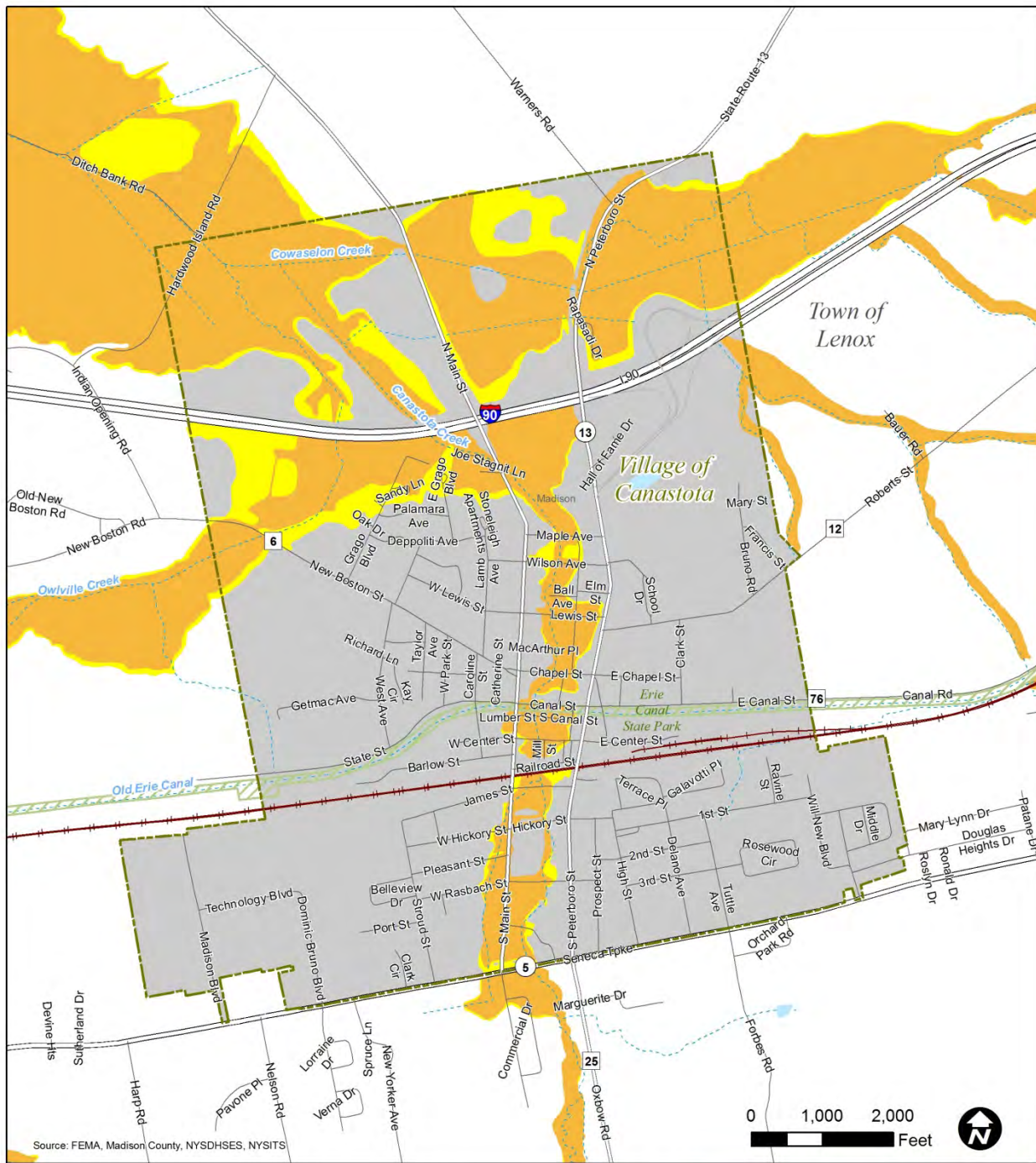
Source: FEMA, Madison County, NYSDHSES, NYSITS

<b>Madison County</b> NYRCR Planning Area	<b>Highways</b> Interstate State Railroad City / Village	<b>Risk Area</b> Extreme* High Moderate
	<small>*Extreme Risk Areas identified by Planning Committee</small>	





Figure 3-2: Village of Canastota Risk Area Map



**Canastota**  
Detail View of  
NYRCR Planning Area  
Madison County

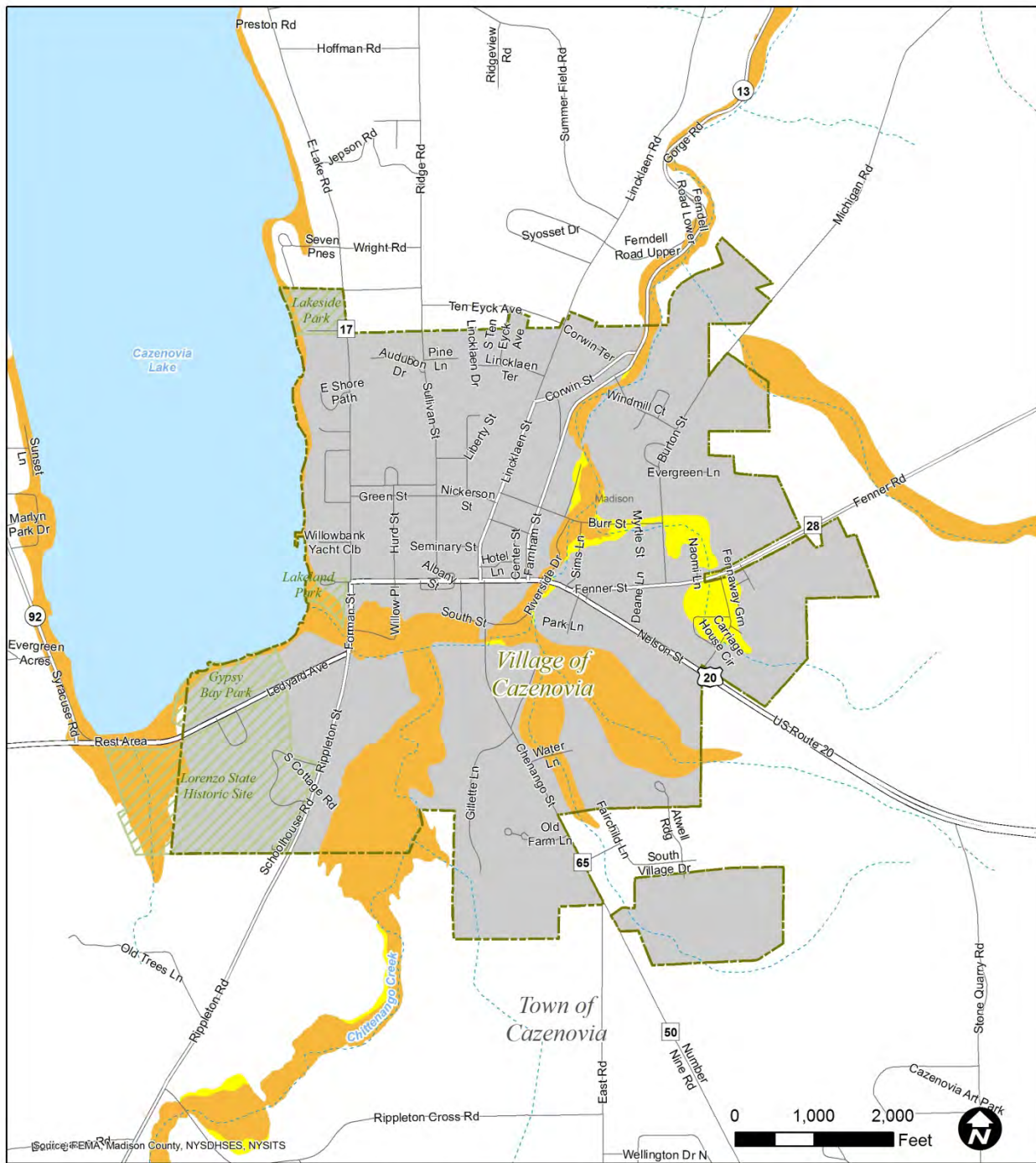
Roads	Risk Area
Highway	Extreme*
Local Street / County Route	High
Railroad	Moderate
City / Village	

\*Extreme Risk Areas Identified by Planning Committee





Figure 3-3: Village of Cazenovia Risk Area Map



**Cazenovia**  
Detail View of  
NYRCR Planning Area  
Madison County

Roads	Risk Area
Highway	Extreme*
Local Street / County Route	High
Railroad	Moderate
City / Village	

\*Extreme Risk Areas Identified by Planning Committee







Figure 3-4: Village of Chittenango Risk Area Map

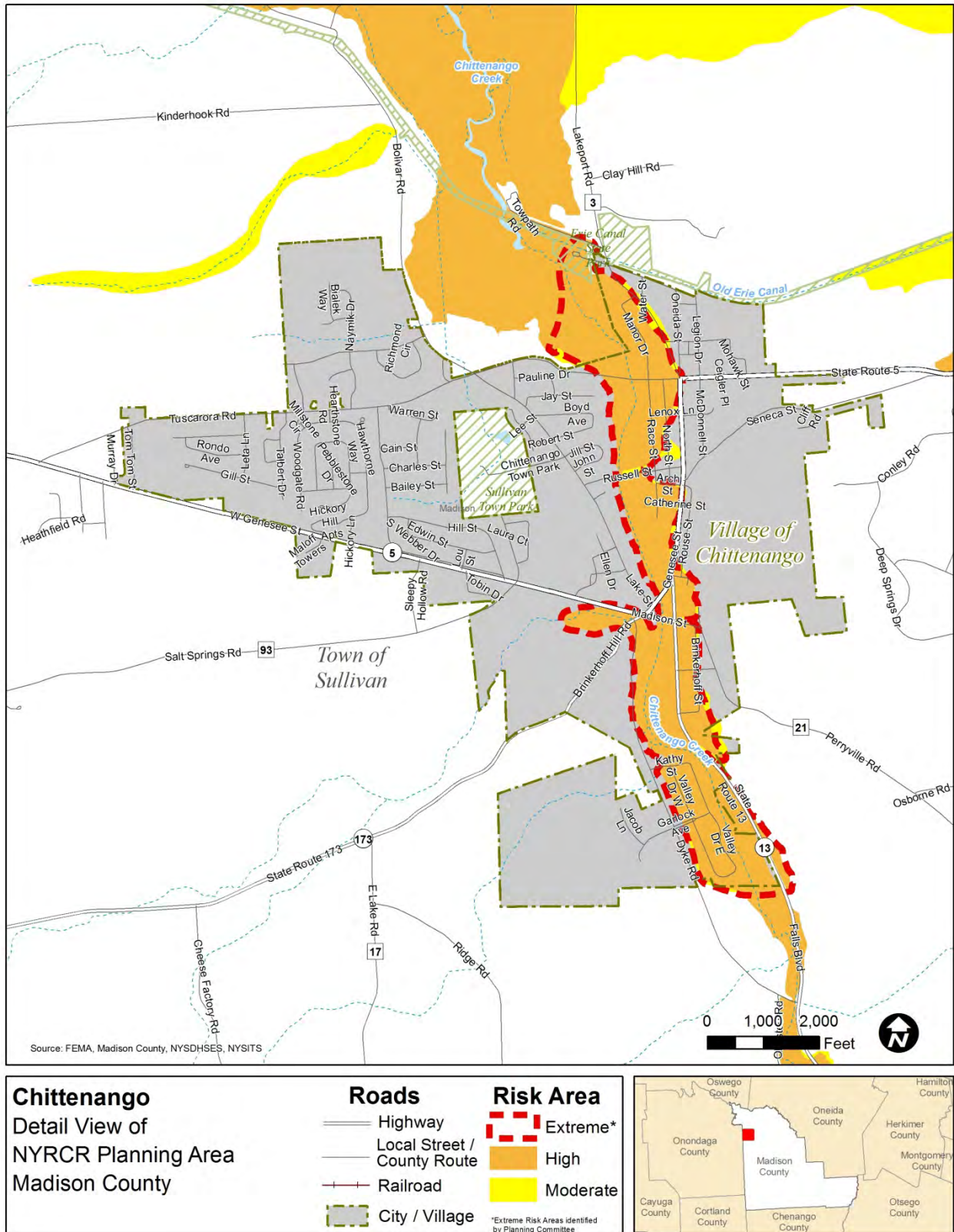
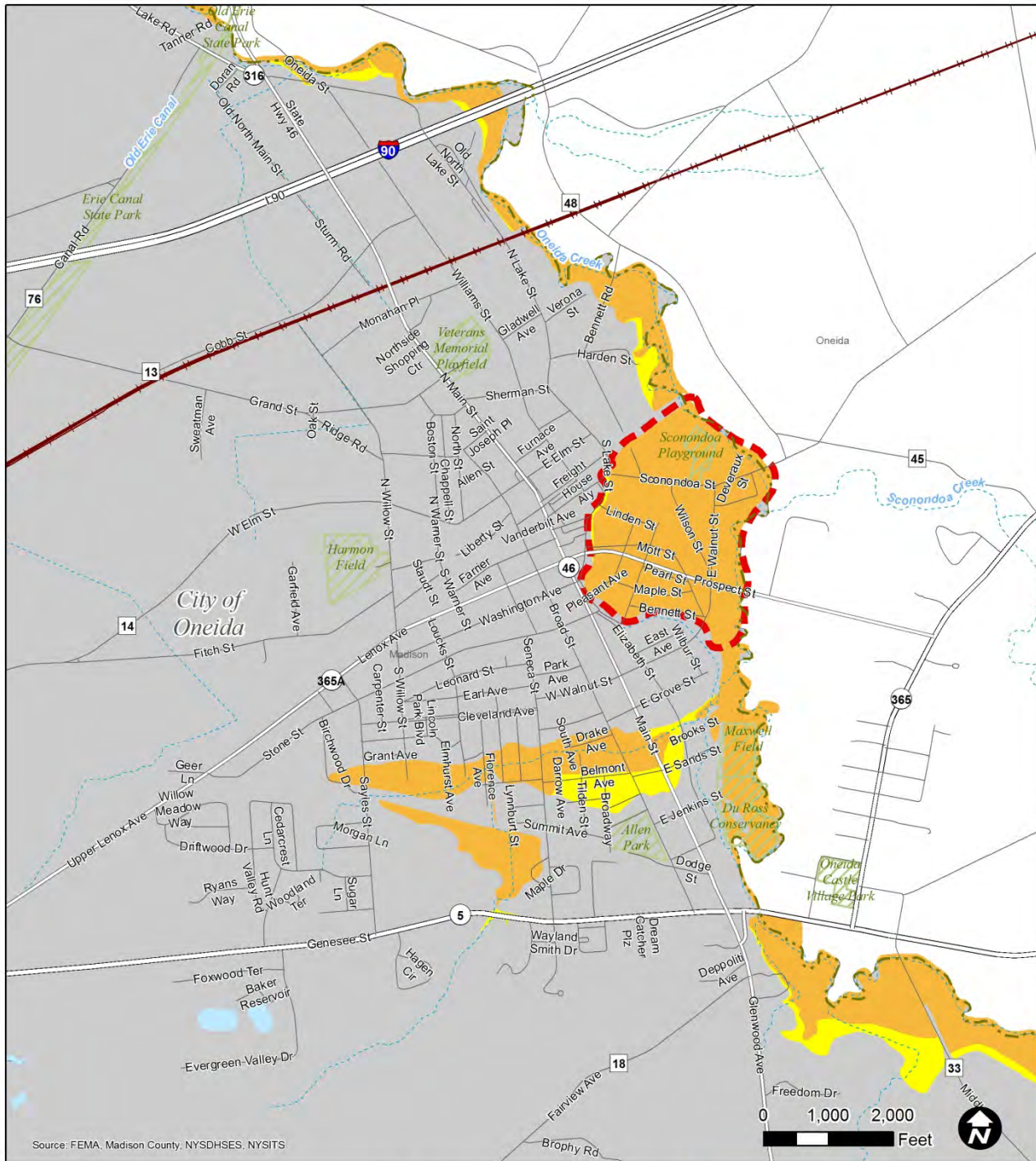




Figure 3-5: City of Oneida Risk Area Map



Source: FEMA, Madison County, NYSDHSES, NYSITS

**City of Oneida**  
Detail View of  
NYRCR Planning Area  
Madison County

**Roads**

- Highway
- Local Street / County Route
- Railroad
- City / Village

**Risk Area**

- Extreme\*
- High
- Moderate

\*Extreme Risk Areas identified by Planning Committee





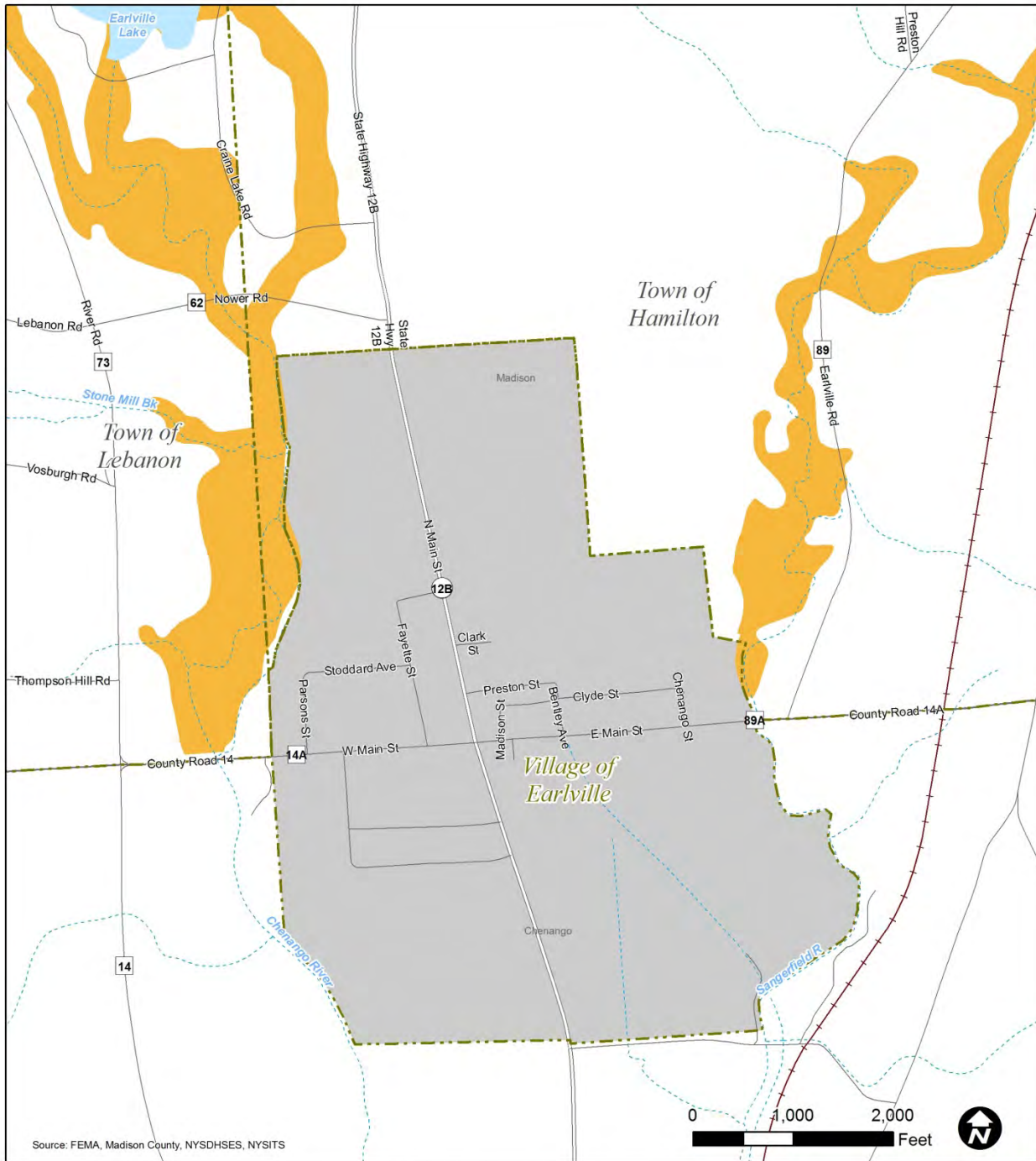
Figure 3-6: Village of DeRuyter Risk Area Map



<b>DeRuyter</b> Detail View of NYRCR Planning Area Madison County	<b>Roads</b> Highway Local Street / County Route Railroad City / Village	<b>Risk Area</b> Extreme* High Moderate	
	<small>*Extreme Risk Areas identified by Planning Committee</small>		



Figure 3-7: Village of Earlville Risk Area Map

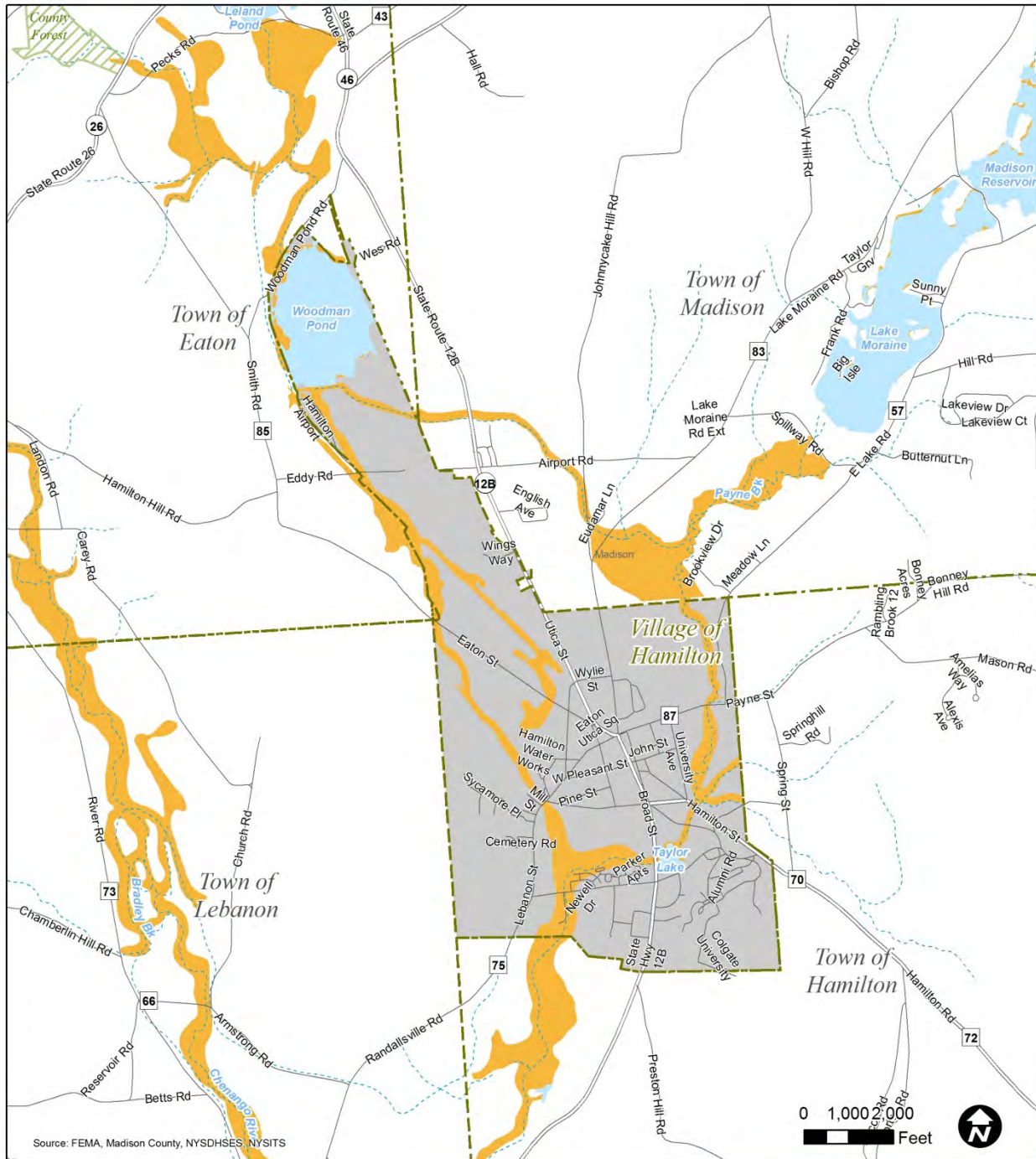


Source: FEMA, Madison County, NYSDHSES, NYSITS

<b>Earlville</b> Detail View of NYRCR Planning Area Madison County	<b>Roads</b> Highway Local Street / County Route Railroad City / Village	<b>Risk Area</b> Extreme* High Moderate	
	<small>*Extreme Risk Areas identified by Planning Committee</small>		



**Figure 3-8: Village of Hamilton Risk Area Map**



Source: FEMA, Madison County, NYSDHSES, NYSITS

**Hamilton**  
Detail View of  
NYRCR Planning Area  
Madison County

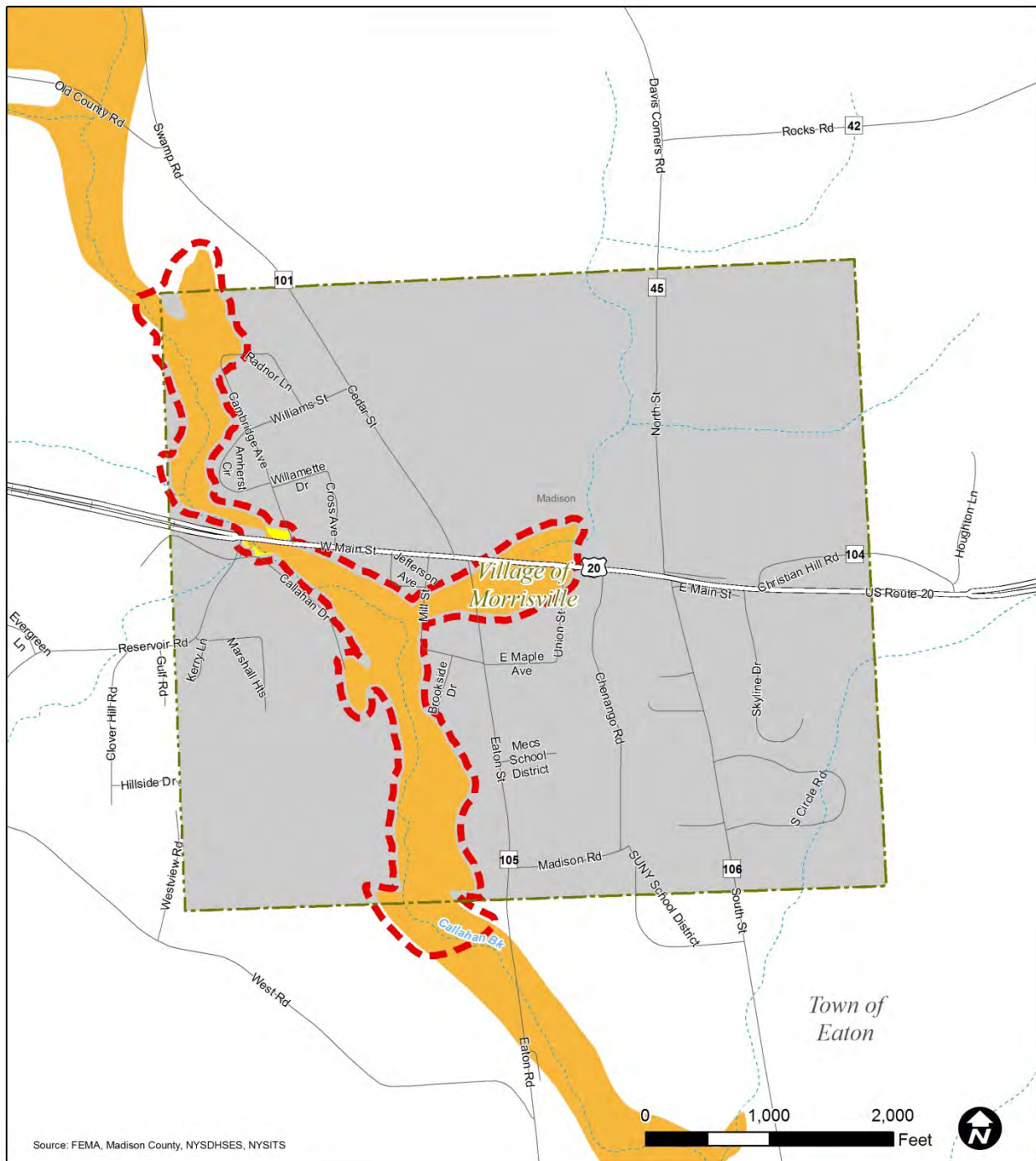
<b>Roads</b>	<b>Risk Area</b>
— Highway	Extreme*
— Local Street / County Route	High
— Railroad	Moderate
— City / Village	

\*Extreme Risk Areas identified by Planning Committee





Figure 3-9: Village of Morrisville Risk Area Map



Source: FEMA, Madison County, NYSDHSES, NYSITS

**Morrisville**  
Detail View of  
NYRCR Planning Area  
Madison County

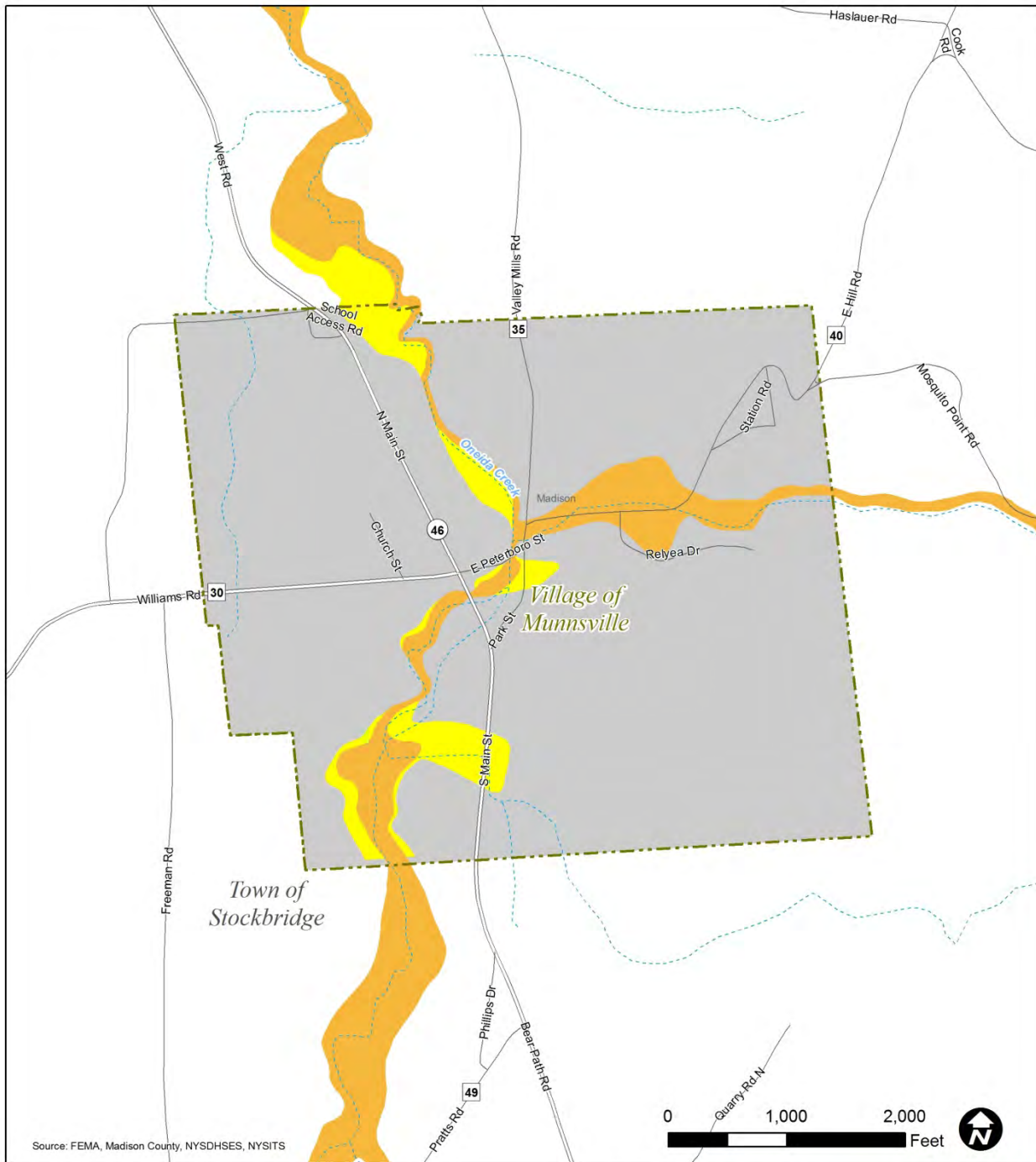
<b>Roads</b>	<b>Risk Area</b>
— Highway	Extreme*
— Local Street / County Route	High
— Railroad	Moderate
— City / Village	

\*Extreme Risk Areas identified by Planning Committee





**Figure 3-10: Village of Munnsville Risk Area Map**



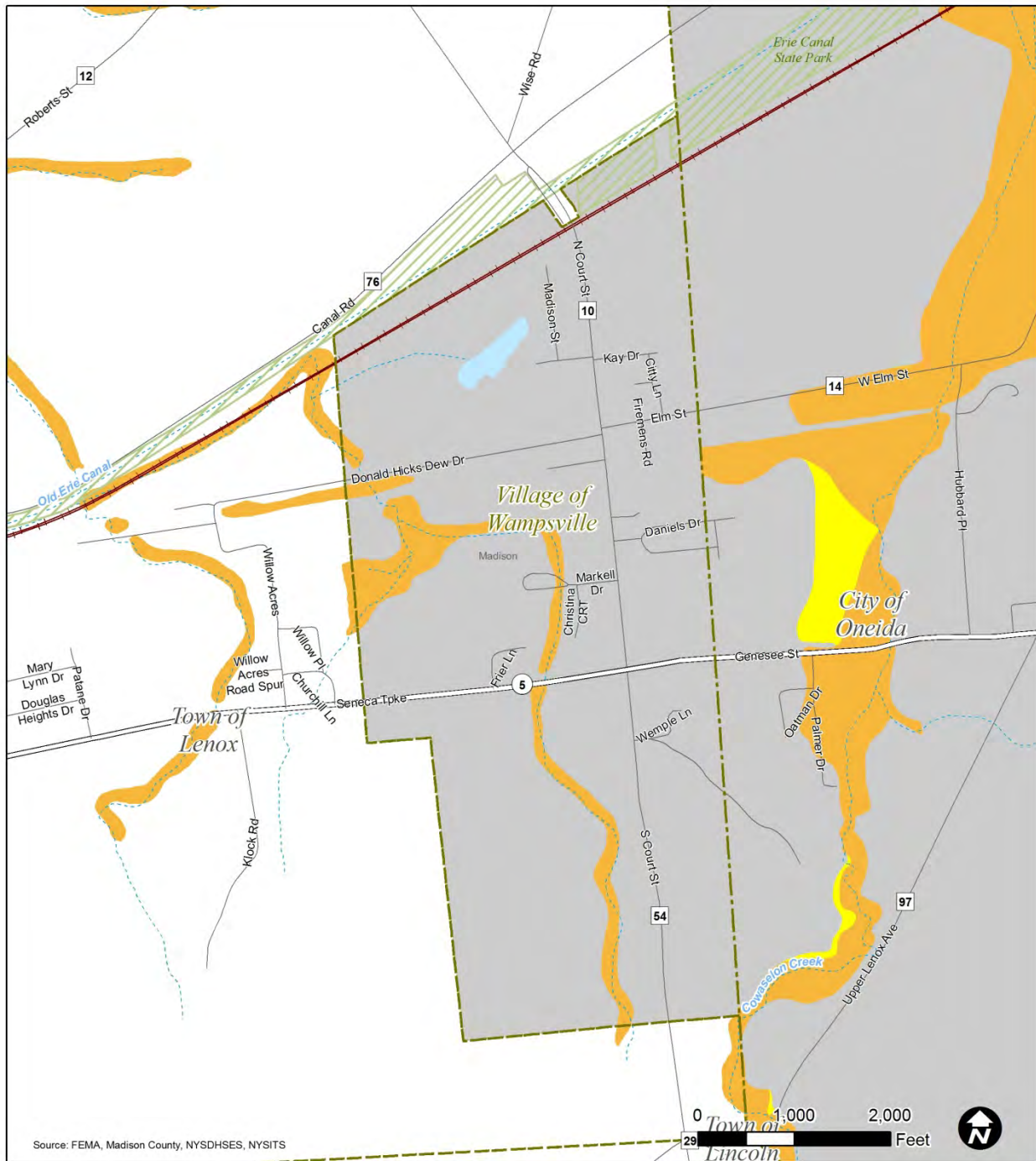
Source: FEMA, Madison County, NYS DHSES, NYSITS

<p><b>Munnsville</b> Detail View of NYRCR Planning Area Madison County</p>	<p><b>Roads</b></p> <ul style="list-style-type: none"> <li> Highway</li> <li> Local Street / County Route</li> <li> Railroad</li> <li> City / Village</li> </ul>	<p><b>Risk Area</b></p> <ul style="list-style-type: none"> <li> Extreme*</li> <li> High</li> <li> Moderate</li> </ul>
	<p><small>*Extreme Risk Areas identified by Planning Committee</small></p>	





**Figure 3-11: Village of Wampsville Risk Area Map**



Source: FEMA, Madison County, NYS DHSES, NYSITS

**Wampsville**  
Detail View of  
NYRCR Planning Area  
Madison County

- |                               |                  |
|-------------------------------|------------------|
| <b>Roads</b>                  | <b>Risk Area</b> |
| — Highway                     | Extreme*         |
| — Local Street / County Route | High             |
| — Railroad                    | Moderate         |
| — City / Village              |                  |
- \*Extreme Risk Areas identified by Planning Committee







## Overview of Countywide Assets

The Community assets identified by the NYRCR Committee and Community were analyzed to identify the risk areas they may be exposed to, and are summarized as follows. The complete asset inventory can be found in Section VI.

- Natural and Cultural Resources
- Health and Social Services
- Infrastructure
- Housing
- Economic Centers
- Socially Vulnerable Populations

## Natural and Cultural Resources

Natural and Cultural Resources include natural habitats, wetlands and marshes, recreation facilities, parks, open space, religious establishments, libraries, museums, historic landmarks, and performing arts venues. The 2013 storm impacted multiple recreational and cultural assets in the built environment, such as the Morrisville Village Library and the City of Oneida’s Maxwell Field. Across the County there were many impacts to natural resources as well – multiple stream banks were destabilized by floodwaters and the channels were choked with flood debris, particularly in Brookfield, DeRuyter, Georgetown, Oneida, and Sullivan.

The rivers and creeks of Madison County have historically been, and continue to be, a natural and recreational resource. However, these same waterbodies are the ones most likely to cause flooding damage to infrastructure, businesses and residences. These resources are therefore not themselves at risk by virtue of their location in a risk area—however, protecting their health may be critical to the protection of other nearby assets. Many of these natural and cultural resources, such as the Susquehanna, Oswego and Mohawk Rivers Drainage Basins, are large in geographic area and span multiple municipalities. Madison County residents understand the value of letting the rivers return to their natural course and floodplain as a means to improve overall water quality and reduce risk to nearby structures. There are no Natural and Cultural Resources that are FEMA Critical Facilities. Natural and Cultural Resources are shown in the tables below:

**Table 10: Parks and Recreation Assets**

Asset Name	Municipality	Risk Area	Community Value
MacArthur Parkway Triangle Park	Oneida	Moderate	Low
Maxwell Field	Oneida	High	Low
Sconodoo Playground	Oneida	Extreme	Low
Canastota Recreation Park	Canastota	High	Low
Camp High Esteem	Cazenovia	High	Low
Cazenovia Town Park	Cazenovia	High	Low
Cazenovia Club	Cazenovia	High	Low



**Table 10: Parks and Recreation Assets Cont'd**

Cazenovia Memorial Ball Fields	Cazenovia	High	Low
Gypsy Bay Park	Cazenovia	Moderate	Low
Lakeland Park	Cazenovia	High	Low
Lakeside Park	Cazenovia	Moderate	Low
Dr. West Memorial Park	Chittenango	Moderate	Low
Stickles Park	Chittenango	Extreme	Low
Stooks Park	Chittenango	Moderate	Low
Georgetown Fireman's Park	Georgetown	High	Low
Canaan Campgrounds	Hamilton	High	Low
Eaton Street Complex	Hamilton	High	Low
Oxbow County Park	Lincoln	High	Low
Stockbridge Town Park	Munnsville	Moderate	Low
Chapman Park	Sullivan	Moderate	Low
Sullivan Town Park	Sullivan	High	Low
Town Park at Harbor Lights	Sullivan	Moderate	Low
Sullivan Fish and Game Club	Sullivan	Moderate	Low

**Table 11: Cultural Resources Assets**

Asset Name	Municipality	Risk Area	Community Value
Believers Chapel	Lenox	High	Low
Lincoln United Methodist Church	Lincoln	High	Low
Sullivan Congregational Church	Sullivan	Moderate	Low
American Legion	Cazenovia	High	Low
BSA Troup 18	Cazenovia	High	Low
Chittenango United Methodist Church	Chittenango	Extreme	Low
Chittenango Landing Canal Boat Museum	Chittenango	Extreme	Low
Gerrit Smith Estate National Historic Landmark	Smithfield	Moderate	Low
Morrisville Library	Morrisville	Extreme	Low

### Health and Social Services

Health and Social Services include fire protection, police services, hospitals, and emergency operations facilities. Other Community assets include administrative and education amenities which serve a variety of public functions, from health treatment facilities to general purpose shelters in public schools, and post offices to town halls. During a storm event, these facilities may potentially serve as critical disaster response and recovery centers, the identification of which is essential to future disaster management and preparedness. During the 2013 storm, assets key to the emergency response effort were impacted by flooding, such as the Oneida Armory which was serving as a primary shelter for the City and multiple



# NY Rising Madison County Resiliency Plan

department of public works facilities such as the Georgetown Highway Garage and Oneida DPW. Almost all of the Health and Social Services assets are classified as FEMA Critical Facilities with the exception of post offices, town offices, and veterinary clinics. Health and Social Services assets are shown in the tables below:

**Table 12: Emergency Operations / Response Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Armory Recreation Center (Shelter)	Oneida	Extreme	High
Vineall Ambulance, Inc.	Oneida	Extreme	High
Canastota Police Department	Canastota	Moderate	High
Cazenovia Fire Dept.	Cazenovia	Moderate	High
North Chittenango Fire Dept.	Chittenango	Moderate	High
Chittenango Fire Dept.	Chittenango	Moderate	High
Chittenango Police Dept.	Chittenango	Moderate	High
Georgetown Fire Dept. and Ambulance	Georgetown	High	High
Erieville Fire Dept.	Nelson	High	High
Morrisville Fire Dept.	Morrisville	Extreme	High
Hamilton Fire Dept.	Hamilton	Moderate	High
Hamilton Police Dept.	Hamilton	High	High
North Chittenango Fire Station	Sullivan	Moderate	High
NYS Police Facility	Sullivan	Moderate	High
Community Wesleyan Church	Sullivan	Moderate	High

**Table 13: Schools Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Senior High School	Oneida	High	Medium
Seneca Street Elementary School	Oneida	High	Medium
Time to Shine Preschool	Lenox	High	Medium
Bridgeport Elementary School	Sullivan	Moderate	Medium
Chittenango Middle School	Sullivan	Moderate	Medium
Chittenango Child Care Center	Chittenango	Extreme	Medium
Fiver Children's Foundation	Hamilton	Extreme	Medium
Chenango Nursery School	Hamilton	High	Medium
Hamilton Central School	Hamilton	High	Medium
Otto L. Shortell Middle School	Wampsville	Moderate	Medium
Morrisville State College Garage	Morrisville	Extreme	Medium



**Table 14: Public Works Facilities Assets**

Asset Name	Municipality	Risk Area	Community Value
City of Oneida Department of Public Works	Oneida	Extreme	High
Georgetown Highway Garage	Georgetown	High	High
Smithfield Highway Garage	Smithfield	Moderate	High
Town of Sullivan Highway Department	Chittenango	High	High
Cazenovia Highway Garage	Cazenovia	Moderate	High
Madison County Highway Garage	Morrisville	Extreme	High
Morrisville DOT Facility	Morrisville	Moderate	High
Town of Stockbridge Highway Garage	Munnsville	Moderate	High

**Table 15: Health Care Facilities Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Area Day Care Center	Oneida	Extreme	High
Little Respite Center - ARC	Oneida	Moderate	High
Community Memorial Health Center	Georgetown	High	High
Georgetown Veterinary Clinic	Georgetown	High	High
Canastota-Lenox Health Center	Canastota	Moderate	High
OPWDD – Chittenango Hostel #11589	Chittenango	Extreme	High
Community Memorial Hospital /Family Health Center	Munnsville	Moderate	High

**Table 16: Government and Administrative Services Assets**

Asset Name	Municipality	Risk Area	Community Value
City of Oneida Salt Storage Shed	Oneida	Extreme	High
Kenwood Post Office	Oneida	High	Low
Madison County Jail	Oneida	High	High
Town of Georgetown Offices	Georgetown	High	Low
Morrisville Post Office	Morrisville	Extreme	Low
Munnsville Post Office	Munnsville	High	Low
Town of Stockbridge Town Hall	Munnsville	Moderate	Low



## Infrastructure

Assets in this category include transportation infrastructure, transportation-related facilities and utilities. Utilities include public water supply, stormwater and wastewater systems, power supply, and telecommunications; the distribution and operational networks of which are dispersed throughout the County. The distributed nature of these systems throughout the extreme, high, and moderate risk areas makes the assessment of risk to the overall systems difficult to categorize. In general, if a principal component of a system is located in a risk area, the entire system is vulnerable. As such, it is more straightforward to assess the risk to specific plants, pump stations, substations, and other key facilities that are critical to the functioning of these networks. The 2013 storm impacted infrastructure systems across Madison County, causing power outages and road washouts and flooding that hindered emergency responders. All of the power supply, wastewater facilities and telecommunications are considered FEMA Critical Facilities. Infrastructure facilities are summarized in the tables below:

**Table 17: Wastewater Treatment Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Sewage Treatment Plant	Oneida	High	High
Madison County Sewage Treatment Plant	Cazenovia	Moderate	High
Chittenango Water-Sewage Treatment Plant	Sullivan	Moderate	High
Canastota Sewage Treatment Plant	Canastota	Moderate	High
Hamilton Village Water Works	Hamilton	High	High

**Table 18: Water Supply Assets**

Asset Name	Municipality	Risk Area	Community Value
Water Wells	Brookfield	Moderate	Low
Water Wells	Cazenovia	High	Low
Water Wells	DeRuyter	Moderate	Low
Water Wells	Eaton	Moderate	Low
Water Wells	Eaton	Extreme	Low
Small Spring	Eaton	Moderate	Low
Water Wells	Georgetown	High	Low
Camp Fiver Water Treatment	Hamilton	Extreme	Low
Oriskany Falls Village Water Treatment and Water Wells	Madison	High	Low
Payne Brook Water Treatment and Water Wells	Hamilton	High	Low



**Table 19: Telecommunications Assets**

Asset Name	Municipality	Risk Area	Community Value
Telecommunications Tower	Oneida	High	High
Telecommunications Tower	Sullivan	High	High
Cingular Wireless Cell Tower	Canastota	High	High
Windstream NY	Cazenovia	High	High

**Table 20: Stormwater Facilities Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Creek Dam	Oneida	Moderate	High
Deruyter Reservoir Dam	Cazenovia	Moderate	High
Bradley Brook Dam	Eaton	Moderate	High
Eaton Brook Reservoir Dam	Eaton	Moderate	High
Leland Pond Dam	Eaton	Moderate	High
Lebanon Reservoir Dam	Lebanon	Moderate	High
Lake Moraine Dam	Madison	Moderate	High
Lyons Pond Dam	Madison	Moderate	High
Erieville Reservoir Dam	Nelson	Moderate	High

**Table 21: Power Supply and Fuel Assets**

Asset Name	Municipality	Risk Area	Community Value
NYSEG Electrical Substation	Eaton	High	High
National Grid Gas Measuring Station	Sullivan	High	High
Niagara Mohawk Electrical Substation	Canastota	High	High
National Grid Electrical Substation	Cazenovia	High	High
Oil & Gas Well - Carhart 1	Lebanon	High	Low
Oil & Gas Well - Chittenango Well 1	Chittenango	Extreme	Low

**Table 22: Bridge Assets**

Asset Name	Municipality	Risk Area	Community Value
Brookfield Bridges (8)	Brookfield	High (5) Moderate (3)	Low
Canastota Bridges (9)	Canastota	High (4) Moderate (5)	Low
Cazenovia Bridges (11)	Cazenovia	High (7) Moderate (4)	Low
Chittenango Bridges (4)	Chittenango	Extreme	Low
DeRuyter Bridges (7)	DeRuyter	Extreme (3) High (4)	Low
Eaton Bridges (7)	Eaton	High (7) Moderate (2)	Low
Fenner Bridges (1)	Fenner	High	Low



**Table 22: Bridge Assets Cont'd**

Georgetown Bridges (5)	Georgetown	High (4) Moderate (1)	Low
Hamilton Bridges (8)	Hamilton	Extreme (1) High (6) Moderate (1)	Low
Lebanon Bridges (6)	Lebanon	High (4) Moderate (2)	Low
Lenox Bridges (6)	Lenox	High (5) Moderate (1)	Low
Lincoln Bridges (6)	Lincoln	High (2) Moderate (4)	Low
Madison Bridges (3)	Madison	High (2) Moderate (1)	Low
Morrisville Bridges (1)	Morrisville	Extreme	Low
Munnsville Bridges (1)	Munnsville	Moderate	Low
Nelson Bridges (1)	Nelson	High	Low
Oneida Bridges (17)	Oneida	Extreme (3) High (12) Moderate (2)	Low
Smithfield Bridges (5)	Smithfield	High	Low
Stockbridge Bridges (4)	Stockbridge	High (2) Moderate (2)	Low
Sullivan Bridges (27)	Sullivan	Extreme (1) High (18) Moderate (8)	Low

## Housing

A significant number of residential assets are at risk of future flooding and/or storm surge events within the County. These assets include single family residences, multi-family residences, mobile homes, and senior care facilities. The County follows a traditional settlement pattern with housing primarily located in the City of Oneida, villages and hamlets. Many of these residential areas are located near streams that have a history of flooding, such as the Oneida Flats neighborhood which was significantly damaged by flooding during the 2013 storm as well as other smaller neighborhoods and clusters of homes across the County. There are multiple senior housing developments and care facilities located throughout the County, all of which are considered Critical Facilities by FEMA. Housing assets are summarized in the tables below:

**Table 23: Affordable Housing Assets**

Asset Name	Municipality	Risk Area	Community Value
Mobile Home Park - Rocky Road	Oneida	Moderate	High
Isbell Mobile Home Park	Eaton	Moderate	High
Valley View Mobile Home Park	Fenner	High	High
Mobile Home Parks (4) in Sullivan floodplain "island"	Sullivan	Moderate	High
Mohawk Community - Mobile Home Park	Sullivan	High	High



**Table 24: Multi-Family Residence & Senior Housing Assets**

Asset Name	Municipality	Risk Area	Community Value
Apartment Building - East Sands St	Oneida	Moderate	Medium
Oneida Garden Apartments	Oneida	Moderate	Medium
Multiple 4-unit Apartment Bldgs.	Canastota	High	Medium
Apartments	Eaton	Extreme	Medium
Apartments	Nelson	High	Medium
Apartments	Chittenango	Extreme	Medium
Duplexes - Race St and North St	Chittenango	Extreme	Medium
Multi-Family Residence	Chittenango	Extreme	Medium
Chittenango Center for Rehabilitation and Healthcare	Chittenango	Extreme	High
Madison Lane Apartments (Senior)	Hamilton	High	High
CCLF Senior Housing	Morrisville	Extreme	High

**Table 25: Single Family Homes/Neighborhoods Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Single Family (6)	Oneida	Extreme (1) High (5)	Medium
Brookfield Single Family (5)	Brookfield	High (3) Moderate (2)	Medium
Canastota Single Family (4)	Canastota	High (3) Moderate (1)	Medium
Cazenovia Single Family (10)	Cazenovia	High (9) Moderate (1)	Medium
Chittenango Single Family (10)	Chittenango	Extreme (7) Moderate (3)	Medium
DeRuyter Single Family (4)	DeRuyter	Extreme (3) High (1)	Medium
Earlville Single Family (1)	Earlville	Moderate	Medium
Eaton Single Family (4)	Eaton	High (2) Moderate (2)	Medium
Fenner Single Family (2)	Fenner	High	Medium
Georgetown Single Family (3)	Georgetown	High (2) Moderate (1)	Medium
Hamilton Single Family (5)	Hamilton	Extreme (1) High (3) Moderate (1)	Medium
Lebanon Single Family (6)	Lebanon	High (4) Moderate (2)	Medium
Lenox Single Family (9)	Lenox	High (4) Moderate (5)	Medium
Lincoln Single Family (12)	Lincoln	High (12) Moderate (3)	Medium
Madison Single Family (2)	Madison	High (1) Moderate (1)	Medium
Morrisville Single Family (4)	Morrisville	Extreme (4)	Medium
Munnsville Single Family (3)	Munnsville	High (2) Moderate (1)	Medium
Nelson Single Family (2)	Nelson	High	Medium
Smithfield Single Family (2)	Smithfield	High	Medium





**Table 25: Single Family Homes/Neighborhoods Assets Cont'd**

Stockbridge Single Family (7)	Smithfield	High (4) Moderate (3)	Medium
Sullivan Single Family (30)	Sullivan	High (18) Moderate (12)	Medium
Wampsville Single Family (2)	Wampsville	High (1) Moderate (1)	Medium

### **Economic Centers**

Assets in the Economic Centers category include downtown centers, business clusters, major employers and employment hubs, industrial and manufacturing centers, tourism destinations, and marina/water-based business areas. The primary economic centers in the County are City of Oneida as well as the villages and hamlets throughout Madison such as Bridgeport, Canastota, Cazenovia, Chittenango, DeRuyter, Earlville, Hamilton, Leonardsville, Morrisville, Munnsville, New Woodstock, Peterboro, Wampsville and West Edmeston. The County also has a significant agricultural base that is an economic driver. Protecting and enhancing the agricultural lands, as well as the downtown centers and commercial areas from flood impacts is important to the economic health of the County. There are no Economic assets considered FEMA Critical Facilities. Economic Centers are summarized in the tables below:

**Table 26: Downtown Centers and Employment Hubs Assets**

Asset Name	Municipality	Risk Area	Community Value
Downtown Multi-tenant Buildings -West	Chittenango	Extreme	Medium
Downtown Multi-tenant Buildings-East	Chittenango	Extreme	Medium
Downtown Row Buildings	Morrisville	Extreme	Medium
DMC Technical Products	Canastota	High	Medium
Isadore A. Rapasadi & Sons, Inc.	Canastota	High	Medium
Queensboro Farm Products	Canastota	High	Medium

**Table 27: Industrial, Warehousing and Manufacturing Assets**

Asset Name	Municipality	Risk Area	Community Value
Canastota Concrete - Oneida Plant	Oneida	Extreme	Medium
Frank A Fera, Inc	Oneida	High	Medium
Hartman Ent, Inc.	Oneida	High	Medium
Wilson Street Commercial Corridor	Oneida	Extreme	Medium
Cazenovia Abroad Trush Warehouse	Cazenovia	High	Medium
Johnson Bros Lumber	Cazenovia	High	Medium
J Tornabene Trucking	Lenox	High	Medium
Staelens Coal Sales	Madison	Moderate	Medium
P&S Concrete Products	Sullivan	Moderate	Medium
Fuels, Inc.	Canastota	High	Medium
Visions of Canastota, LLC	Canastota	High	Medium



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**Table 28: Banks and Financial Services Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Savings Bank	Chittenango	Extreme	Medium
Citizens Bank	DeRuyter	Extreme	Medium
Key Bank	Eaton	Extreme	Medium

**Table 29: Lodging, Restaurants & Marinas Assets**

Asset Name	Municipality	Risk Area	Community Value
The Georgetown Inn	Georgetown	High	Medium
Days Inn	Canastota	High	Medium
Dunkin Donuts	Canastota	High	Medium
New Great Wall	Cazenovia	Moderate	Medium
Hidden Harbor	Lenox	High	Medium
Callahan Marina	Lenox	High	Low
Marion Manor Marina	Lenox	Moderate	Low
Oneida Lake Marina	Lenox	Moderate	Low
Pier 31	Lenox	High	Low
Jreck Subs	Lenox	Moderate	Medium
Christopher's	Oneida	Extreme	Medium
The Corner Diner	Oneida	Extreme	Medium
Fisher Bay Restaurant	Sullivan	Moderate	Medium
Lakeport Marina	Sullivan	High	Low

**Table 30: Large Businesses Assets**

Asset Name	Municipality	Risk Area	Community Value
Lenox Auto Center and Multiple Tenants	Oneida	Extreme	Medium
Mazzullo & Sons Carpet One & Furniture	Oneida	Extreme	Medium
National Grid Building	Oneida	Extreme	Medium
Rite Aid Genesee St	Oneida	Moderate	Medium
Thompson Appliances	Oneida	Extreme	Medium
Minn Dairy Farm	Cazenovia	High	Medium
Buyeas True Value	Cazenovia	Moderate	Medium
Caz Lumber and Oil Company	Cazenovia	High	Medium
Vaill Dairy Farm	Eaton	Moderate	Medium
Kanon Valley Country Club	Lenox	Moderate	Medium
Fuess Dairy Farm	Madison	High	Medium
John Deere Dealer	Nelson	Moderate	Medium
Brubaker Farm	Stockbridge	High	Medium



**Table 30: Large Businesses Assets Cont'd**

Squires Dairy Farm	Stockbridge	High	Medium
Ross Smith Farms	Stockbridge	Moderate	Medium
Canaseraga Farms	Sullivan	High	Medium
Farms (9) in Sullivan floodplain "island"	Sullivan	Moderate	Medium
Kimes True Value	Canastota	Moderate	Medium
Dollar General	Chittenango	Extreme	Medium
Mansion at 120 Madison, Inc.	Chittenango	Extreme	Medium
Tuscarora Road Multi-tenant building	Chittenango	Extreme	Medium
Salvation Army	Chittenango	Extreme	Medium
Sun Chevrolet	Chittenango	Extreme	Medium
Cooley's True Value	Morrisville	Extreme	Medium

**Table 31: Small Businesses Assets**

Asset Name	Municipality	Risk Area	Community Value
Oneida Small Businesses (10)	Oneida	Extreme (4) High (4) Moderate (2)	Medium
Brookfield Small Businesses (1)	Brookfield	Moderate	Medium
Canastota Small Businesses (4)	Canastota	High (2) Moderate (1)	Medium
Cazenovia Small Businesses (3)	Cazenovia	High	Medium
Chittenango Small Businesses (2)	Chittenango	Extreme (1) Moderate (1)	Medium
DeRuyter Small Businesses (3)	DeRuyter	Extreme (1) High (2)	Medium
Georgetown Small Businesses (1)	Georgetown	High	Medium
Lebanon Small Businesses (1)	Lebanon	High	Medium
Lenox Small Businesses (1)	Lenox	Moderate	Medium
Madison Small Businesses (1)	Madison	High	Medium
Morrisville Small Businesses (2)	Morrisville	Extreme	Medium
Sullivan Small Businesses (6)	Sullivan	High (5) Moderate (1)	Medium

### ***Socially Vulnerable Populations***

During storm events, the most vulnerable populations such as the elderly or low income families are frequently at high risk and can be rendered immobile without the necessary medical attention or supplies. Ensuring sufficient services for these populations is imperative in order to maintain a resilient community.

For this plan, the Community identified vulnerable populations as seniors, the medically challenged or disabled, persons and families of low income, persons with limited English proficiency, and the mentally handicapped. The Community stated that during a storm event these populations may need evacuation assistance, attention to special dietary needs, and/or special medical care.



## NY Rising Madison County Resiliency Plan

The Community identified the lack of a comprehensive and formal database of socially vulnerable populations as a primary issue and included the formation of one as a Resiliency Project. There are few known assets which include socially vulnerable populations and these have therefore been folded into other categories such as Housing (senior housing) and Health and Social Services.



## C. Assessment of Risk to Assets and Systems

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The essential functions that assets and asset systems provide to the Community often go unnoticed until they are compromised during a storm event. Assessing the risk posed to these key assets and systems can help communities understand their vulnerabilities, and to develop plans and strategies which make more resilient communities in the long term.

A risk assessment was undertaken as part of the NYRCR process to identify assets across Madison County that are likely to be the least resilient to future storms. Assets found to be in extreme and high risk areas during the asset inventory (nearly 350 across the County) were advanced to the risk assessment process to better quantify their associated risks in detail. This risk analysis was accomplished using a Risk Assessment Tool developed by NYS DOS. The Risk Assessment Tool is spreadsheet-based and evaluates the flood risks posed to assets based on factors related to hazard, exposure, and vulnerability scores:

- **Hazard Score:** Hazard represents the likelihood and magnitude of future storm event impacts. Typically, an asset located in an Extreme risk area experiences hazards with greater frequency and intensity than assets in a High or Moderate risk area. The Hazard Score directly corresponds to the 100-year and 500-year storm events, and is entered as a 3 or a 4, respectively, in the Risk Assessment Tool.
- **Exposure:** Exposure characterizes the moderating effect of local topographic and protective features. If assets are more exposed (e.g., situated in low-lying floodplains), they are more likely to suffer storm effects than similar assets located at a higher elevation. The landscape attributes captured during the asset inventory are quantified and summed in the Risk Assessment Tool to produce an Exposure Score.
- **Vulnerability:** Vulnerability expresses the level of impairment or consequences that assets may experience from a storm event. If an asset recovers quickly with limited interruption in service it has low vulnerability, while extended service loss or permanently reduced capacity would be synonymous with high vulnerability. Input from Committee members and at public engagements was utilized to rank the Vulnerabilities of assets and systems across the County. In the Risk Assessment Tool, low to high vulnerability was quantified on a 1 to 5 scale, respectively.

Once the hazard, exposure, and vulnerability scores were entered, the Risk Assessment Tool produced a Risk Score for each asset using the follow formula:

$$\text{Hazard Score} \times \text{Exposure Score} \times \text{Vulnerability Score} = \text{Risk Score}$$

The derived risk scores help to quantify the associated risk to each asset in detail, and can be used to illustrate and examine the distribution and types of assets least resilient to flooding.



### *Risk Assessment Results*

Madison County is primarily vulnerable to flooding from the streams and tributaries of the Oneida, Mohawk, Chenango, and Upper Susquehanna watersheds following spring snow melt and during heavy summer rains. The northern half of the County generally drains to Oneida Lake, while the southern portion drains through a network of multiple watercourses. The terrain is gently rolling, with approximately 1800' of relief across the County in a general north to south trend. The gently rolling nature of the land contributes to the presence of the numerous streams and tributaries distributed throughout the County's extent. The Chittenango Creek, Cowaselon Creek, Oneida Creek, Oriskany Creek, Tioughnioga Creek, Beaver Creek, Otselic Creek, Chenango River, Unadilla River, and Sangerfield River are main sources of flooding, while smaller tributaries can also contribute when flow volumes are large.

Floodwaters in Madison County were described by Community members to often "come fast, but go fast," meaning that floodwaters typically behave in a flash-flooding manner. Across the County, a pattern of flooding emerges when recounting past events that is characterized by streams unable to handle increased volumes from heavy rains, logjams and silt deposition obstructing watercourses and reducing channel depths, and blockages of culverts with debris. This rural County is dominated by agricultural land uses and open space, which may help explain some of the behaviors floodwaters typically exhibit. An analysis of land cover data reveals that Madison County is approximately 16% cropland, 19% pasture, 43% forest, 9% shrubland, and 8% wetland – totaling nearly 95% of largely permeable surfaces that can help to absorb floodwaters introduced by acute rain events. Understanding the flooding patterns within Madison County can help provide perspective when reviewing the results of the Risk Assessment Tool. Out of the 348 assets analyzed, 1 had a Severe Risk Score, 95 had High Risk Scores, and 252 had Moderate Risk Scores, and none had a Residual Risk Score. Risk Scoring is categorized as follows:

- **Severe Risk:** Could represent that the asset is in a dangerous situation. Both exposure and vulnerability should be reduced if possible, and relocation considered a priority option.
- **High Risk:** Conditions could lead to significant negative outcomes from a storm. Actions should be taken to reduce vulnerability and exposure, and if ineffective then relocation may be necessary.
- **Moderate Risk:** Conditions could lead to moderate to serious consequences from a storm. A combination of measures to reduce vulnerability and exposure may reduce risk to more acceptable levels.
- **Residual Risk:** Conditions indicate that floods would pose minor or infrequent consequences.

Settlement patterns and landscape conditions are similar across Madison County, explaining the homogeneity of the risk scores. Those assets most at risk are typically concentrated near the floodplains identified as extreme risk areas in the Oneida Flats, Hamlet of Poolville, and Villages of Chittenango, DeRuyter, and Morrisville. These highest-risk assets typically have very few protective landscape attributes, compounding the issues inherent to being located in extreme risk areas. Some key assets most at risk include the Oneida Armory (a primary shelter during storm events), Oneida DPW,



## NY Rising Madison County Resiliency Plan

Morrisville Fire Station, numerous residential areas and neighborhoods, multiple downtown business centers, and various assets that serve socially vulnerable populations such as the Chittenango Center for Rehabilitation and Healthcare.

Out of the economic assets analyzed, 31 received high risk scores and 40 received moderate risk scores. About half of these were businesses across the County concentrated in villages and downtowns. Major employers at moderate risk include Queensboro Farm Products and DMC Technical Products in the Village of Canastota, and Johnson Brothers Lumber in the Village of Cazenovia. Another major employer at high risk is the Canastota Concrete Plant in the City of Oneida. Multiple commercial properties along Wilson Street in the City of Oneida are at high risk; further corroborated by flooding from the 2013 storm which caused vacancies after flooded tenants failed to return. Multiple marinas along Oneida Lake in the Towns of Lenox and Sullivan offer recreational and tourism opportunities, but are subject to an inherent moderate risk due to their location.

Thirteen health and social services assets were found to be at high risk and 16 at moderate risk. Facilities key to emergency response efforts found to be at high risk include the Morrisville Fire Station and the Oneida Armory which serves as a shelter during times of need. Moderate risk assets related to emergency response are the Erieville and Georgetown Fire Stations and Hamilton Police Department. Additionally, the City of Oneida DPW and Madison County Highway Garage located in the Village of Morrisville are at high risk, and the Towns of Sullivan and Georgetown Highway Garages at moderate risk. Multiple assets that provide services for socially vulnerable populations are at risk, as well. The Chittenango Child Care Center, Chittenango OPWDD, and Fiver Children's Foundation in the Town of Hamilton were found to be at high risk. At moderate risk were a day care center, elementary school, high school, and Madison County Jail in Oneida, preschool and central school in Hamilton, and a preschool in Lenox. Two animal hospitals are also at risk – the Georgetown Veterinary Clinic is at moderate risk and the Oneida Animal Hospital at high risk.

Numerous housing assets including neighborhoods and homes were found to be at risk. The majority of at-risk housing consists of single-family residences and neighborhoods, with the remainder including various multi-family apartments and two mobile home parks. Overall, moderate risk housing is found distributed throughout the County. High risk housing is concentrated in the Hamlet of Poolville and Villages of Chittenango, DeRuyter, and Morrisville. Assets serving socially vulnerable populations such as the Chittenango Center for Rehabilitation and Healthcare as well as senior housing in the Village of Morrisville were found to be at high risk. The Flats neighborhood in the City of Oneida was found to be at severe risk. The 2013 storm devastated the Flats with flooding and inundation that took days to recede and left a significant deposition of debris. Numerous homes were damaged beyond repair in this predominantly low-to-moderate income neighborhood. The need for assistance to residences through a buyout program was identified, and the planning stages of the program are currently underway to help residences relocate out of flood-risk areas.

Components of infrastructure systems were found to be at risk across the County. Since categorizing the risk to an overall system can be difficult to quantify, the approach was taken to analyze the risk faced by



## NY Rising Madison County Resiliency Plan

principal points of those systems to identify vulnerabilities. Of the 123 infrastructure assets examined, 99 were bridges that crossed watercourses and represented particular points of the transportation system that were likely to be vulnerable across the County. Eighteen bridges received high risk scores, and the remaining 81 received moderate risk scores. Higher risk bridges generally were situated near the confluence of merging streams or in an extreme risk area known to flood frequently. Components of the electric transmission and telecommunications systems including four electrical substations and three telecommunications towers were found to be at moderate risk. The Oneida Sewage Treatment Plant received a high risk score and marks a key vulnerability of Oneida's wastewater system. Following the 2013 storm, the plant was incapacitated for days and running at reduced capacity for weeks after until repairs could be completed. Multiple water wells and treatment facilities were found to be at risk across eight municipalities, which could jeopardize both municipal and private water supply networks.

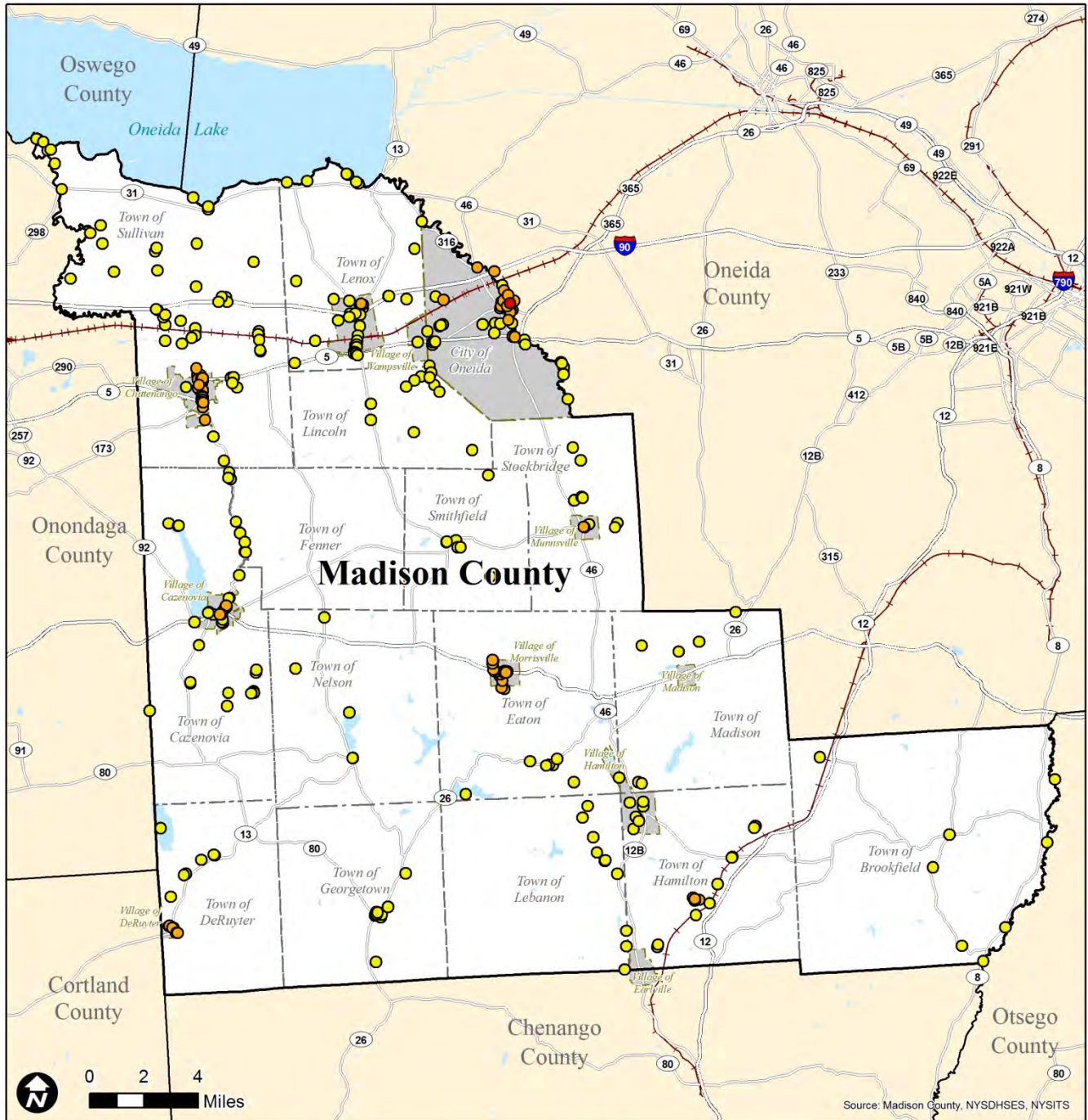
Fifteen natural and cultural resource assets received high risk scores and six received moderate risk scores. The majority include parks, ball fields, and campgrounds at moderate risk that provide recreational opportunities and open space for Community members to enjoy. While parks can provide a vital area for floodwaters to recharge back to the water table, the downtime and damage they can experience from flooding can remain an issue. Assets in the built environment found to be at high risk were the Chittenango Landing Museum, Morrisville Library, and Chittenango United Methodist Church.

The following figures illustrate the locations of the assets analyzed by the Risk Assessment in detail. The full risk assessment findings can be found in Section VI.





Figure 4-1: Countywide Risk to Asset Map

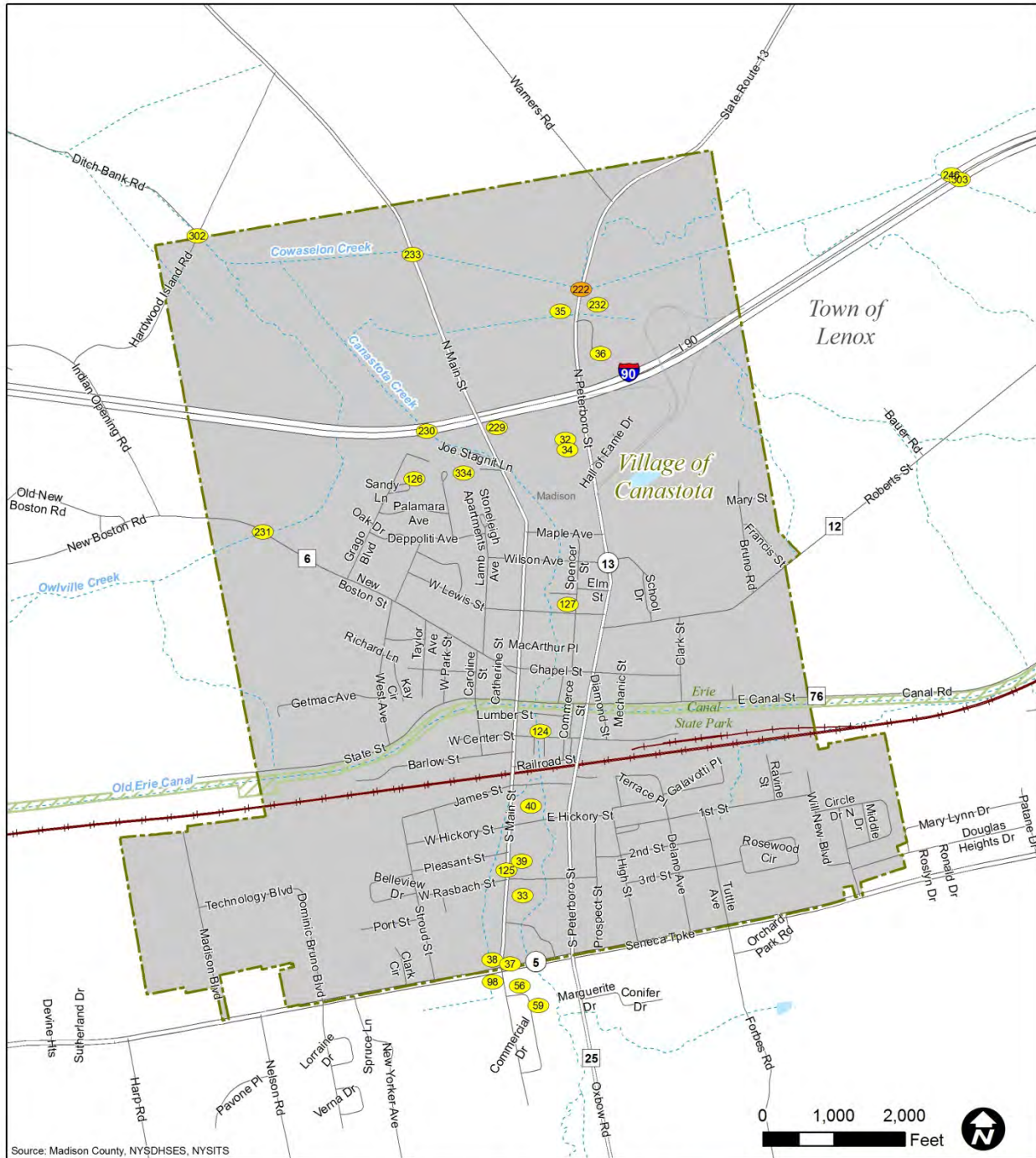


Madison County NYRCR Planning Area	Highways	Asset Risk Level
	Interstate	Severe Risk
	State	High Risk
	Railroad	Moderate Risk
	City / Village	





Figure 4-2: Village of Canastota Risk to Asset Map



Source: Madison County, NYS DHSES, NYSITS

**Canastota**  
Detail View of  
NYRCR Planning Area  
Madison County

Roads	Asset Risk Level
Highway	Severe Risk
Local Street / County Route	High Risk
Railroad	Moderate Risk
City / Village	





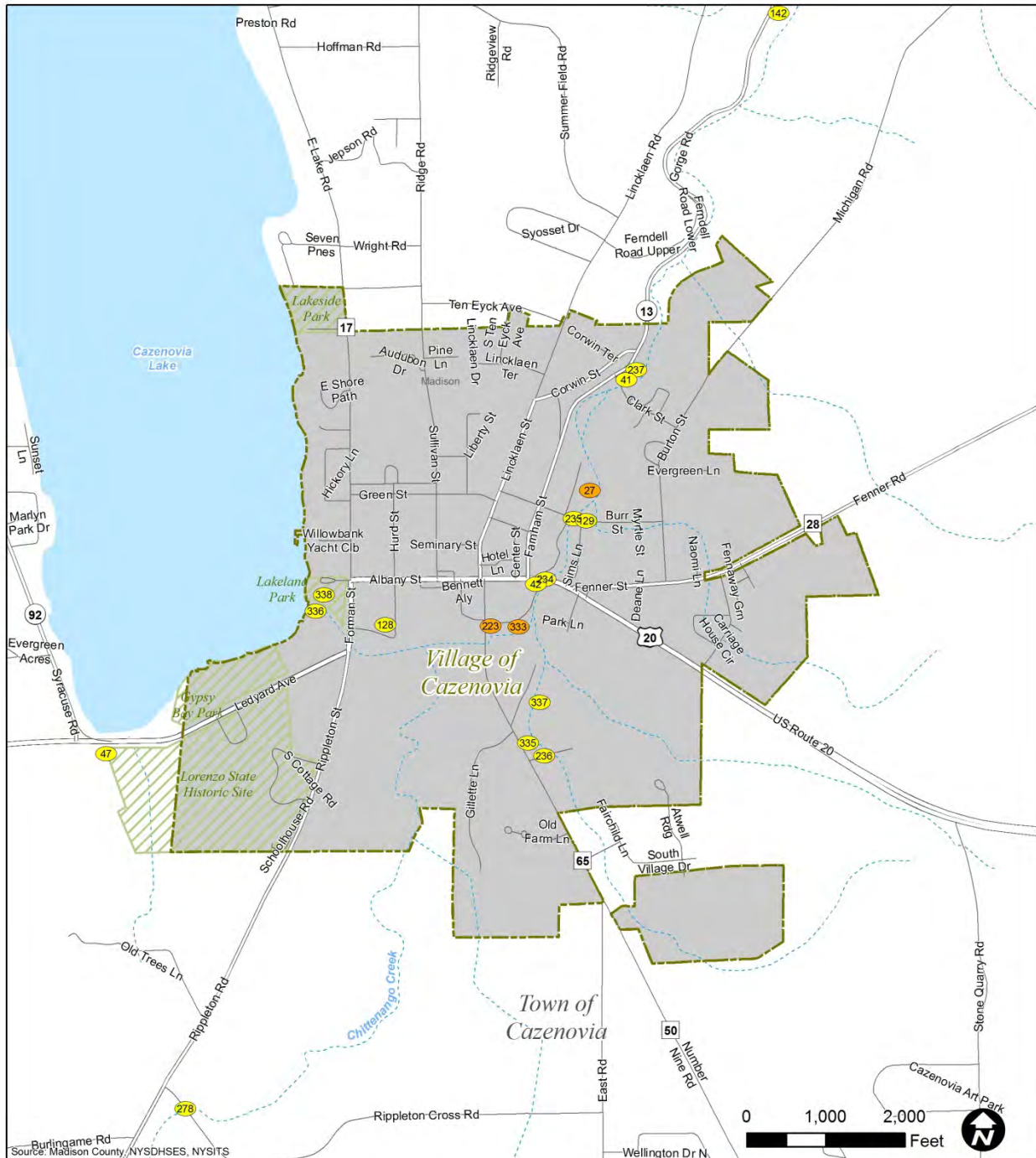
# NY Rising Madison County Resiliency Plan

**Table 32: Risk Assessment Findings – Village of Canastota**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>				
32	Days Inn	Medium	Moderate	High
33	DMC Technical Products	Medium	Moderate	High
34	Dunkin Donuts	Medium	Moderate	High
35	Fuels Inc.	Medium	Moderate	High
36	Isadore A. Rapasadi & Sons Inc.	Medium	Moderate	High
37	Kwick Fill	Medium	Moderate	High
38	NAPA Auto Parts	Medium	Moderate	High
39	Queensboro Farm Products	Medium	Moderate	High
40	Visions of Canastota, LLC	Medium	Moderate	High
<b>Housing Assets</b>				
124	Center Street Neighborhood	Medium	Moderate	High
125	Homes along and near S Main St	Medium	Moderate	High
126	Multiple 4-unit Apartment Bldgs.	Medium	Moderate	High
127	Spencer St Neighborhood	Medium	Moderate	High
<b>Infrastructure Systems Assets</b>				
222	North Peterboro Street Bridge, over Cowaselon Creek	Low	High	High
229	Cingular Wireless Cell Tower	High	Moderate	High
230	Interstate 90 Bridge, over Canastota Creek	Low	Moderate	High
231	New Boston Street Bridge, over Owlville Creek	Low	Moderate	High
232	Niagara Mohawk Electrical Substation	High	Moderate	High
233	North Main Street Bridge, over Cowaselon Creek	Low	Moderate	High
<b>Natural and Cultural Resource Assets</b>				
334	Canastota Recreation Park	Low	Moderate	High



Figure 4-3: Village of Cazenovia Risk to Asset Map



**Cazenovia**  
Detail View of  
NYRCR Planning Area  
Madison County

Roads	Asset Risk Level
Highway	Severe Risk
Local Street / County Route	High Risk
Railroad	Moderate Risk
City / Village	





# NY Rising Madison County Resiliency Plan

**Table 33: Risk Assessment Findings – Town and Village of Cazenovia**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>				
27	Cazenovia Lumber and Oil Company	Medium	High	High
47	Cazenovia Abroad Trush Warehouse	Medium	Moderate	High
48	Construction Equipment Salvage YaRd	Medium	Moderate	High
49	Johnson Bros Lumber	Medium	Moderate	High
50	Minn Dairy Farm	Medium	Moderate	High
<b>Housing Assets</b>				
128	Carpenter Street Neighborhood	Medium	Moderate	High
129	Single Family Residences at West end of Burr St	Medium	Moderate	High
142	Group of Single Family Residences	Medium	Moderate	High
143	Single Family Residence	Medium	Moderate	High
144	Single Family Residence	Medium	Moderate	High
145	Single Family Residence	Medium	Moderate	High
146	Single Family Residence	Medium	Moderate	High
147	Single Family Residences	Medium	Moderate	High
148	Single Family Residences	Medium	Moderate	High
<b>Infrastructure Systems Assets</b>				
223	WindStream NY	High	High	High
234	Albany Street Bridge, over Chittenango Creek	Low	Moderate	High
235	Burr Street Bridge, over Chittenango Creek	Low	Moderate	High
236	Cazenovia Village - Drilled Well Night Use	Low	Moderate	High
237	National Grid Electrical SubStation	High	Moderate	High
272	Ballina Rd Bridge, over Chittenango Creek	Low	Moderate	High
273	Constine Bridge Road Bridge, over Chittenango Creek	Low	Moderate	High
274	Gorge Road Bridge, over Chittenango Creek	Low	Moderate	High
275	O-WE-RA Point Water Supply - Well 1 and Treatment	Low	Moderate	High
276	O-WE-RA Point Water Supply - Well 2	Low	Moderate	High
277	Pompey Hollow Road Bridge, over LimeStone Creek	Low	Moderate	High
278	Rippleton Cross Road Bridge, over Chittenango Creek	Low	Moderate	High

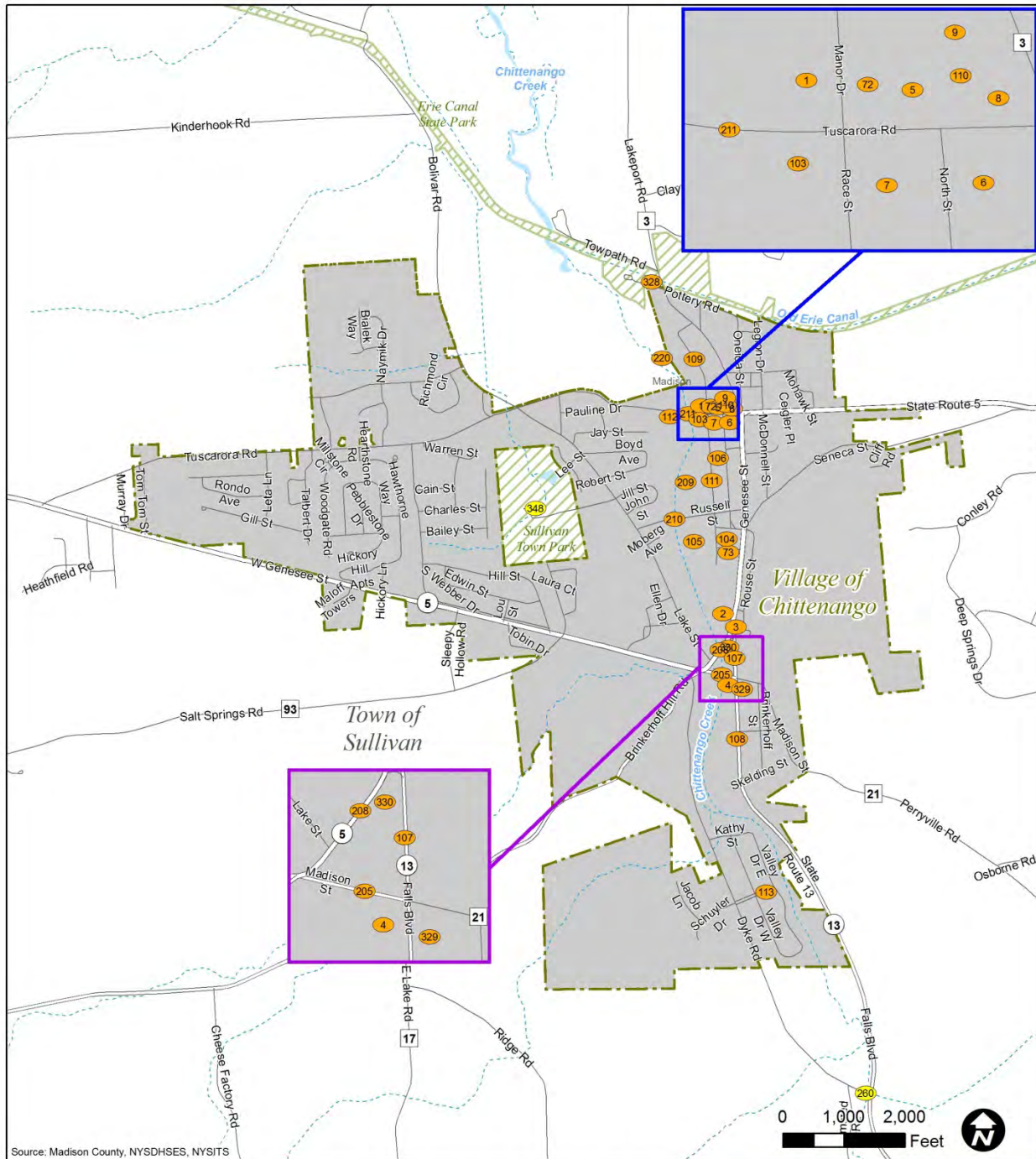


**Table 33: Risk Assessment Findings – Town and Village of Cazenovia Cont'd**

Natural and Cultural Resource Assets				
333	BSA Troup 18	Low	High	High
335	American Legion	Low	Moderate	High
336	Cazenovia Club	Low	Moderate	High
337	Cazenovia Memorial Association Ball Fields	Low	Moderate	High
338	Lakeland Park	Low	Moderate	High
341	Camp High Esteem	Low	Moderate	High
342	Cazenovia Town Park at North end of Cazenovia Lake	Low	Moderate	High



Figure 4-4: Village of Chittenango Risk to Asset Map



Source: Madison County, NYSDHSES, NYSITS

Chittenango	Roads	Asset Risk Level
Detail View of NYRCR Planning Area	— Highway	● Severe Risk
Madison County	— Local Street / County Route	● High Risk
	— Railroad	● Moderate Risk
	— City / Village	





# NY Rising Madison County Resiliency Plan

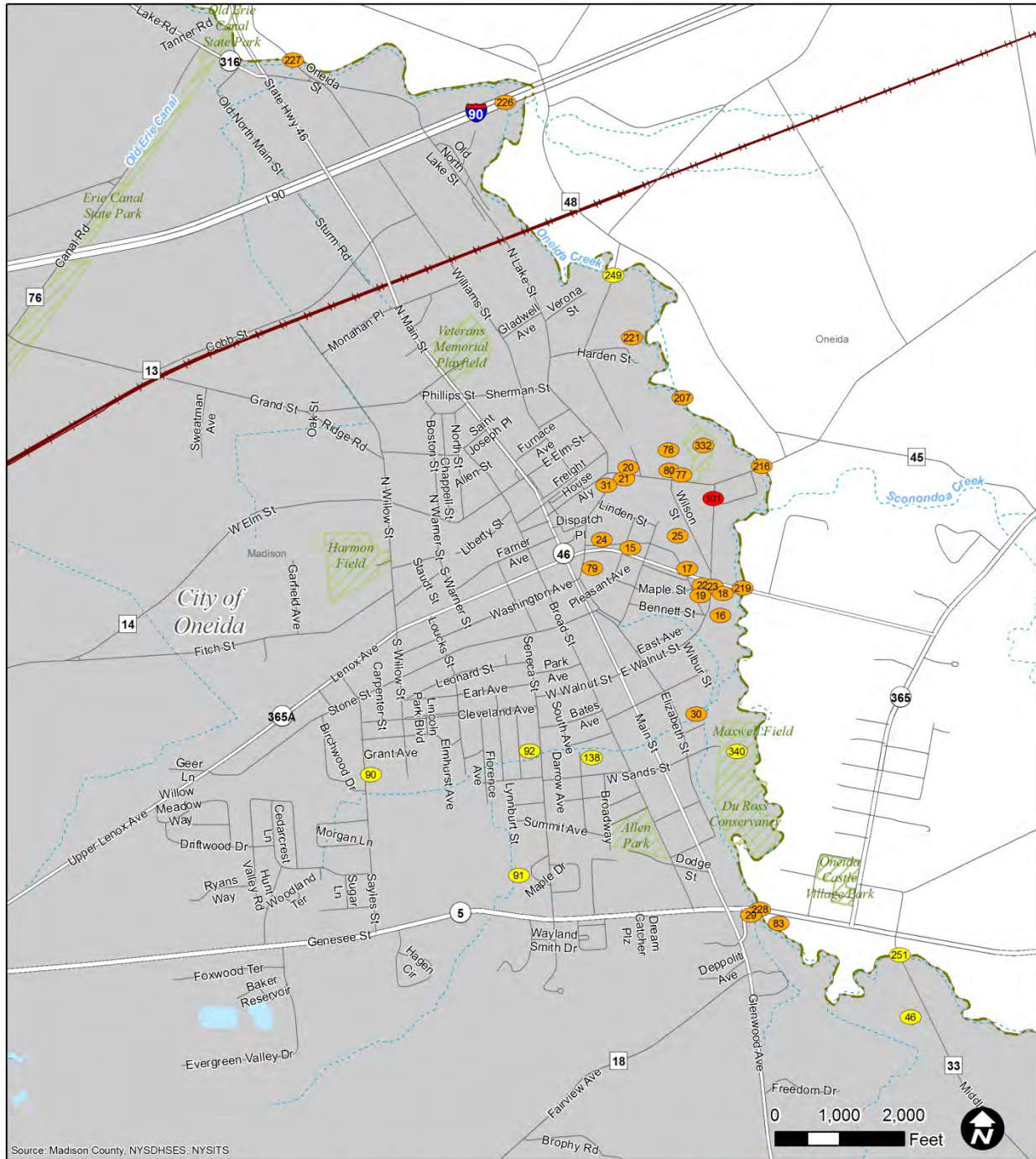
**Table 34: Risk Assessment Findings –Village of Chittenango**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>				
1	Dollar General	Medium	High	Extreme
2	Downtown Multi-tenant Buildings	Medium	High	Extreme
3	Downtown Multi-tenant Buildings	Medium	High	Extreme
4	Mansion at 120 Madison Inc.	Medium	High	Extreme
5	Multi-Tenant Building at East end of Tuscarora Rd	Medium	High	Extreme
6	Oneida Savings Bank	Medium	High	Extreme
7	Salvation Army	Medium	High	Extreme
8	Small Commercial Plaza	Medium	High	Extreme
9	Sun Chevrolet	Medium	High	Extreme
72	Chittenango Child Care Center	Medium	High	Extreme
73	OPWDD - Chittenanco HoStel #11589	High	High	Extreme
<b>Housing Assets</b>				
103	Apartments	Medium	High	Extreme
104	Catherine St Neighborhood	Medium	High	Extreme
105	Chittenango Center for Rehabilitation &Healthcare	High	High	Extreme
106	Duplexes - Race St and North St	Medium	High	Extreme
107	Homes along Falls Blvd - North end	Medium	High	Extreme
108	Homes along Falls Blvd - South end	Medium	High	Extreme
109	Manor Drive Homes	Medium	High	Extreme
110	Multi-Family Residence	Medium	High	Extreme
111	Single Family Homes - Race Street	Medium	High	Extreme
112	Single Family Residence	Medium	High	Extreme
113	Valley Acres Neighborhood	Medium	High	Extreme
<b>Infrastructure Systems Assets</b>				
205	Madison St Bridge, over Chittenango Creek	Low	High	Extreme
208	Genesee St Bridge, over Chittenango Creek	Low	High	Extreme
209	Oil & Gas Well - Chittenango Well 1	Low	High	Extreme
210	Russell St Bridge, over Chittenango Creek	Low	High	Extreme
211	Tuscarora Road Bridge, over Chittenango Creek	Low	High	Extreme
<b>Natural and Cultural Resource Assets</b>				
328	Chittenango Landing Museum	Low	High	Extreme
329	Chittenango United Methodist Church	Low	High	Extreme
330	Stickles Park	Low	High	Extreme





**Figure 4-5: City of Oneida Risk to Asset Map**



Source: Madison County, NYS DHSES, NYSITS

**City of Oneida**  
Detail View of  
NYRCR Planning Area  
Madison County

- |                             |                         |
|-----------------------------|-------------------------|
| <b>Roads</b>                | <b>Asset Risk Level</b> |
| Highway                     | Severe Risk             |
| Local Street / County Route | High Risk               |
| Railroad                    | Moderate Risk           |
| City / Village              |                         |





# NY Rising Madison County Resiliency Plan

**Table 35: Risk Assessment Findings – City of Oneida**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>				
15	AC Delco Oneida Service Center	Medium	High	Extreme
16	Canastota Concrete - Oneida Plant	Medium	High	Extreme
17	Christopher's	Medium	High	Extreme
18	Lenox Auto Center and Multiple Tenants	Medium	High	Extreme
19	Mazzullo & Sons Carpet One & Furniture	Medium	High	Extreme
20	National Grid Building	Medium	High	Extreme
21	Paul Robert, Inc.	Medium	High	Extreme
22	SavOn Service Station	Medium	High	Extreme
23	The Corner Diner	Medium	High	Extreme
24	The Market @ Oneida Commons - Rear Building	Medium	High	Extreme
25	Wilson Street Commercial Corridor	Medium	High	Extreme
29	Hanifin Tire	Medium	High	High
30	Hartman Ent Inc.	Medium	High	High
31	Thompson Appliances	Medium	High	Extreme
43	Champion Car Center	Medium	Moderate	High
44	Converted Residence	Medium	Moderate	High
45	Dorans Auto Service	Medium	Moderate	High
46	Frank A Fera Inc.	Medium	Moderate	High
<b>Health and Social Services Assets</b>				
77	City of Oneida Department of Public Works	High	High	Extreme
78	City of Oneida Salt Storage Shed	High	High	Extreme
79	Oneida Armory Recreation Center (Shelter)	High	High	Extreme
80	Vineall Ambulance, Inc.	High	High	Extreme
83	Oneida Animal Hospital	Medium	High	High
88	Kenwood Post Office	Low	Moderate	High
89	Madison County Jail	High	Moderate	High
90	Oneida Area Day Care Center	High	Moderate	High
91	Oneida Senior High School	Medium	Moderate	High
92	Seneca Street Elementary School	Medium	Moderate	High

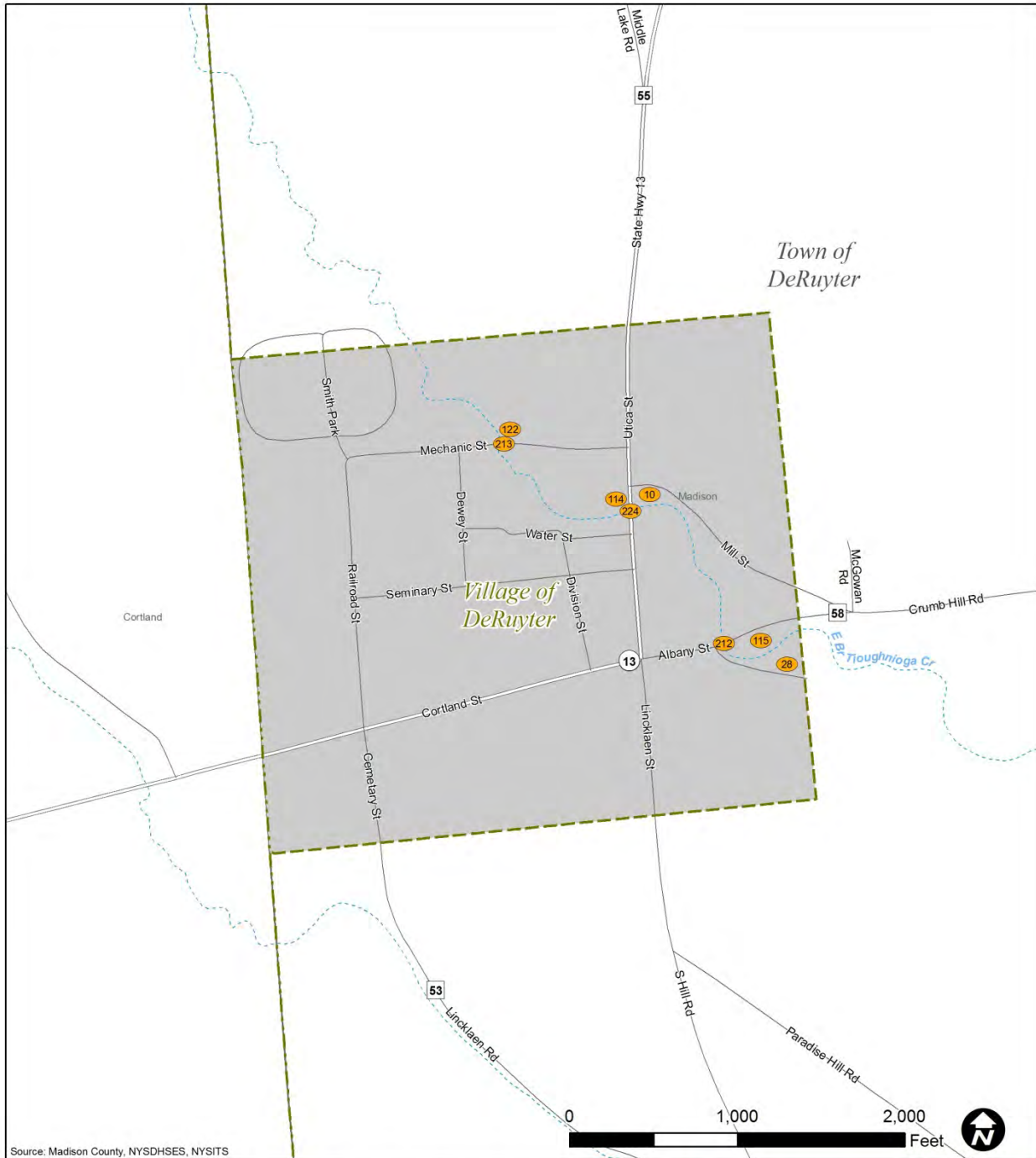


**Table 35: Risk Assessment Findings – City of Oneida Cont’d**

Housing Assets				
101	Oneida Flats Neighborhood	Medium	Severe	Extreme
134	Cluster of Single-Family Homes - Kenwood Ave North	Medium	Moderate	High
135	CluSter of Single-Family Homes - Kenwood Ave South	Medium	Moderate	High
136	Palmer Drive Neighborhood	Medium	Moderate	High
137	Single Family Residences	Medium	Moderate	High
138	South End Neighborhood	Medium	Moderate	High
Infrastructure Systems Assets				
207	Rail Trail Bridge, over Oneida Creek	Low	High	Extreme
216	Sconodoa Street Bridge, over Oneida Creek	Low	High	Extreme
219	Prospect Street Bridge, over Oneida Creek	Low	High	Extreme
221	Oneida Sewage Treatment Plant	High	High	High
225	Canal Road Bridge, over Cowaselon Creek	Low	High	High
226	Interstate 90 Bridge, over Oneida Creek	Low	High	High
227	Old State Route 46 Bridge, over Oneida Creek	Low	High	High
228	Seneca Ave Bridge, over Oneida Creek	Low	High	High
249	Bennett Road Bridge, over Oneida Creek	Low	Moderate	High
250	Burdick Ave Bridge, over Cowaselon Creek	Low	Moderate	High
251	Middle Road Bridge, over Oneida Creek	Low	Moderate	High
252	Peterboro Road Bridge, over Oneida Creek	Low	Moderate	High
253	Sherrill Road Bridge, over Oneida Creek	Low	Moderate	High
254	Swallows Bridge Road Bridge, over Oneida Creek	Low	Moderate	High
255	Telecommunications Tower	High	Moderate	High
256	Upper Lenox Ave Bridge, over Cowaselon Creek	Low	Moderate	High
257	West Elm Street Bridge, over Cowaselon Creek	Low	Moderate	High
Natural and Cultural Resource Assets				
332	Sconodoa Playground	Low	High	Extreme
340	Maxwell Field	Low	Moderate	High



**Figure 4-6: Village of DeRuyter Risk to Asset Map**



Source: Madison County, NYS DHSES, NYSITS

**DeRuyter**  
Detail View of  
NYRCR Planning Area  
Madison County

- Roads**
- Highway
  - Local Street / County Route
  - Railroad
  - City / Village

- Asset Risk Level**
- Severe Risk
  - High Risk
  - Moderate Risk



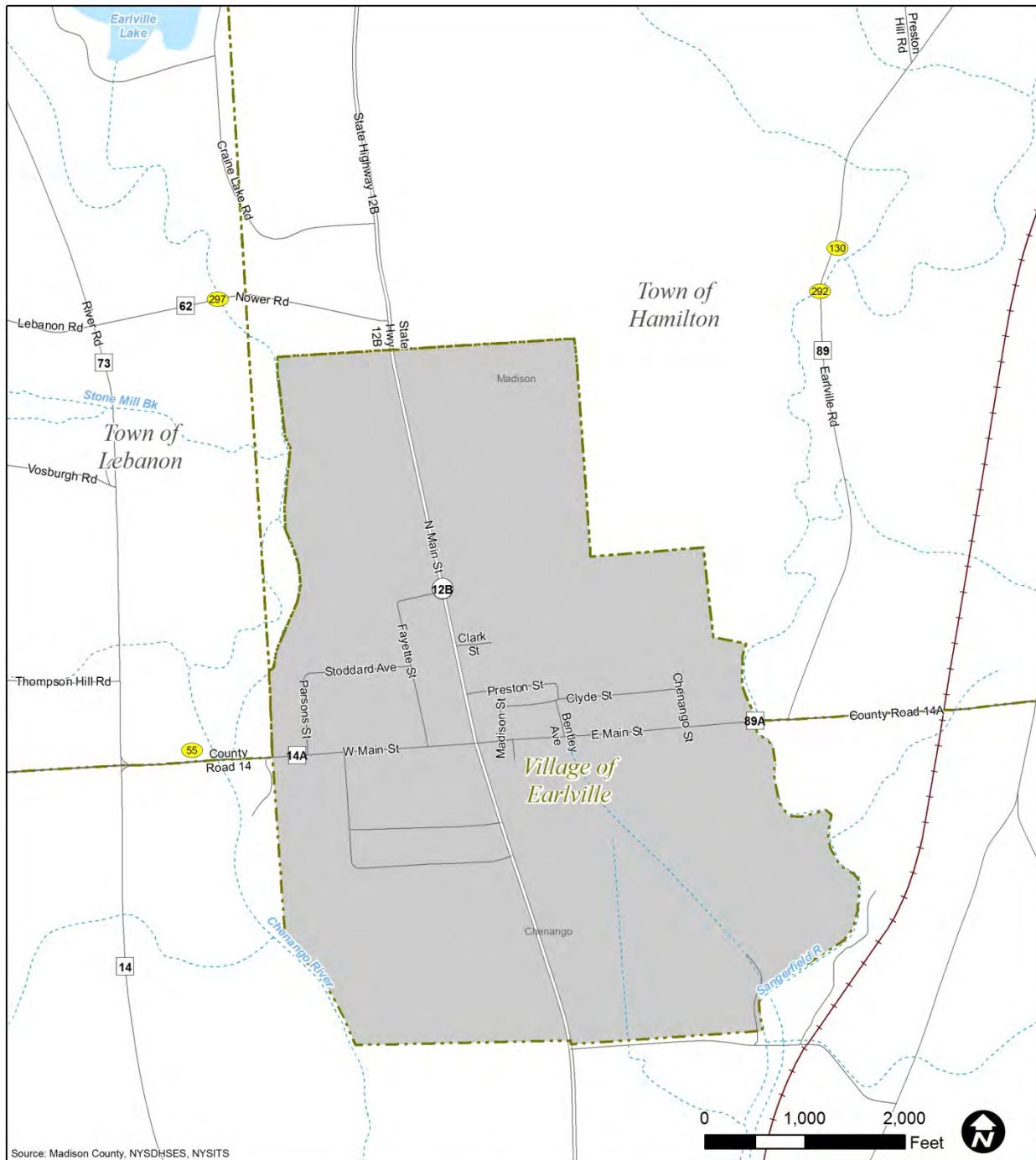


**Table 36: Risk Assessment Findings – Town and Village of DeRuyter**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>				
10	Citizens Bank	Medium	High	Extreme
28	Kelly Brothers Warehouse and Storage	Medium	High	Extreme
51	Barnes Dairy Farm	Medium	Moderate	High
52	Rounsaville Dairy Farm	Medium	Moderate	High
<b>Housing Assets</b>				
114	Single Family Residence	Medium	High	Extreme
115	Single Family Residence	Medium	High	Extreme
122	Single Family Residence	Medium	High	Extreme
149	Single Family Residences	Medium	Moderate	High
<b>Infrastructure Systems Assets</b>				
212	Crumb Hill Road Bridge, over Tioughnioga Creek	Low	High	Extreme
213	Mechanic Street Bridge, over Tioughnioga East Branch	Low	High	Extreme
224	Utica Street Bridge, over Tioughnioga Creek	Low	High	Extreme
238	Middle Lake Road Bridge, over Mid Branch Tioughnioga	Low	Moderate	High
279	East Lake Road Bridge, over Mid Branch Tioughnioga	Low	Moderate	High
280	Hunt Road Bridge, over Mid Branch Tioughnioga	Low	Moderate	High
281	Smith Road Bridge, over Mid Branch Tioughnioga	Low	Moderate	High



Figure 4-7: Village of Earlville Risk to Asset Map



**Earlville**  
Detail View of  
NYRCR Planning Area  
Madison County

- Roads**
- Highway
  - Local Street / County Route
  - Railroad
  - City / Village

- Asset Risk Level**
- Severe Risk
  - High Risk
  - Moderate Risk





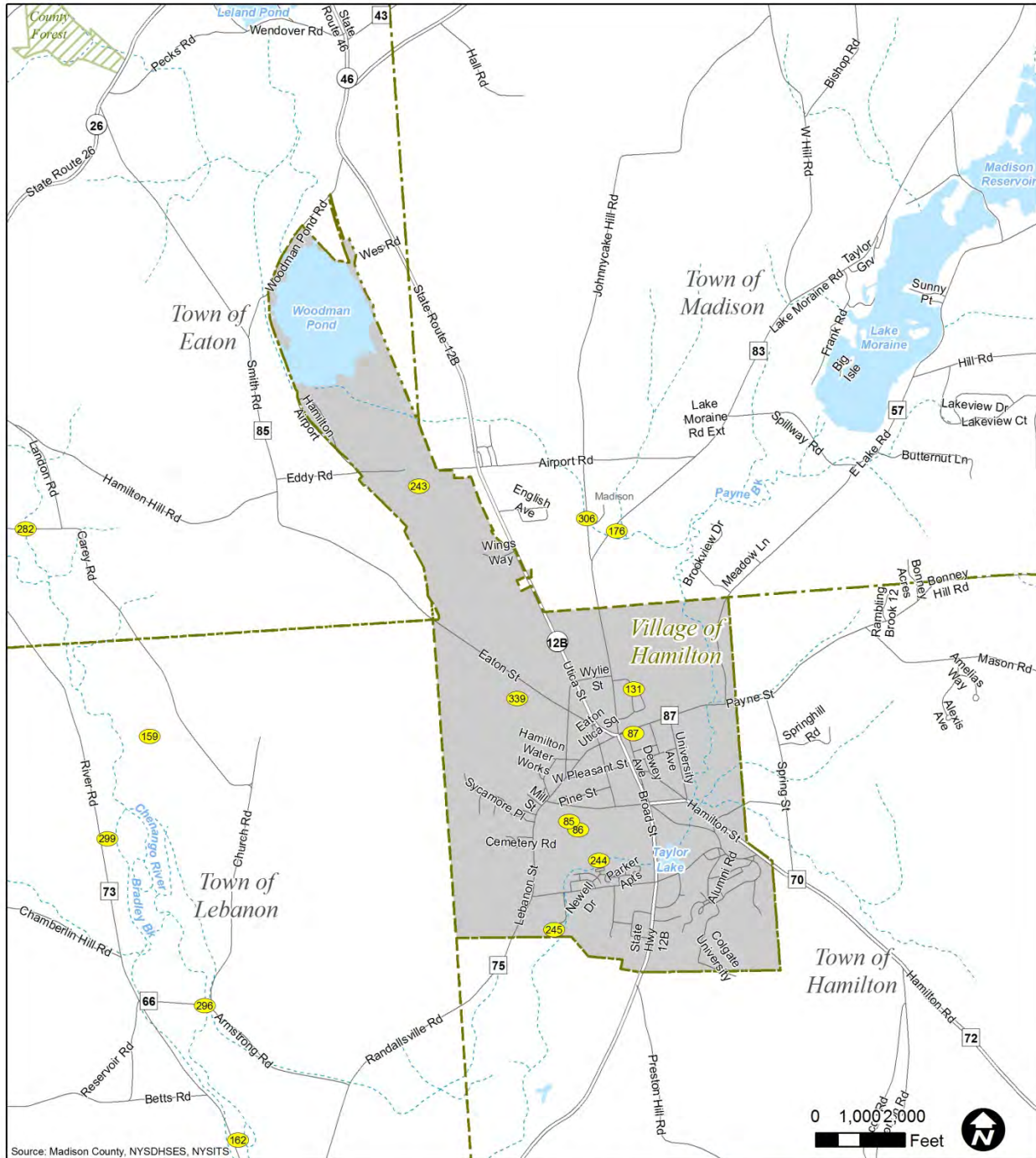
# NY Rising Madison County Resiliency Plan

**Table 37: Risk Assessment Findings – Village of Earlville and Surrounding Area**

#	Asset Name	Municipality	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>					
55	Small Commercial Sector	Lebanon	Medium	Moderate	High
<b>Housing Assets</b>					
130	Single Family Residence	Hamilton	Medium	Moderate	High
<b>Infrastructure Systems Assets</b>					
292	Earlville Road Bridge, over Sangerfield River	Hamilton	Low	Moderate	High
297	Lebanon Road Bridge, over Chenango River	Lebanon	Low	Moderate	High



Figure 4-8: Village of Hamilton Risk to Asset Map



Source: Madison County, NYS DHSES, NYSITS

**Hamilton**  
Detail View of  
NYRCR Planning Area  
Madison County

Roads	Asset Risk Level
Highway	Severe Risk
Local Street / County Route	High Risk
Railroad	Moderate Risk
City / Village	







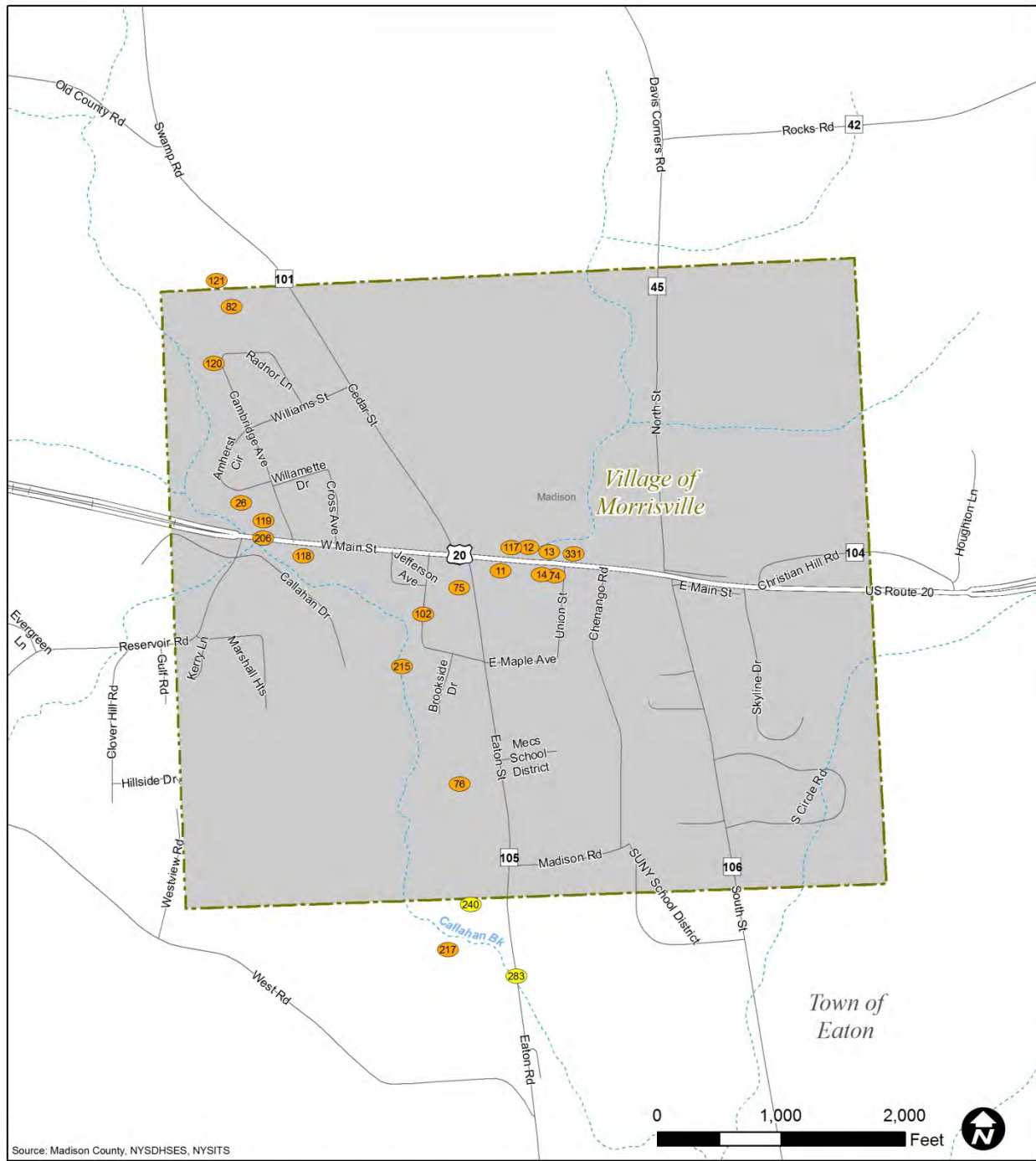
# NY Rising Madison County Resiliency Plan

**Table 38: Risk Assessment Findings – Town and Village of Hamilton**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Health and Social Services Assets</b>				
81	Fiver Children's Foundation	Medium	High	Extreme
85	Chenango Nursery School	Medium	Moderate	High
86	Hamilton Central School	Medium	Moderate	High
87	Hamilton Police Department	High	Moderate	High
<b>Housing Assets</b>				
116	Poolville Residences near Sangerfield River	Medium	High	Extreme
130	Single Family Residence	Medium	Moderate	High
131	Madison Lane Apartments (subsidized senior housing)	High	Moderate	High
157	Single Family Residence	Medium	Moderate	High
158	Single Family Residence	Medium	Moderate	High
<b>Infrastructure Systems Assets</b>				
214	Mill Street Bridge, over Sangerfield River	Low	High	Extreme
218	Camp Fiver Water Treatment	Low	High	Extreme
243	Hamilton Municipal Airport Runway	Low	Moderate	High
244	Hamilton Village - Payne Brook Well #1 & #2 AND Treatment	Low	Moderate	High
245	Hamilton Village Water Works	High	Moderate	High
291	CranstonRoad Bridge, over Sangerfield River	Low	Moderate	High
292	Earlville Road Bridge, over Sangerfield River	Low	Moderate	High
293	Green Road Bridge, over Sangerfield River	Low	Moderate	High
294	Larkin Road Bridge, over Sangerfield River	Low	Moderate	High
295	Willey Road Bridge, over Sangerfield River	Low	Moderate	High
<b>Natural and Cultural Resource Assets</b>				
339	Eaton Street Complex	Low	Moderate	High
344	Canaan Campgrounds	Low	Moderate	High



**Figure 4-9: Village of Morrisville Risk to Asset Map**



Source: Madison County, NYSDHSES, NYSITS

**Morrisville**  
Detail View of  
NYRCR Planning Area  
Madison County

- Roads**
- Highway
  - Local Street / County Route
  - Railroad
  - City / Village

- Asset Risk Level**
- Severe Risk
  - High Risk
  - Moderate Risk





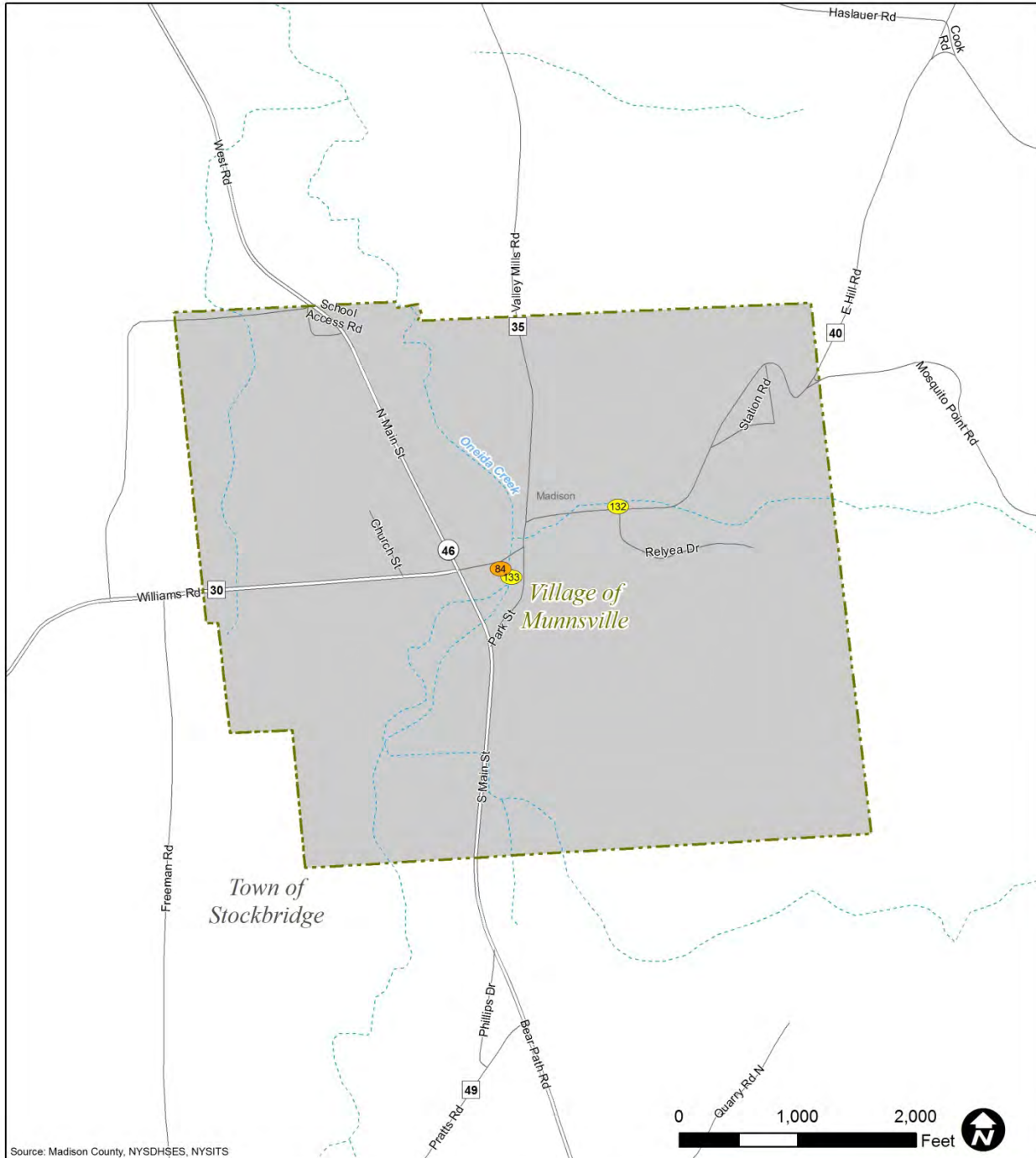
# NY Rising Madison County Resiliency Plan

**Table 39: Risk Assessment Findings – Village of Morrisville**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>				
11	Downtown Row Buildings	Medium	High	Extreme
12	Express Mart	Medium	High	Extreme
13	Key Bank	Medium	High	Extreme
14	Small Businesses	Medium	High	Extreme
26	Cooley's True Value	Medium	High	Extreme
<b>Health and Social Services Assets</b>				
74	Morrisville Fire Station	High	High	Extreme
75	Morrisville Post Office	Low	High	Extreme
76	Morrisville State College Garage	Medium	High	Extreme
82	Madison County Highway Garage	High	High	Extreme
<b>Housing Assets</b>				
102	Single Family Residences	Medium	High	Extreme
117	CCLF Senior Housing	High	High	Extreme
118	Single Family Residences	Medium	High	Extreme
119	Single Family Residences	Medium	High	Extreme
120	Single Family Residences	Medium	High	Extreme
<b>Infrastructure Systems Assets</b>				
206	West Main Street Bridge, over Callahan Brook	Low	High	Extreme
215	Morrisville Village - Drilled Well #1	Low	High	Extreme
<b>Natural and Cultural Resource Assets</b>				
331	Morrisville Library	Low	High	Extreme



**Figure 4-10: Village of Munnsville Risk to Asset Map**



<b>Munnsville</b> Detail View of NYRCR Planning Area Madison County	<b>Roads</b> Highway Local Street / County Route Railroad City / Village	<b>Asset Risk Level</b> Severe Risk High Risk Moderate Risk
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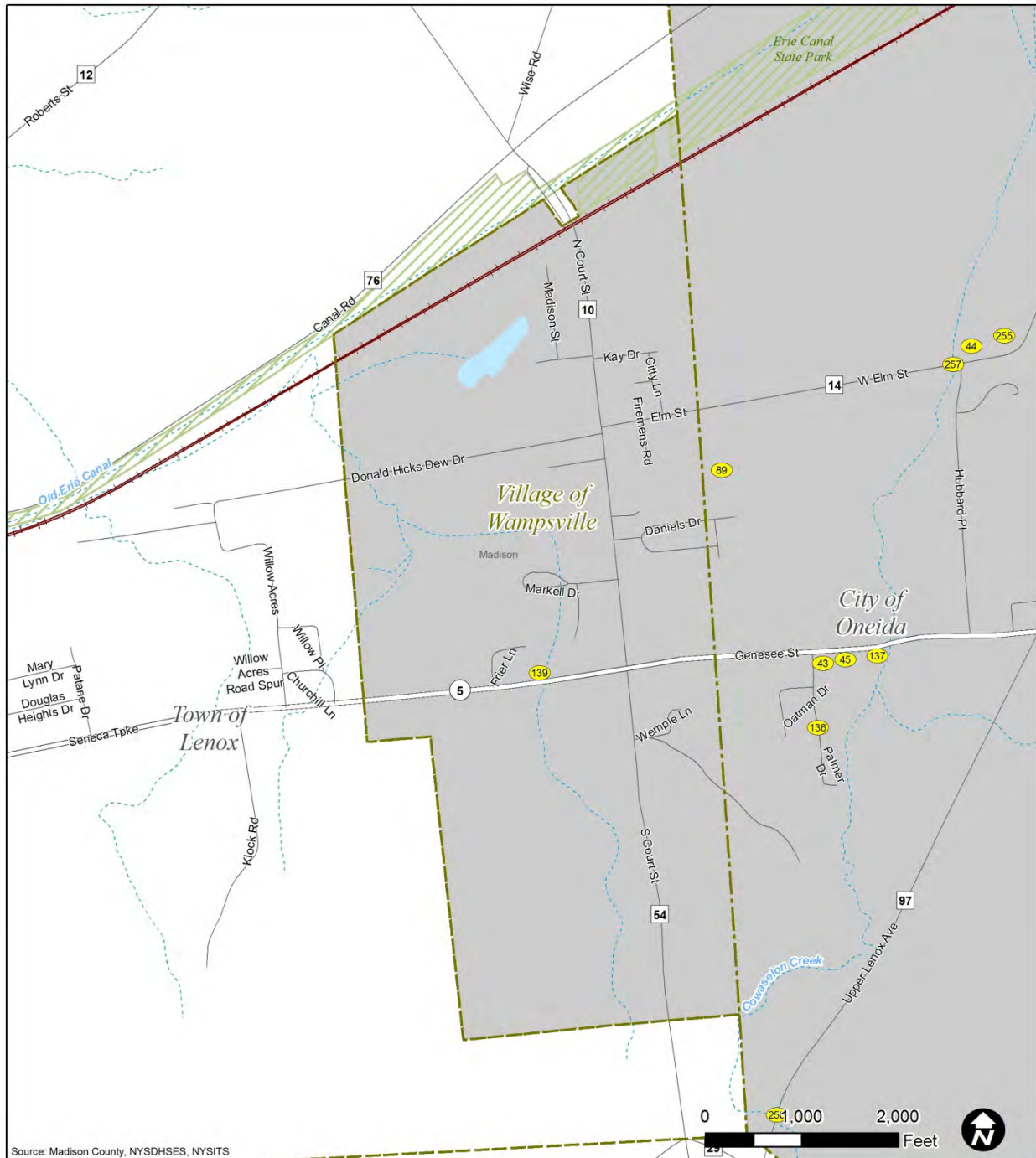


**Table 40: Risk Assessment Findings – Village of Munnsville**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Health and Social Services Assets</b>				
84	Munnsville Post Office	Low	High	High
<b>Housing Assets</b>				
132	Single Family Residences	Medium	Moderate	High
133	Single Family Residences	Medium	Moderate	High



**Figure 4-11: Village of Wampsville Risk to Asset Map**



Source: Madison County, NYSDHSES, NYSITS

**Wampsville**  
Detail View of  
NYRCR Planning Area  
Madison County

- Roads**
- Highway
  - Local Street / County Route
  - Railroad
  - City / Village

- Asset Risk Level**
- Severe Risk
  - High Risk
  - Moderate Risk





# NY Rising Madison County Resiliency Plan

**Table 41: Risk Assessment Findings – Village of Wampsville**

#	Asset Name	Community Value	Risk Score Level	Risk Area
<b>Housing Assets</b>				
139	Single Family Homes	Medium	Moderate	High

Below is a table of countywide asset which are not shown on the previous figures.

**Table 42: Risk Assessment Findings – Additional Countywide Assets**

#	Asset Name	Municipality	Community Value	Risk Score Level	Risk Area
<b>Economic Assets</b>					
53	Predmores General Store	Georgetown	Medium	Moderate	High
54	The Georgetown Inn	Georgetown	Medium	Moderate	High
55	Small Commercial Sector	Lebanon	Medium	Moderate	High
56	ALDI	Lenox	Medium	Moderate	High
57	Callahan Marina	Lenox	Low	Moderate	High
58	Hidden Harbor	Lenox	Medium	Moderate	High
59	J Tornabene Trucking	Lenox	Medium	Moderate	High
60	Pier 31	Lenox	Low	Moderate	High
61	Fuess Dairy Farm	Madison	Medium	Moderate	High
62	Just Another Bar	Madison	Medium	Moderate	High
63	Brubaker Farm	Stockbridge	Medium	Moderate	High
64	Squires Dairy Farm	Stockbridge	Medium	Moderate	High
65	BDR Farms, LLC	Sullivan	Medium	Moderate	High
66	Bill's Marien Sales at Fisher Bay	Sullivan	Medium	Moderate	High
67	Canaseraga Farms	Sullivan	Medium	Moderate	High
68	CSM Tile Co	Sullivan	Medium	Moderate	High
69	Fremac Waterfront Company	Sullivan	Medium	Moderate	High
70	Lakeport Marina	Sullivan	Low	Moderate	High
71	Stone's Marina Kayak Club	Sullivan	Medium	Moderate	High
<b>Health and Social Services Assets</b>					
93	Community Memorial Health Center	Georgetown	High	Moderate	High
94	Georgetown Fire Station and Ambulance	Georgetown	High	Moderate	High
95	Georgetown Veterinary Clinic	Georgetown	High	Moderate	High
96	Town of Georgetown Highway Garage	Georgetown	High	Moderate	High
97	Town of Georgetown Offices	Georgetown	Low	Moderate	High
98	Time to Shine Preschool	Lenox	Medium	Moderate	High
99	Erieville Fire Station	Nelson	High	Moderate	High
100	Town of Sullivan Highway Department	Sullivan	High	Moderate	High



# NY Rising Madison County Resiliency Plan

**Table 42: Risk Assessment Findings – Additional Countywide Assets Cont’d**

Housing Assets					
121	Apartments	Eaton	Medium	High	Extreme
123	Single Family Residences	Brookfield	Medium	Moderate	High
140	Single Family Residences	Brookfield	Medium	Moderate	High
140	Single Family Residences	Brookfield	Medium	Moderate	High
141	Single Family Residences	Brookfield	Medium	Moderate	High
150	Single Family Residence	Eaton	Medium	Moderate	High
151	Single Family Residences	Eaton	Medium	Moderate	High
152	Single Family Residence	Fenner	Medium	Moderate	High
153	Single Family Residence	Fenner	Medium	Moderate	High
154	Valley View Mobile Home Park	Fenner	High	Moderate	High
155	Homes in the Georgetown Hamlet	Georgetown	Medium	Moderate	High
156	Single Family Residence	Georgetown	Medium	Moderate	High
159	Single Family Residence	Lebanon	Medium	Moderate	High
160	Single Family Residences	Lebanon	Medium	Moderate	High
161	Single Family Residences	Lebanon	Medium	Moderate	High
162	Single Family Residences	Lebanon	Medium	Moderate	High
163	Cluster of Single Family Houses - Kelley Rd	Lenox	Medium	Moderate	High
164	Single Family Homes	Lenox	Medium	Moderate	High
165	Single Family Homes - Walnut Point	Lenox	Medium	Moderate	High
166	Single Family Residence	Lenox	Medium	Moderate	High
167	Homes on Clockville Road by Clockville Creek	Lincoln	Medium	Moderate	High
168	Single Family Residence	Lincoln	Medium	Moderate	High
169	Single Family Residence	Lincoln	Medium	Moderate	High
170	Single Family Residence	Lincoln	Medium	Moderate	High
171	Single Family Residence	Lincoln	Medium	Moderate	High
172	Single Family Residence	Lincoln	Medium	Moderate	High
173	Single Family Residence	Lincoln	Medium	Moderate	High
174	Single Family Residences	Lincoln	Medium	Moderate	High
175	Single Family Residences	Lincoln	Medium	Moderate	High
176	Single Family Residence - Lake Moraine Rd	Madison	Medium	Moderate	High
177	Apartments	Nelson	Medium	Moderate	High
178	North Lake Rd Homes	Nelson	Medium	Moderate	High
179	Single Family Residence	Nelson	Medium	Moderate	High
180	Single Family Residences	Smithfield	Medium	Moderate	High
181	Single Family Residences	Smithfield	Medium	Moderate	High
182	Single Family Residence	Stockbridge	Medium	Moderate	High





**Table 42: Risk Assessment Findings – Additional Countywide Assets Cont’d**

183	Single Family Residence	Stockbridge	Medium	Moderate	High
184	Single Family Residence	Stockbridge	Medium	Moderate	High
185	Single Family Residences	Stockbridge	Medium	Moderate	High
186	Harbour Town Development	Sullivan	Medium	Moderate	High
187	Homes along Creek Road	Sullivan	Medium	Moderate	High
188	Homes near Chestnut Ridge and Devaul Road	Sullivan	Medium	Moderate	High
189	Homes near Chittenango Creek Outlet	Sullivan	Medium	Moderate	High
190	Lakefront Homes - Andrews Shore Road	Sullivan	Medium	Moderate	High
191	Mohawk Community - Mobile Home Park	Sullivan	High	Moderate	High
192	Sandy Hatch Road Homes	Sullivan	Medium	Moderate	High
193	Single Family Residence	Sullivan	Medium	Moderate	High
194	Single Family Residence	Sullivan	Medium	Moderate	High
195	Single Family Residence	Sullivan	Medium	Moderate	High
196	Single Family Residence	Sullivan	Medium	Moderate	High
197	Single Family Residence	Sullivan	Medium	Moderate	High
198	Single Family Residence	Sullivan	Medium	Moderate	High
199	Single Family Residence	Sullivan	Medium	Moderate	High
200	Single Family Residences	Sullivan	Medium	Moderate	High
201	Single Family Residences	Sullivan	Medium	Moderate	High
202	Single Family Residences - Marsh Mills Road	Sullivan	Medium	Moderate	High
203	Single Family Residences - West end of Moore Road	Sullivan	Medium	Moderate	High
204	Wheeler Road Homes	Sullivan	Medium	Moderate	High
<b>Infrastructure Systems Assets</b>					
217	Morrisville State College - Drilled Well #3	Eaton	Low	High	Extreme
220	Boatyard Road Bridge, over Canal Feeder	Sullivan	Low	High	Extreme
239	Brooklyn Street Bridge, over Chenango River	Eaton	Low	Moderate	High
240	Morrisville State College - Drilled Well #1 & 2	Eaton	Low	Moderate	Extreme
241	Bingley Road Bridge, over Chittenango Creek	Fenner	Low	Moderate	High
242	Mill Road Bridge, over Otselic River	Georgetown	Low	Moderate	High
246	Interstate 90 Bridge, over Cowaselon Creek	Lenox	Low	Moderate	High
247	North Court Street Bridge, over Cowaselon Creek	Lenox	Low	Moderate	High



**Table 42: Risk Assessment Findings – Additional Countywide Assets Cont’d**

248	Tackabury Road Bridge, over Cowaselon Creek	Lenox	Low	Moderate	High
258	South Butler Road Bridge, over Oneida Creek	Smithfield	Low	Moderate	High
259	Bolivar Road Bridge, over Chittenango Creek	Sullivan	Low	Moderate	High
260	Dyke Road Bridge, over Chittenango Creek	Sullivan	Low	Moderate	High
261	Gee Road Bridge, over Cowaselon Creek	Sullivan	Low	Moderate	High
262	Kirkville Road Bridge, over BLACK Creek	Sullivan	Low	Moderate	High
263	Lakeport Road Bridge, over Vly Creek	Sullivan	Low	Moderate	High
264	McGraw Road Bridge, over Chittenango Creek	Sullivan	Low	Moderate	High
265	New Boston Road Bridge, over Canaseraga Creek	Sullivan	Low	Moderate	High
266	Olmstead Road Bridge, over Chittenango Creek	Sullivan	Low	Moderate	High
267	Center Street Bridge, over Unadilla River	Brookfield	Low	Moderate	High
268	Main Street Bridge, over Beaver Creek	Brookfield	Low	Moderate	High
269	Swamp Road Bridge, over Sangerfield River	Brookfield	Low	Moderate	High
270	Welch Road Bridge, over Unadilla River	Brookfield	Low	Moderate	High
271	Yaw Bridge Road Bridge, over Unadilla River	Brookfield	Low	Moderate	High
282	Carey Road Bridge, over Chenango River	Eaton	Low	Moderate	High
283	Eaton Road Bridge, over Chenango River	Eaton	Low	Moderate	High
284	Lebanon Hill Road Bridge, over Eaton Brook	Eaton	Low	Moderate	High
285	NYSEG Electical Substation	Eaton	High	Moderate	High
286	River Road Bridge, over Eaton Brook	Eaton	Low	Moderate	High
287	East Hill Road Bridge, over Otselic River	Georgetown	Low	Moderate	High
288	Georgetown W.D. - Drilled Wells #1 & #2	Georgetown	Low	Moderate	High
289	Lebanon Road Bridge, over Otselic River	Georgetown	Low	Moderate	High
290	State Route 26 Bridge, over OTSELIC Creek	Georgetown	Low	Moderate	High
296	Armstrong Road Bridge, over Chenango River	Lebanon	Low	Moderate	High
298	Middleport Road Bridge, over Payne BRK	Lebanon	Low	Moderate	High
299	Oil & Gas Well - Carhart 1, American Natural Resources, Inc.	Lebanon	Low	Moderate	High
300	Randallsville Road Bridge, over Chenango River	Lebanon	Low	Moderate	High
301	Bee Bee Bridge Road Bridge, over Old Erie Canal	Lenox	Low	Moderate	High
302	Hardwood Road Bridge, over Cowaselon Creek	Lenox	Low	Moderate	High
303	Interstate 90 Bridge, over Cowaselon Creek	Lenox	Low	Moderate	High
304	Clockville Rd Bridge, over Cowaselon Creek	Lincoln	Low	Moderate	High
305	Creek Road Bridge, over Cowaselon Creek	Lincoln	Low	Moderate	High
306	Johnny Creek Hill Road Bridge, over Madison Res. Feeder	Madison	Low	Moderate	High



**Table 42: Risk Assessment Findings – Additional Countywide Assets Cont’d**

307	Oriskany Falls Village - Well #1, #2, #3 AND Water Treatment	Madison	Low	Moderate	High
308	Water Street Bridge, over Oriskany Creek	Madison	Low	Moderate	High
309	Lyon Road Bridge, over Chittenango Creek	Nelson	Low	Moderate	High
310	Creek Road Bridge, over Cowaselon Creek	Smithfield	Low	Moderate	High
311	Glass Factory Road Bridge, over Oneida Creek	Smithfield	Low	Moderate	High
312	Oxbow Road Bridge, over Oneida Creek	Smithfield	Low	Moderate	High
313	Peterboro Road Bridge, over Oneida Creek	Smithfield	Low	Moderate	High
314	Haslauer Road Bridge, over Oneida Creek	Stockbridge	Low	Moderate	High
315	Valley Mills Road Bridge, over Oneida Creek	Stockbridge	Low	Moderate	High
316	BLACK Creek Road Bridge, over BLACK Creek	Sullivan	Low	Moderate	High
317	Creek Road Bridge, over Canaseraga Creek	Sullivan	Low	Moderate	High
318	Harsh Road Bridge, over Canaseraga Creek	Sullivan	Low	Moderate	High
319	I-90 flood-risk area between mile marker 266.8 and 270.4	Sullivan	Low	Moderate	High
320	Interstate 90 Bridge, over Canaseraga Creek	Sullivan	Low	Moderate	High
321	Lakeport Road Bridge, over Pennock Ditch	Sullivan	Low	Moderate	High
322	National Grid Gas Measuring Station	Sullivan	High	Moderate	High
323	State Route 31 Bridge, over Canaseraga Creek	Sullivan	Low	Moderate	High
324	State Route 31 Bridge, over Chittenango Creek	Sullivan	Low	Moderate	High
325	State Route 5 Bridge, over Canaseraga Creek	Sullivan	Low	Moderate	High
326	Tag Road Bridge, over Canaseraga Creek	Sullivan	Low	Moderate	High
327	Telecommunications Tower	Sullivan	High	Moderate	High
<b>Natural and Cultural Resource Assets</b>					
343	Georgetown Fireman's Park	Georgetown	Low	Moderate	High
345	Believers Chapel	Lenox	Low	Moderate	High
346	Lincoln Methodist Church	Lincoln	Low	Moderate	High
347	Oxbow County Park	Lincoln	Low	Moderate	High
348	Sullivan Town Park	Sullivan	Low	Moderate	High



## Section III: Reconstruction and Resiliency Strategies

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*Cyclists in front of the First Presbyterian Church on Albany Street in the Village of Cazenovia*



## NY Rising Madison County Resiliency Plan

The process of identifying the NY Rising Community Reconstruction (NYRCR) Madison County post-storm needs and opportunities informed the NYRCR Madison County Planning Committee's (Committee) development of strategies to resolve these needs and realize opportunities. In turn, the strategies helped conceptualize and design projects to specifically address these needs and opportunities.

Strategies are approaches to the conceptualization of projects, programs, policies, or other actions that specifically address an identifiable need. Typically, there are several strategies to address a given need. Communities are most successful when they blend traditional stabilization and repair actions with a holistic, long-range, forward-looking view of recovery and resiliency. This section presents the strategies developed by the Committee for how best to use Community assets, capitalize on opportunities, and resolve critical issues.

For every need or opportunity, potential strategies were generated for each Recovery Support Function (RSF) with the goal of identifying strategies with benefits in multiple RSFs. Potential strategies span an array of methodologies and timeframes, from preparedness to retrofits, from immediate procedural improvements to long-range capital investments programs. Strategies may also include conservation of natural protective features, regulatory changes and building code updates, structural defenses, resilient retrofits, market measures, land use planning, and education and outreach in an effort to employ multiple, complementary actions rather than relying on a single means of protection.

Careful consideration was given to what is at risk, what resources are available, and the capacity to implement various management measures. As resiliency strategies evolved into specific projects and actions, consideration was given to how each strategy relates to impacts from the summer 2013 rain events on the Community; to what extent each strategy would reduce current and projected risk; whether it contributed to protection of vulnerable populations; feasibility of a successful implementation; compliance with existing regulations; upfront and long-term maintenance costs; direct and indirect benefits; and public perception and support.

Reconstruction and resiliency strategies were developed which were derived from assets at risk relative to the Community's needs, as identified in the previous sections of this Plan. Each strategy was designed to take into account the following considerations:

1. Whether it reduced the level of risk and met an identified Community need;
2. Whether it helped (or improved the resiliency of) vulnerable populations; and
3. Whether it could be implemented through discrete programs and/or projects.

The following pages will discuss the strategies that were developed.



### *Community Planning and Capacity Building Strategies*

Strategies in the Community Planning and Capacity Building recovery support function include:

- Secure equipment necessary for emergency responders to function during a storm event
- Floodproof existing electrical and natural gas infrastructure located in the floodplain and create a backup system of power
- Provide floodproof emergency shelter and facilities for the Community
- Enhance communications and expand educational efforts so that people, businesses, and social service providers know what to expect and how to access assistance prior to, during and immediately following a storm
- Collaborate with nearby communities to foster regional cooperation in addressing flooding and related issues
- Expand, update, and strengthen local land use regulations and building codes to reduce development in areas at risk of flooding

These strategies address the need for stronger regulation of development in the floodplain in many of the villages and towns of Madison County. Many homes structures have been constructed adjacent to creeks and streams that are known to flood, thus putting those structures at direct risk of flooding. In some instances this may be due to lack of regulations or enforcement of existing regulations. The municipalities of Madison County can mitigate risk to homes and businesses by discouraging future development in areas that are known to flood. These development limits will allow municipalities to increase the area available for creek floodplains and allow creeks to return to more natural flow patterns. Additionally, many homeowners, and potential homeowners, may not know that their property is located in a flood zone, what they can do to reduce their risk, and what resources are available for mitigation efforts. There are two proposed projects that were derived from this strategy.

These strategies will also address the need for improved communication during and immediately after emergencies and the need for improved information, education, and coordination between affected homeowners and agencies. This strategy will include several components that address obtaining and disseminating real-time information on flooding events, utilizing various communication channels to inform citizens, and improving coordination among responding regional agencies and local organizations following a disaster. Communication should also be via multiple means, such as email, texts, tweets, website updates and more. Quick dissemination of information before an emergency is vital since extreme rain events can happen very quickly and cause flooding and mudslides in a short amount of time. Following an emergency event, clear and concise information needs to be made easily accessible so that residents know when it is safe to return to their homes and businesses and what resources are available for rebuilding.



**Table 43: Community Planning and Capacity Building Strategies**

Strategy	Project #	Project Title	Project Description	Estimated Cost	Page #
Provide floodproof emergency shelter and facilities for the Community.	P40	Oneida Armory Flood Barrier Installation	Flooding of the Oneida Creek via bank and bridge overtopping resulted in three feet of water, which entered via the garage and entry doors, on the ground floor of the Parks and Recreation Armory in the City of Oneida. During the floods, the armory's upper level floors were being used a flood shelter until water began entering the ground level. Flood victims were required to relocate to another shelter. This project will install a FEMA approved stackable or passive flood barrier for the 16-ft wide garage door and entry access. This will dry floodproof the structure in accordance with FEMA requirements and prevent future flooding of the ground floor.	\$48,000	123
Secure equipment necessary for emergency responders to function during a storm event.	P5	Fire Department PFD's and Dry Suits	This project will provide vital rescue services to the public. County fire departments are in need of 64 dry suits and 150 Personal Flotation Devices (PFDs) for first responders for use in flood events as well as a cache of sand bags for flood abeyance. Since the County does not have its own fire department, the material will be purchased by the County and distributed to various local fire departments on an as-needed basis.	\$68,950	125
Floodproof existing electrical and natural gas infrastructure located in the floodplain and create a backup system of power.	P12	Emergency Power Generation for Municipal Buildings and Shelter	Flooding caused widespread power outages including emergency shelters and municipal buildings throughout the County. This project will identify and prepare buildings in various locations Countywide to receive power via the purchase of mobile generators which can be shared or relocated as needed during power outages. On-site electrical will likely be necessary for building preparation.	\$650,000	127

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# NY Rising Madison County Resiliency Plan

**Table 45: Community Planning and Capacity Building Strategies Cont'd**

Strategy	Project #	Project Title	Project Description	Estimated Cost	Page #
Enhance communications and expand educational efforts so that people, businesses, and social service providers know what to expect and how to access assistance prior to, during and immediately following a storm.	R1	Countywide Emergency Communications Plan	The emergency communications plan would identify gaps and needs as well as innovative methods to communicate with the public, service agencies, volunteers and emergency responders. The plan would formalize protocols for emergency events and determine the process for establishing a consistent 'message' that can be distributed via variable message boards in strategic locations, cell phone applications, websites, and word-of-mouth by emergency personnel. Appropriate locations for mobile command centers and communications would also be identified.	\$150,000	129
Collaborate with nearby communities to foster regional cooperation in addressing flooding and related issues.	R2	Emergency Stream Intervention Training	Coordinate with watershed districts and other adjacent counties to provide training to local and state officials about emergency stream intervention and methods to minimize unintentional environmental degradation and long-term stream instability. This would include continued coordination with the Upper Susquehanna Watershed Coalition, the Oneida Lake Watershed and the Mohawk Watershed Coalition.	\$30,000	132
Expand, update, and strengthen local land use regulations and building codes to reduce development in areas at risk of flooding.	R3	Resiliency Tools Guide	This guide would identify various tools that may be helpful for local communities to increase resiliency. Step 1 - Conduct a diagnostic of local land use regulations related to stormwater management and floodplain development Step 2 - Prepare sample regulations that can be modified and adopted by local communities Step 3 - Develop an Educational Campaign for homeowners, land use boards and code enforcement officials, including creating and distributing educational materials	\$75,000	134

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*





### *Economic Strategies*

Strategies in the Economic recovery support function include:

- Diversify the local economy, including tourism, light industry, small business, agriculture, and green industries
- Create a marketing/branding strategy to attract visitors
- Identify funding opportunities to attract and assist small businesses

Even before the 2013 summer flooding, the Villages, City and Towns of Madison County were working towards strengthening economic development. Flooding damage to businesses and farms resulted in economic losses due to closures, crop loss, and the costs of repairs and rebuilding. These strategies aim to support municipal efforts and investments that encourage or incentivize businesses to remain in the County and retain existing jobs. The County, local municipalities, and business organizations are engaged in efforts to attract new businesses to the area.

Additionally, downtowns can be made more attractive to businesses, residents and visitors at the same time they are made more resilient. These initiatives could boost the local economy by strengthening the business districts within the villages, towns, and City of Oneida. Many of the municipalities in the County are in need of downtown revitalization. The downtown centers are underutilized, with many storefronts vacant. Through these strategies, the Community seeks to grow the local tax base by recommending actions and improvements that will attract new businesses, create jobs, and enhance resiliency of existing commercial properties.

One of Madison County's strengths is its tourism industry which includes shopping, farmers markets, art galleries, museums, agritourism, historical sites, and outdoor recreation amenities. These resources can be expanded upon to attract more tourists and economic development to the area. These strategies promote economic vitality, tourism, and recreational opportunities that serve the residents of Madison County and help improve economic resilience. The strategy is local, but has regional implications as it would attract and serve visitors and tourists in addition to local residents.



**Table 44: Economic Strategies**

Strategy	Project #	Project Title	Project Description	Estimated Cost	Page #
Diversify the local economy, including tourism, light industry, small business, agriculture, and green industries.	R4	Madison County Strategic Economic Development Plan Implementation	This project would involve providing support to Madison County and the Center for Economic Development to implement the County's Strategic Plan, increasing economic development opportunities and enhancing employment opportunities countywide. This project would focus on supporting and expanding primary target industries including agri-tourism and renewable energy as well as facilitating the development of shovel ready business parks for future growth and development opportunities. It would also align goals with the greater region, diversify the economic base, provide employment opportunities for the people of our Community, and improve regional competitiveness.	\$100,000	136
	R5	Countywide Downtown Revitalization Plan	This project would prepare a downtown revitalization plan that could assist the County's hamlets and villages to increase investment, promote infill, enhance economic development opportunities and improve streetscapes.	\$250,000	139
	R6	City of Oneida Downtown Revitalization Plan	The City of Oneida downtown is similar to many downtowns in Upstate New York with vacant storefronts and the need for revitalization. While many businesses are experiencing success, there is an opportunity to bring new energy to the downtown. This project would prepare and implement a downtown revitalization plan that may include streetscape enhancements, infill development, and historic property preservation and enhancement.	\$100,000	142

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# NY Rising Madison County Resiliency Plan

**Table 46: Economic Strategies Cont'd**

Strategy	Project #	Project Title	Project Description	Estimated Cost	Page #
Create a marketing/branding strategy to attract visitors.	<b>R7</b>	Countywide Wayfinding Signage Plan and Implementation	Madison County offers many diverse opportunities for niche tourism. Given the vast, rural nature of the County, it may be a challenge for visitors to recognize what tourism opportunities exist and how to find them. Wayfinding signage, including a County brand, can provide clear and easy information to visitors. The signage may identify locations of restaurants, cultural or historic facilities, or recreation opportunities. The intent of this project is to raise visitor awareness of the County's resources. A clear wayfinding program can also assist residents to better navigate in the event of an emergency.	\$250,000	145
	<b>R8</b>	Centralized Chamber of Commerce Feasibility Plan	This project would evaluate the feasibility of combining the existing five Chambers of Commerce within the County. The project would evaluate the benefits of this approach from a business and tourism perspective as well as from a fiscal standpoint. A centralized Chamber of Commerce could create a single, comprehensive resource for businesses as they recover from storm events.	\$10,000	147
Identify funding opportunities to attract and assist small businesses.	<b>R9</b>	Extension and Recapitalization of the County's Microenterprise Program	The County currently has a microenterprise program to provide training and assistance to small businesses. This project would continue the program and allow the County to continue assisting local businesses, supporting the County's economic resilience.	\$200,000	149

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### *Health and Social Services Strategies*

Strategies in the Health and Social Services recovery support function include:

- Upgrade and/or relocate critical government facilities and infrastructure out of the flood plain
- Formalize a system with partnering organizations to provide services during and following a flood event
- Planning and preparedness for protection of residents including the most vulnerable populations
- Upgrade and/or relocate critical government facilities and infrastructure out of the flood plain

Many community facilities were damaged during the summer 2013 flooding. These strategies support the relocation of vital community services out of the floodplain and evaluate the resiliency of other facilities in the County at risk for future flooding. This effort would inventory municipal structures and evaluate the risk of those facilities as well as a series of potential alternatives that could be implemented on a case by case basis to protect these important facilities. The benefits, impacts and costs of each alternative would be evaluated, including the long-term impacts upstream and downstream. A reduction of damage risk to the facilities and any associated equipment, as well as a reduction in local government expenditure for reconstruction and replacement due to damages would be anticipated.

Madison County's senior population, as well as migrant farm workers, persons with disabilities, low income individuals and families and the Amish community represent vulnerable populations. The Madison County NYRCR Committee identified the need to ensure that the most vulnerable populations within the County have the necessary information to adequately prepare for disasters and temporary shelter in the event of an emergency. These strategies aim at developing and maintaining an up-to-date vulnerable population database which could be used during an emergency to prioritize emergency responder and evacuation efforts. The registry would identify vulnerable populations within the County and establish a plan to provide outreach and education about pre-existing programs to assist these populations. This project would improve the capacity of the County Emergency Services Operations as well as the County Public Health Department to prepare for and respond to future storm events.



**Table 45: Health and Social Services Strategies**

Strategy	Project #	Project Title	Project Description	Estimated Cost	Page #
Upgrade and/or relocate critical government facilities and infrastructure out of the flood plain.	P37	City of Oneida DPW Garage Relocation	Flooding of the Oneida Creek resulted in 3-4 feet of water in the City of Oneida DPW garage and substantial damages, including structural, to the existing City DPW garage building as well as loss of equipment. Along with equipment and vehicle damage, an oil (motor, transmission, hydraulic) spill occurred in the garage due to the flood. The existing facility is 4.6 feet below the 100-year floodplain and directly south of the worst observed streambank overtopping. The project will relocate the City DPW garage and related facilities out of the 100-year floodplain boundary. A new facility with sustainable features would be designed, bid and then constructed on City-owned property.	\$1,900,000	151
	P38	Relocation of the Oneida City Water Department Garage	Flooding of the Oneida Creek via bank and bridge overtopping resulted in 3-4 feet of water in the City of Oneida's Water Department garage (adjacent to the Oneida DPW) located at Sconodoo Street and substantial damages and equipment loss. The existing facility is a one-story slab on grade structure, approximately 3,000 SF in size and sits over 4 feet below the flood elevation. The project will relocate the Water Department to a new facility out of the 100-year floodplain.	\$480,000	154
	P39	Relocation of the Oneida City Salt Shed	Flooding of the Oneida Creek via bank and bridge overtopping resulted in damages to the City of Oneida's salt shed whose slab is located 1-foot above the flood elevation. A loss of materials occurred as well. The existing facility has a 1,000-ton material capacity. The project will relocate the salt shed to a new facility out of the 100-year floodplain.	\$60,000	156

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# NY Rising Madison County Resiliency Plan

**Table 47: Health and Social Services Strategies Cont'd**

Strategy	Project #	Project Title	Project Description	Estimated Cost	Page #
Upgrade and/or relocate critical government facilities and infrastructure out of the flood plain.	<b>R12</b>	Resiliency Evaluation of Municipal Facilities Countywide	This project would evaluate the resiliency of municipal and governmental facilities located in or adjacent to the floodplain. This countywide effort would inventory municipal structures and evaluate the risk of those facilities as well as a series of potential alternatives that could be implemented on a case by case basis to protect these important facilities. This project will include a pilot project that specifically evaluates alternatives to protect the Georgetown Town Hall, public works facilities, and several nearby homes. The Town Hall is adjacent to the Otselic River which often floods. The study may evaluate floodproofing the structures, relocation or implementing other physical measures to protect the structures. The benefits, impacts and costs of each alternative would be evaluated, including the long-term impacts upstream and downstream.	\$400,000	162
Formalize a system with partnering organizations to provide services during and following a flood event.	<b>R10</b>	Madison County Department of Health Data Management System	The Health Data Management System project would develop a baseline of environmental health indicators and identify the appropriate data system to track and manage the indicators. These indicators could be tracked over time to understand the health impacts of flood events, particularly on rural communities. This system would be a coordinated effort with the NYS Department of Health and other agencies. Establishing a beta test for the system would be a subsequent task.	\$70,000	158
Plan and prepared for the protection of residents including the most vulnerable populations.	<b>R11</b>	Vulnerable Populations Registry and Outreach	The registry would identify vulnerable populations within the County and establish a plan to provide outreach and education about pre-existing programs to assist these populations. This project would improve the capacity of the County Emergency Services Operations as well as the County Public Health Department to prepare for and respond to future storm events.	\$30,000	160

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



## *Housing Strategies*

Strategies in the Housing recovery support function include:

- Enhance public safety and wellbeing within flood impacted neighborhoods
- Ensure a diversity of safe, affordable housing options in areas not prone to flooding
- Provide incentives for elevation or retrofit of homes

The impacts of the summer 2013 flooding highlighted the need for more resilient and diverse housing stock within the County. These strategies would reduce risk for residents of the Community by providing direct assistance or incentives to homeowners to relocate outside of the flood zone and to increase the diversity of housing types outside of the flood zone. Limiting residential development in the flood zones will reduce the risk of flooding for homes and businesses and expand the floodplain and creek flow capacity during a flood event. Relocation and expansion of housing outside of the floodplain presents a unique opportunity to meet the market demands of Madison County's current and future residents. The Community has expressed that small families seeking starter homes and seniors looking to downsize often have trouble finding housing in their desired size and price range. Additionally, by demolishing severely flood impacted homes, contaminated materials and debris will be properly removed from the environment. The risk of additional mold growth and contamination will be significantly reduced.

For residents who cannot or do not wish to relocate to higher elevation areas, stronger building code regulation and incentive programs can help to bridge the gap to more flood-resilient housing construction. For example, substantial improvements to a home in the floodplain may trigger the need to elevate the home to two or more feet above the 100-year flood elevation. Likewise, a future flood event that causes substantial damage to a home may trigger similar resiliency upgrades. New residential development in the floodplain, though not recommended from a Community resiliency perspective, should require strict flood mitigation measures, including elevated first floors, limited basement space, and elevated utilities and electrical outlets.



**Table 46: Housing Strategies**

Strategy	Project #	Project Title	Project Description	Estimated Cost	Page #
Enhance public safety and wellbeing within flood impacted neighborhoods.	<b>P41</b>	Flood Impacted Housing Demolition	Flooding caused damages to many private houses within the City of Oneida. The project will assist with demolishing and removing destroyed homes and materials.	\$324,000	164
Ensure a diversity of safe, affordable housing options in areas not prone to flooding.	<b>R13</b>	Countywide Housing Needs Evaluation	This evaluation would determine existing and future housing needs within the County's hamlets and villages. The type, diversity and location of housing would be identified. This evaluation would also work with the communities to identify options for housing relocation to areas outside the floodplain.	\$100,000	166
	<b>R14</b>	City of Oneida Housing Needs Evaluation	This evaluation would determine existing and future housing needs within the City of Oneida. The type, diversity and location of housing would be identified. This evaluation would also work with the City to identify options for housing relocation to areas outside the floodplain. This effort would coordinate with various local and state entities as well as non-profit organizations and higher education institutions.	\$50,000	169
	<b>R15</b>	City of Oneida Affordable Downtown Rental Housing	Development of City-owned property for affordable housing rental units located in the same geographical area as the "Flats," but outside of the floodplain. This would allow for an affordable housing option residents in need of relocation while keeping them in the same neighborhood, schools, churches, etc.	\$500,000	172

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*





**Table 46: Housing Strategies Cont'd**

<p>Provide incentives for elevation or retrofit of homes.</p>	<p><b>R16</b></p>	<p>Residential Floodproofing Assistance Program</p>	<p>This assistance program would apply to those homes and neighborhoods that are not able to be relocated. To ensure the safety and welfare of those continuing to live in areas prone to flooding, educational, technical and financial assistance would be provided to owners of floodproof homes. The program would establish funds that would be distributed based on pre-determined criteria for elevation and floodproofing. The program would also set eligibility criteria. Partnerships with local, state and federal agencies as well as with institutions such as Colgate University would be encouraged. This program is intended to take effect when all other options for housing relocation and flood retention alternatives have been exhausted.</p>	<p>\$500,000</p>	<p>176</p>
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*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### *Infrastructure Strategies*

Strategies in the Infrastructure recovery support function include:

- Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage by repairing, improving and protecting
- Identify location of key infrastructure and upgrade to accommodate current and future conditions

During the summer 2013 flooding, critical infrastructure systems, such as road networks, storm sewers, drinking water treatment facilities, and electrical substations experienced significant flooding and damage. Many of these systems have yet to be made more resilient and remain threatened by future flooding. The Community identified the need to repair and protect the infrastructure that services its existing residents and businesses and is also needed for economic growth.

The Community also identified the need for a comprehensive infrastructure inventory, including mapping. A digital inventory and mapping system would assist local communities in future planning efforts and also during emergency events to know where infrastructure is located. These strategies support the framework for a valuable asset management tool to improve future planning and resiliency efforts in Madison County.

Additionally, the Community recognized the opportunity to increase resiliency through stormwater management, such as green infrastructure projects that detain, retain, and treat stormwater. These strategies support implementation of several vital protection measures through both traditional and green infrastructure measures, making the entire County more resilient.



**Table 47: Infrastructure Strategies**

Strategy	Project #	Project Name	Project Description	Estimated Costs	Page #
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.	<b>P6</b>	Poolville Road Culvert Repairs	The flooding resulted in damages to the culvert at Poolville Road (County Route 89), between Smith Road and Hamilton Road in the Town of Hamilton. The project will replace the existing 4' concrete pipe with a 16'-2" by 5'-1" aluminum box culvert, 49.5' in length.	\$84,000	179
	<b>P7</b>	Fearon Road Culvert Repairs	The flooding resulted in damages to the culvert at Fearon Road (County Route 47), between Pratts Road and Rocks Road in the Town of Eaton. The project will replace the existing 4' concrete pipe with a 14'-8" by 4'-1" aluminum box culvert, 49.5' in length.	\$66,000	179
	<b>P8</b>	Dugway Road Culvert Repairs	The flooding resulted in damages to the culvert on Dugway Road (County Route 60) in the Town of Nelson. The project will replace the existing pipe arch with a 14'-8" by 4'-1" aluminum box culvert, 81' in length.	\$100,800	179
	<b>P9</b>	Hart Road Culvert Repairs	The flooding resulted in damages to the culvert on Hart Road (County Route 106), just west of South Road in the Town of Eaton. The damaged existing 2' corrugated metal pipe will be replaced with a 48" HDPE pipe with steel end sections, 70 feet in length.	\$6,240	179
	<b>P10</b>	Reservoir Road Culvert Repairs	The flooding resulted in damages to the culvert at Reservoir Road (County Route 57) in the Town of Cazenovia. The damaged existing 2' corrugated metal pipe will be replaced with a 48" steel reinforced polyethylene (SRPE) pipe with steel end section, 48 feet in length.	\$6,000	179

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



**Table 49: Infrastructure Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.	P11	Skaneateles Turnpike Culvert Repair	The flooding resulted in damages to the culvert on Skaneateles Turnpike near York Road (County Route 80) in the Town of Brookfield. The damaged existing 3' corrugated metal pipe will be replaced with a 12'-3" by 4'-5" aluminum box culvert, 49.5' in length.	\$51,600	179
	P14	Carey Road Culvert Repair	Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek in the Town of DeRuyter resulted in debris blocking culverts at Carey Road and damages to homes and the road. This project will replace the two, side by side 60" culverts with a bottomless arch culvert of greater capacity to handle peak flow making it less susceptible to debris blockage.	\$144,000	179
	P15	Tallett Road Culvert Repair	Flooding of the Middle Branch Tioughnioga Creek and an unnamed tributary resulted in damages to Tallett Road and a home in the Town of DeRuyter. The project will replace two, side by side (24" and 30") culverts with a 71" by 47" galvanized squash pipe culvert, stabilize the channel and install grade stabilization structures.	\$16,640	179
	P17	Williams Corners Road Culvert Repairs	Flooding of the Electric Light Stream resulted in damages to Williams Corners Road in the Town of Eaton including three culverts being washed out, taking the road with it. The road was closed for five weeks and made access to properties difficult. The project will include replacement with single arch culvert to handle flows.	\$240,000	179
	P19	Roberts Road Culvert Repair	The flooding resulted in damages to the culvert at Roberts Road in the Town of Eaton. The project will repair and upgrade the first culvert below Williams Corner Road to handle calculated flow levels.	\$240,000	179

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**Table 49: Infrastructure Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.	P20	Jones Road Repair	Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in damages to Jones Road in the Town of Georgetown impeding access for residents. The project will include a culvert repair and improvement along the road. The Town Highway Department will perform the construction, keeping the costs low.	\$12,000	179
	P22	Bonney Road Culvert Repairs	Flooding of the Stone Mill Brook resulted in damages to the culvert on Bonney Road in the Town of Georgetown. The project will include the repair of this culvert.	\$18,000	179
	P23	Williams Road Culvert Repair	The flooding resulted in damages to the culvert at Williams Road and S. Hamilton Road in the Town of Hamilton. The project will replace the existing 10' by 30' culvert with a 14' box culvert and guide rail.	\$360,000	179
	P24	Harris Road Culvert Repair	Flooding of an unnamed tributary to Beaver Creek resulted in damages to the culvert at Harris Road and Moscow Road in the Town of Hamilton. The project will replace the existing culvert with a 6' by 30' culvert.	\$90,000	179
	P25	Borden Road Culvert Repair	Flooding of an unnamed tributary to the Sangerfield River resulted in damages to the culvert at Borden Road in the Town of Hamilton. The project will replace the existing, undersized 30'' culvert with a new 4' culvert, 25' in length.	\$12,000	179
	P26	Carncross Road Bridge Repair	Flooding of the South Lebanon Brook resulted in damages to the bridge at Carncross Road/South Lebanon Road and adjacent residences in the Town of Lebanon. The project will replace the headwall pipe and poured square boxed culvert pipe with wings of 16 feet.	\$111,953	179

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**Table 49: Infrastructure Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.	P28	Falin Road Culvert Repairs	The flooding resulted in the blockage of culverts and the flooding of five homes at Falin Road in the Town of Madison. The project will include replacement of two 2-foot culverts with a single 5' by 7' squash culvert to handle greater capacity and prevent debris build up.	\$36,000	179
	P29	Abbert Road Culvert Repairs	Flooding of an unnamed tributary to the Sangerfield River resulted in the wash out of a single 4' by 5' culvert at Abbert Road causing severe damage to the road and adjacent residences and agricultural lands in the Town of Madison. The project will include replacement of the damaged culvert with a single 5' by 7' squash culvert to handle calculated flows.	\$36,000	179
	P30	Jones Road Culvert Repairs	Runoff from forest land resulted in flooding damages to the culvert at Jones Road at the junction of Old State Road in the Town of Nelson. The project will replace the existing 15" by 50' culvert with a 30" by 50' culvert and replace the existing 24" by 50' culvert with a 36" by 50' culvert.	\$19,200	179
	P31	Hughes Road Culvert Repair	Runoff from higher elevations resulted in flooding damages to the culvert at Hughes Road in the Town of Nelson. The project will replace the existing 15" by 50' culvert with a 24" by 50' culvert.	\$6,000	179
	P32	Thomas Road Culvert Repair	Runoff from higher elevations resulted in flooding damages to the culvert at Thomas Road in the Town of Nelson. The project will replace the existing 18" by 40' culvert with a 30" by 50' culvert.	\$9,600	179
	P35	Greene Road Reconstruction	The project will replace the existing 40' by 30" culvert with an 80' by 30" culvert in the Town of Nelson.	\$12,000	179

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



**Table 49: Infrastructure Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through.	<b>P36</b>	North Lake Road at Blue Canoe Reconstruction	Flooding caused damages to North Lake Road as well as multiple homes and businesses in the Town of Nelson. The project will replace the damaged culvert with a 5' by 7' squash culvert to handle calculated flows.	\$60,000	179
	<b>P44</b>	Bishop Road Culvert Repair	The project will replace the existing undersized 30" round culvert with a 42" round culvert in the Town of Stockbridge.	\$3,662	179
	<b>P45</b>	Quarry Road Culvert Repair	The project will replace the existing undersized 24" by 36" rectangular culvert with a 48" round culvert in the Town of Stockbridge.	\$4,051	179
	<b>P46</b>	Haslauer and Cook Road Culvert Repairs	The flooding resulted in damages to three culverts on Haslauer and Cook Roads in the Town of Stockbridge. The project will replace the existing undersized culverts with larger culverts to handle the calculated flows.	\$300,000	179
	<b>P2</b>	Maple Road Reconstruction	Maple Road was damaged from flooding that occurred during the Summer 2013 storms in the Town of Cazenovia. This project will involve the reconstruction of approximately 1,000 feet of Maple Road, from State Route 13 west to Lincklaen Road.	\$60,000	186
	<b>P3</b>	Ridge Road Flood Reconstruction	The flooding resulted in damages to Ridge Road and the surrounding drainage area in the Town of Cazenovia. The project will include flood and stormwater mitigation via the installation of storm sewer piping and culverts, and ditch stabilization near the entrance of Cazenovia Lake at Ridge Road and Ten Eyck Avenue.	\$108,937	186
	<b>P13</b>	South Hill Road Stabilization and Restoration	Flooding eroded roadside ditches resulting in damages to South Hill Road in the Town of DeRuyter. The project will include the installation of four catch basins with grates, replacement of 400 feet of culvert pipe and repaving of 0.15 miles along South Hill Road creating an underground closed drainage system.	\$37,272	186

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**Table 49: Infrastructure Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.	<b>P13</b>	South Hill Road Stabilization and Restoration	Flooding eroded roadside ditches resulting in damages to South Hill Road in the Town of DeRuyter. The project will include the installation of four catch basins with grates, replacement of 400 feet of culvert pipe and repaving of 0.15 miles along South Hill Road creating an underground closed drainage system.	\$37,272	186
	<b>P27</b>	Thompson Hill Road Repairs	The flooding damaged Thompson Hill Road in the Town of Lebanon. This project will include approximately 1,500 linear feet of road ditch reshaping and shoulder reestablishment to the bottom of ditch with medium rip rap to stabilize the slope. Medium rip rap will also be used to ensure better road stability.	\$78,960	186
	<b>P33</b>	Sunrise Boulevard Reconstruction	Runoff from higher elevations resulted in flooding damages to Sunrise Boulevard in the Town of Nelson. The project will enlarge and line 200' of ditch and replace a 24" by 30' culvert with a 30" by 30' culvert.	\$12,000	186
	<b>P34</b>	North Lake Road Reconstruction	Flooding resulted in damages to North Lake Road in the Town of Nelson. The project will install 650' of 18" culvert with 6 drop basins, pave or rip rap bank shoulders, two concrete headwalls, debris catchers and replace the existing 15" by 100' culvert with a 24" by 100' culvert	\$12,000	186
	<b>P42</b>	Sealed Sanitary Manholes	Flooding resulted in an influx of flow and overwhelming to the City of Oneida's Wastewater Treatment Plan processes. Contaminated floodwater entering the plant created issues with biological processes for treating wastewater. The project will install watertight frames and grates for the identified 67 sanitary sewer manholes located within the 100-year floodplain.	\$41,400	189

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**Table 49: Infrastructure Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Identify location of key infrastructure and upgrade to accommodate current and future conditions.	R17	Countywide Infrastructure Inventory and Mapping	This project will inventory and document the type, location and condition of key infrastructure throughout the County. This digital inventory and mapping exercise would assist local communities in future planning efforts and also during emergency events to know where infrastructure is located. It is envisioned this project would have a GIS mapping component allowing for easy database and mapping maintenance. This project would serve as a valuable asset management tool to improve future planning and resiliency efforts in Madison County.	\$300,000	191
	R18	Countywide Stormwater Management Plan	This project would prepare a countywide stormwater management plan for extreme and high risk areas that are not included in a small municipal stormwater sewer system (MS4). This plan may identify green infrastructure alternatives that assist in managing stormwater. Education and outreach would be included in this plan. This project will include a pilot project in the Village of Cazenovia which could be applied to hamlets and villages throughout the County.	\$250,000	193

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### *Natural and Cultural Resources Strategies*

Strategies in the Natural and Cultural Resources recovery support function include:

- Stabilize stream banks that are severely eroded or at high risk of collapse
- Restore and expand stream capacity by removing debris and sediment from floodwaters
- Mitigate stormwater runoff that leads to erosion and flash flooding of creeks on a regional basis and reconnect the floodplain
- Support the economic viability of agriculture

One of the most critical opportunities to increase resilience and reduce flood risk is through creek restoration and management. Throughout the NYRCR process, both community members and the Committee stressed the need for regular maintenance of the high risk streams to reduce flood risk as well as a coordinated stormwater management strategy, including training, for the County. Stream debris removal and the restoration of natural flow paths were also seen as an important strategy for increasing creek capacity during flood events.

These strategies also recognize the need to utilize agriculture as a mean to promote economic vitality, tourism, quality of life, and public health. Economic resilience would be improved for residents by strengthening and growing an already stable industry as well as attracting visitors and tourists. This is also part of a broader effort to stimulate an agritourism economy to create business opportunities related to agriculture. Economically viable, prosperous communities are more resilient to the impacts of storms as they can quickly deploy capital and other resources.

The Madison Community recognized their many waterways as valuable natural resources which could address the need to reduce the cost of electrical power generation. These strategies support the evaluation of alternative energy sources, such as hydropower, since high energy costs can negatively affect residents, business owners and development in the region.



**Table 48: Natural and Cultural Resources Strategies**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Stabilize stream banks that are severely eroded or at high risk of collapse.	P1	Town of Brookfield Streambank Stabilization and Restoration	The storms resulted in the floodwaters overtopping streambanks in the Town of Brookfield, severely eroding and washing out areas. This project will reestablish approximately 1,000 linear feet of eroded and washed out streambank and install channel lining rock and check dams. The Town Highway Department will perform the construction.	\$120,000	196
	P16	Carey Road Streambank Stabilization and Restoration	Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in damages to Carey Road and adjacent homes in the Town of DeRuyter. The road was closed for five days. The project will include 200 linear feet of bank stabilization utilizing pinned rip-rap and replacement guide rails along Carey Road.	\$109,680	196
	P18	Route 20 Flooding Remediation	Flooding of an unnamed tributary to the Chenango River in the Town of Eaton resulted in damages to eight homes and businesses as well as Route 20. The project will clean out and reshape approximately 300 linear feet of stream channel coming into Village of Morrisville to handle the flow of a 100-year storm.	\$42,000	196
	P21	Bronder Hollow Road Bank Stabilization and Restoration	Flooding of the adjacent Muller Brook resulted in damages to Bronder Hollow Road in the Town of Georgetown. The project will restore and improve eroded and washed out areas through stabilization of Muller Brook for approximately 100 linear feet.	\$18,000	196
	P43	Maxwell Field Streambank Stabilization and Restoration	Flooding of the Oneida Creek resulted in erosion, wash outs and damages to the Oneida Creek streambank along Maxwell field in the City of Oneida. This project will repair, reestablish and stabilize approximately 485 linear feet of streambank through placement of riprap and geotextile.	\$48,000	196

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



**Table 50: Natural and Cultural Resources Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Restore and expand stream capacity by removing debris and sediment from floodwaters.	<b>P4</b>	Countywide Stream Debris Removal	The damage from the summer of 2013 storms resulted in the accumulation of debris and sediment in waterways throughout Madison County causing obstructed stream flow and jams. This project will identify those locations as well as remove the debris, restoring a clear flow path.	\$60,000	201
	<b>P47</b>	Chittenango Creek Logjam Clearings	Flooding carried and distributed woody debris causing jams along the Chittenango Creek corridor in the Town of Sullivan. The project will remove debris and log jams from approximately 10 miles of the creek extending from south of Chittenango to Oneida Lake.	\$36,000	201
Mitigate stormwater runoff that leads to erosion and flash flooding of creeks on a regional basis and reconnect the floodplain.	<b>R19</b>	Countywide Stream Maintenance Program	Many streams and tributaries in the County are in need of annual maintenance. Past experience has demonstrated that a lack of stream maintenance has led to log jams, silt and sediment deposition, erosion, and streambank and bed degradation thereby creating unnecessary flooding. This project would establish an annual maintenance program and include a dedicated staff person to implement the program.	\$225,000	204
	<b>R20</b>	Countywide Flood Mitigation Initiative	This project would establish a regional initiative to build resilience through specific projects. This initiative will include two components to start: (1) watershed modeling to create a baseline hydrologic model (HEC-RAS and geomorphic analysis) and (2) an identification of natural and manmade infrastructure practices for implementation in high and extreme risk areas. A case study involving a flood retention project in Leonardsville would be examined as an example project to incorporate natural infrastructure measures.	\$1,000,000	207

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# NY Rising Madison County Resiliency Plan

**Table 50: Natural and Cultural Resources Strategies Cont'd**

Strategy	Project #	Project Name	Project Description	Estimated Cost	Page #
Mitigate stormwater runoff that leads to erosion and flash flooding of creeks on a regional basis and reconnect the floodplain.	<b>R21</b>	Countywide Hydropower Feasibility Study	This project will evaluate the feasibility of utilizing licensed dams within the County for small scale hydropower. This project would expand the County's ability to generate power through alternative sources.	\$15,000	210
Support the economic viability of agriculture.	<b>R22</b>	Agriculture and Farmland Protection Plan Update	The Madison County Agricultural and Farmland Protection Plan, completed in July of 2005, does not address floodwater damage to agriculture and farmlands in Madison County. Creating a updated plan to protect, enhance and support agriculture in the County and consider flooding impacts on crop loss and the agricultural economy is crucial. The plan would also provide guidance on how to recover from storm events and losses.	\$50,000	213

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



## Section IV: Project Profiles

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*Cazenovia Lake, Village of Cazenovia*



## *Introduction*

The New York Rising Community Reconstruction (NYRCR) program is geared toward identifying two types of projects – those for recovery and those that would increase resilience. Recovery projects were defined early in the planning process by the Community. These projects are needed to repair what was damaged during the June 2013 storms. Recovery projects will enable communities to build back public infrastructure, facilities, and utilities damaged directly by the storms. Recovery projects are also those that will repair creek system components that were damaged by flooding and that continue to pose a threat to the residents of Madison County. Recovery projects defined early in the planning process have been updated in this document with new information and more details. The Recovery projects are those that the Community identified for the \$3 million that the New York Office of Storm Recovery has allotted for Madison County.

After Recovery Projects were identified, a set of strategies were developed that could increase the resilience of vulnerable assets. Resiliency Projects were developed from those strategies by many of the County's municipalities as well as by the County itself. Those projects will strengthen the ability of each of these municipalities to respond to storms and other emergencies in a manner that better protects human health, welfare, and property.

This section provides a Project Profile for proposed recovery and resiliency projects. While developing projects and actions for inclusion in the NYRCR Plan, cost estimates, cost-benefit analyses, the effectiveness of each project in reducing risk to populations and critical assets, feasibility, and community support were taken into account. Recovery projects have a "P" before the identification number and for consistency, have the same identification number as in the Recovery Projects report. Some of these recovery projects are very similar (e.g. culvert replacements) and have therefore been grouped in the following profiles. Detailed profiles for the individual projects can be found in the Additional Materials section of this NYRCR Plan. Resiliency projects that are being introduced for the first time in this NYRCR Plan have an "R" before the identification number. Projects are not prioritized in any way. All project are organized by recovery support function, with recover projects appearing first, followed by resiliency projects

## *Project Costs*

For the recovery project profiles (those with a "P" before the identification number) the project leads provided construction costs for all projects in the form of preliminary engineering cost estimates. Projects are anticipated to have an engineering and design cost that is 20% of the construction cost, as shown. The exception to this is P5 – Fire Department PFDs and Dry Suits and P12 – Emergency Power Generation for Municipal Buildings and Shelter both of which will not require any engineering or design.

## *Timeframe for Implementation*

All of the recovery projects presented in this plan are ready for implementation. However, the timeframe for implementation is dependent on a number of factors including:

- How quickly the project is funded and initiated.



## NY Rising Madison County Resiliency Plan

- Type of funding. If this is a reimbursement program many communities will need time to bond the projects.
- Construction season, which typically extends from mid-April through the end of October, weather permitting.
- The County currently has two emergency work permits set to expire August of 2014 including a DEC Emergency Work Permit and an Army Corps of Engineers Emergency Declaration. If projects covered by these permits cannot be implemented before that expiration, new permits would likely need to be secured or extensions would need to be requested.

### *Project Status and Permitting*

All of the recovery projects are ready for design and implementation. Permitting requirements to supplement the existing emergency work permits for recovery projects will be evaluated during design. Work conducted or proposed pursuant to emergency work permits should receive a NYS Department of Environmental Conservation (DEC) authorization prior to the commencement of work. Construction projects resulting in soil disturbance of one or more acres require coverage under DEC's SPDES Permit for Stormwater Discharges from Construction Activity.

Inclusion of resiliency projects within this report and eventual funding of a project does not preclude the need for municipalities to ensure that they have all of the necessary permits for implementation, which could include permits from the NYS DEC, NYS Department of Transportation, or U.S. Army Corps of Engineers.

Additionally, local communities are required by the National Flood Insurance Program to prepare data for a revision of the Flood Insurance Rate Map within six months of the completion of any project that changes the base flood elevation at any location. This process is accomplished through a Letter of Map Revision. If required, a hydraulic analysis would need to be undertaken to determine any changes to base flood elevations and flood zone boundaries so that property owners have accurate information about flood risk and so that properties that have their flood risk reduced will benefit from lower flood insurance rates and increased property values.



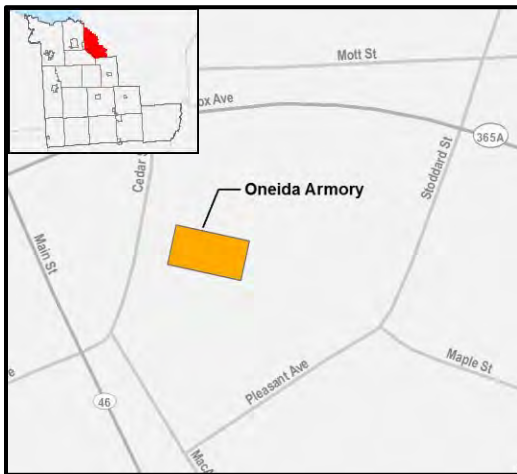


## P40 – ONEIDA ARMORY FLOOD BARRIER INSTALLATION

Community Planning and Capacity Building

### Project Description

Flooding of the Oneida Creek via bank and bridge overtopping resulted in three feet of water, which entered via the garage and entry doors, on the ground floor of the Parks and Recreation Armory in the City of Oneida. During the floods, the armory’s upper level floors were being used a shelter until water began entering the ground level. Flood victims were required to relocate to a second shelter location. This project will install a FEMA-approved stackable or passive flood barrier (ex. Fastlogs, Floodbreak or approved equal) for the 16-foot wide garage door and entry access. This will dry floodproof the structure in accordance with FEMA requirements and prevent future flooding of the ground floor. The proposed estimate assumes a six-foot two-inch flood barrier with two feet of freeboard. Access to the front of the building has a higher elevation.



### Project Location

This project is located on Cedar Street in the City of Oneida.

### Estimated Project Costs

The estimated cost for the design and installation of the flood barriers is approximately \$480,000 and the funding request is for the entire amount of the project as follows:

Engineering/Design:	\$8,000
Construction:	\$40,000
<b>Total:</b>	<b>\$48,000</b>

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1)</sup>)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### **Risk Reduction Benefits**

The installation of a FEMA-approved flood barrier would reduce the risk of flooding and damages to the armory and allow it to continuously operate, with power, as an emergency shelter during severe storm events.

#### **Economic Benefits**

The project would protect an existing facility through floodproofing, enabling it to properly function as an emergency response facility. The economic impact of providing emergency shelters would be

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



realized by minimizing potential costs to the Community when emergency responders are allocating limited resources for residents who are evacuated or find themselves without shelter. Additionally, by securing the basic welfare needs of residents during and after storm events, people will be able to focus their energy and attention on recovery and a return to normalcy.

### **Health and Social Benefits**

Floodproofing the Parks and Recreation Armory would benefit the entire community by ensuring an operational emergency shelter and by providing safe and protected facilities both during and after storm events. The emergency shelter would provide basic health and social services including food, water, electricity, shelter and communication services during and after storm events. This would allow residents to focus their energy and attention on recovery and resiliency efforts.

### **Cost-Benefit Analysis**

Community resilience is enhanced by improvements to emergency facilities when facing future storms and flooding, which ensures protection of assets and the safety of residents. Floodproofing the armory with a barrier would allow it to serve as an emergency shelter, resulting in permanent improvements to the facility. Making use of an existing facility will result in a savings in local expenditures by the Community that would otherwise be needed for the construction of a new shelter.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.



### **Risk Reduction Analysis**

Floodproofing the armory with a barrier would reduce risk to an emergency service facility and its infrastructure by decreasing its vulnerability. Additionally, the project would provide uninterrupted emergency shelter, services and power to the community, including socially vulnerable populations who will be able to benefit from a nearby disaster relief shelter.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

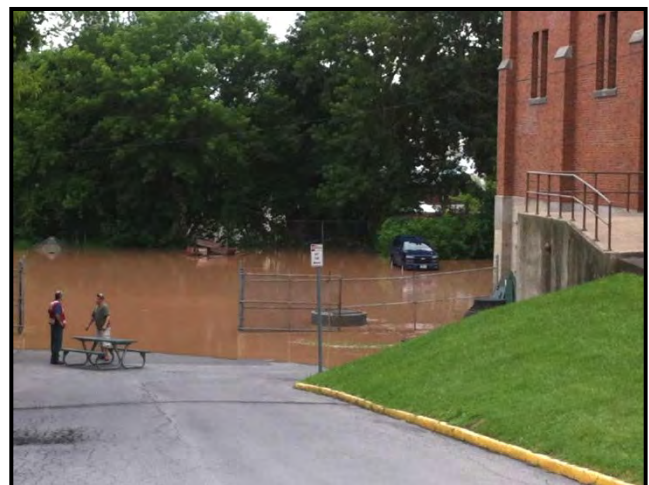
Provide floodproof emergency shelter and facilities for the Community.

### **Project Status**

The project is ready for design and implementation.

### **Anticipated Project Lead**

The anticipated project lead is the City of Oneida.



*(Source: City of Oneida)*

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



## P5 – FIRE DEPARTMENT PFDs AND DRY SUITS

*Community Planning and Capacity Building*

### Project Description

This project will provide vital rescue services to the public. Local fire departments within the County are in need of 64 dry suits and 150 Personal Flotation Devices (PFDs) for first responders for use in flood events as well as a cache of sand bags for flood abeyance. Since the County does not have its own fire department, the material will be purchased by the County and distributed to various local fire departments on an as-needed basis.



*(Source: Madison County Fire Departments)*

### Project Location

This project is a countywide project in Madison County.

### Estimated Project Costs

The estimated cost to obtain the PFDs, dry suits and sand bags is approximately **\$68,950** and the funding request is for the entire amount of the project.

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### **Risk Reduction Benefits**

This project would mitigate public safety risk by supplying emergency operations and responders throughout the County with supplies vitally necessary to respond to flood risks and provide emergency services to the Community during and after storm events.

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Economic Benefits**

Obtaining dry suits, PFDs and sand bags is a relatively low cost measure that would increase resiliency of facilities and operations critical to the County's emergency and recovery efforts. Additionally, these projects would strengthen emergency response abilities and greatly increase preparedness for future events.

### **Health and Social Benefits**

The entire Community, including vulnerable populations, would benefit from this project by providing vital rescue and emergency services during extreme weather events. The equipment and supplies would allow responders to safely reach, rescue and assist residents that would otherwise be without proper provisions.

### **Cost-Benefit Analysis**

Community resilience would be enhanced by improvements to emergency operations when facing future storms and flooding, which ensures protection of assets and the safety of residents. The acquiring of dry suits, PFDs and sand bags is a low cost measure; the benefits considerably outweigh the costs of not being able to perform emergency rescues and services which are vital during an emergency. Maintaining emergency operations throughout the County would benefit flood victims in need of assistance.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Having proper emergency and rescue supplies would reduce the risk and vulnerability of the Community residents by ensuring responders are able to carry out emergency operations as necessary.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Secure equipment necessary for emergency responders to function during a storm event.

### **Project Status**

The project is ready for design and implementation.

### **Anticipated Project Lead**

The anticipated project lead is Madison County.



*(Source: Madison County)*

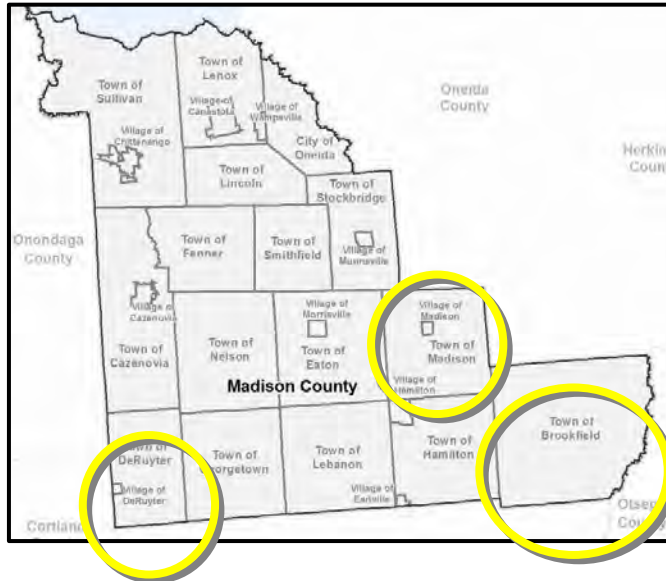


## P12 – EMERGENCY POWER GENERATION FOR MUNICIPAL BUILDINGS AND SHELTER

*Community Planning and Capacity Building*

### Project Description

The flooding from the summer 2013 storms resulted in widespread power outages which included emergency shelters and municipal buildings throughout the County. This project will identify and prepare buildings in various locations countywide to receive power via the purchase of mobile generators which can be shared or relocated as needed during power outages. On-site electrical will likely be necessary for building preparation.



### Project Location

This project is a countywide project in Madison County, with a focus in the Towns of Brookfield, DeRuyter and Madison.

### Estimated Project Costs

The estimated cost to identify buildings and purchase mobile generators is approximately **\$650,000** and the funding request is for the entire amount of the project.

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### **Risk Reduction Benefits**

Having emergency generators available reduces the risk of emergency shelters, facilities and operations being without power, which is critical.

#### **Economic Benefits**

Obtaining emergency power sources, such as generators, is a relatively low cost measure that would increase resiliency of facilities critical to the County’s emergency and recovery efforts. Additionally, these projects would strengthen emergency response abilities and greatly increase preparedness for future events.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Health and Social Benefits**

The purchase of generators will ensure continuous operation of critical facilities and emergency shelters during severe weather events for responders, residents and trapped motorists displaced by the storm. Generators would also maintain power necessary for communications during emergencies.

### **Cost-Benefit Analysis**

Community resilience would be enhanced by improvements to emergency facilities when facing future storms and flooding, which ensures protection of assets and the safety of residents. The acquisition of power generators is a low cost measure. The benefits considerably outweigh the costs of not having power which is vital during an emergency. Emergency power generators would also improve the resiliency of structures electrical distribution system, enabling it to properly function as an emergency operations facility and shelter. Maintaining electrical power in emergency shelters throughout the County would benefit flood victims in need of refuge until the floodwaters recede.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Having continuous power through the use of generators would reduce the risk to and vulnerability of critical facilities and operations as well as emergency shelters by ensuring they are able to function properly.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Floodproof existing electrical and natural gas infrastructure located in the floodplain and create a backup system of power.

### **Project Status**

The project is ready for design and implementation.

### **Anticipated Project Lead**

The anticipated project lead is Madison County in partnership with the Towns of Brookfield, DeRuyter and Madison.



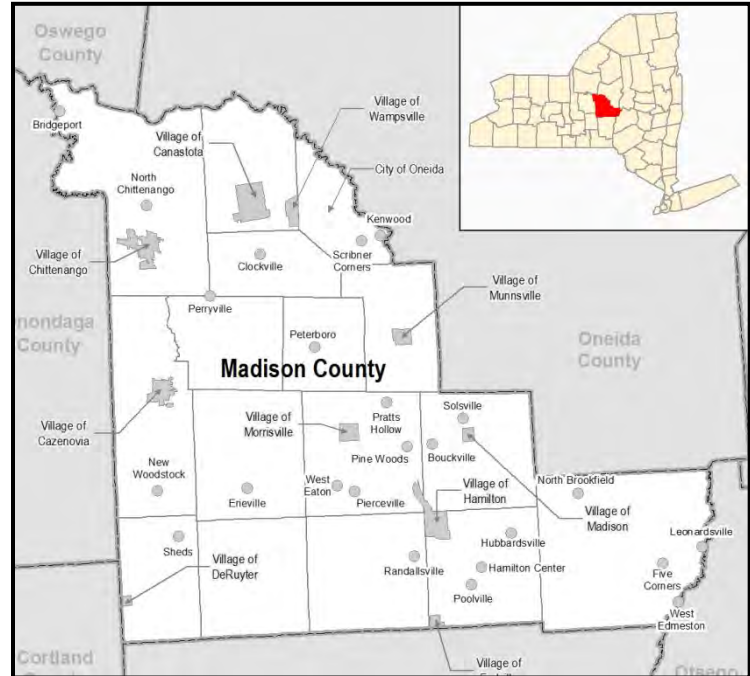
## R1 – COUNTYWIDE EMERGENCY COMMUNICATIONS PLAN

*Community Planning and Capacity Building*

### Project Description

Enhanced communication has been identified as a primary need during flooding and storm events at both the County and local level. During severe storm events many communities and residents are left without power or a means of communication. Without advance warning to evacuate, residents are unsure of when and where to go. Once flood waters recede, communities and residents are often still without power or cell phone coverage rendering them unable to locate emergency supplies and essential storm recovery information.

This emergency communications plan would identify gaps and needs as well as innovative methods to communicate with the public, service agencies, volunteers and emergency responders. The plan would formalize protocols for emergency events and determine the process for establishing a consistent 'message' that can be distributed via variable message boards in strategic locations, cell phone applications, websites, and word-of-mouth by emergency personnel. Appropriate locations for mobile command centers and communications would also be identified.



### Project Location

This project is a countywide project in Madison County.

### Estimated Project Costs

The estimated cost to prepare a Countywide of Emergency Communications Plan is approximately **\$150,000** and the funding request is for the entire amount of the project.

### Potential Funding Sources

- New York Rising Community Reconstruction Program funding
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - Empire State Development (ESD) Grant Funds
  - Office of Storm Recovery – Resilience Fund Low-Cost Financing
  - New York Department of State – Local Waterfront Revitalization Program
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

## Project Benefits

### **Risk Reduction Benefits**

Increased communication in all emergency situations, including severe storms and flooding, would aid in the dissemination of clear real-time warnings and alerts to residents and employees, including emergency responders. With the identification and implementation of multiple innovative communication measures, the risk to assets and residents' health and property is reduced.

### **Economic Benefits**

Formalizing a Countywide Emergency Communications Plan would allow the County to apply financial resources more efficiently. With a streamlined communication plan in place, the likelihood of being able to protect more County assets and amenities would increase.

### **Health and Social Benefits**

Implementation of a communications plan would benefit all who live and work in Madison County by limiting asset loss as well as loss of life. With greater potential to protect assets and population, comes greater ease to return to normalcy after an emergency situation. Enhanced communication after an event could also help direct residents to centers where information is available about public health hazards such as mold, mosquitoes and other floodwater-related health concerns.

## Cost-Benefit Analysis

Enhanced communication would foster public safety and increase the community's preparedness for future storms and flooding. The ability to alert residents, including vulnerable populations, of impending storms, rising flood waters, evacuation orders and availability of emergency supplies would be improved. This would provide significant health and safety benefits. With improved communication and warning, residents and business owners would reduce risk to assets and consequential economic losses by protecting valuable items or property.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

A communications plan has the potential to reduce risks associated with loss of life and public safety by providing enhanced communication and advanced warning during severe storms and flooding. Supplying current and accurate information related to storm events, evacuation instructions and other official notifications in a timely manner would reduce risks to public health and safety.

## Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

## Strategies

Enhance communications and expand educational efforts so that people, businesses, and social service providers know what to expect and how to access assistance prior to, during, and immediately following a storm.

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*





### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are the Madison County Planning Department and the Madison County Emergency Preparedness Department.



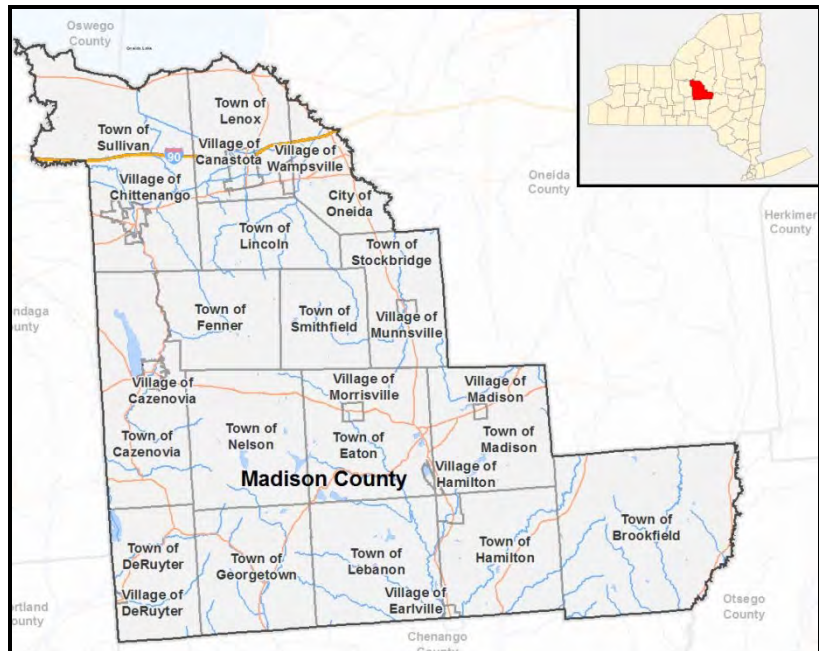
## R2 – EMERGENCY STREAM INTERVENTION TRAINING

*Community Planning and Capacity Building*

### Project Description

Coordinate with watershed districts and other adjacent counties to provide training to local and state officials about emergency stream intervention and methods to minimize unintentional environmental degradation and long-term stream instability. This would include continued coordination with the Upper Susquehanna Watershed Coalition, the Oneida Lake Watershed and the Mohawk Watershed Coalition. Providing environmentally conscious training for post-flood and emergency responders was identified as a primary need by the Community as a means of improving storm preparedness and community resiliency.

The training will include education regarding stream clearance protocols for restoring water flow, channel capacity and sediment transport after major storm events. The training is targeted for those involved with the evaluation, planning and earthmoving involved in emergency stream channel work.<sup>ii</sup> Attendees will learn systematic techniques to identify where and when not to work and the importance of maintaining floodplain connections. This will promote long-term stream health and stability. Both training and on-site implementation through a construction demonstration would be provided through three-day workshops.



### Project Location

This project is a countywide project in Madison County.

### Estimated Project Costs

The estimated cost of one 3-day workshop which is open to local officials, countywide, is approximately **\$30,000**. The funding request is for the entire amount of the project.

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.<sup>i</sup>)
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### **Project Benefits**

#### ***Risk Reduction Benefits***

Emergency Stream Intervention Training would create a more knowledgeable and capable emergency response team, reducing the risk of additional and future flooding issues to streams and adjacent land and assets. The project would increase storm preparedness and community resiliency.

#### ***Economic Benefits***

Through increased training among local and state officials on emergency stream intervention, the ability to protect assets and amenities would be enhanced, thereby providing potential cost savings in repairs and losses.

#### ***Environmental Benefits***

Existing efforts in place through the Susquehanna Watershed Coalition, the Oneida Lake Watershed and the Mohawk Watershed Coalition to protect waterways in Madison County will be built upon and enhanced. Proper stream maintenance and emergency intervention would minimize unintentional environmental degradation and increase long-term stream health and stability.

### **Cost-Benefit Analysis**

This project would train responders to complete future projects which would maintain and improve stream functionality during severe storms. Proper stream maintenance would decrease future damage to streams and adjacent land, infrastructure and assets, thereby reducing costs incurred from severe weather events.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Significant risk reduction would result from this project. This intervention would further educate state and local officials on emergency stream management and would therefore allow for the increased protection of assets and amenities throughout the County, while protecting valuable natural resources. The County would improve its storm preparedness and community resiliency.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Collaborate with nearby communities to foster regional cooperation in addressing flooding and related issues.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are Madison County Planning and the Soil and Water Conservation District.

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### R3 – RESILIENCY TOOLS GUIDE

Community Planning and Capacity Building

#### Project Description

This guide would identify various tools that may be helpful for local communities to increase resiliency. Three steps have been identified for this project as follows:

- Step 1 - Conduct a diagnostic of local land use regulations related to stormwater management and floodplain development
- Step 2 - Prepare sample regulations that can be modified and adopted by local communities
- Step 3 - Develop an Educational Campaign for homeowners, land use boards and code enforcement officials, including creating and distributing educational materials

#### Project Location

This project is a countywide project in Madison County.

#### Estimated Project Costs

The estimated cost to complete the 3 steps of the project is approximately **\$75,000** and the funding request is for the entire amount of the project as follows:

Step 1:	\$30,000
Step 2:	\$25,000
Step 3:	\$20,000
<b>Total:</b>	<b>\$75,000</b>

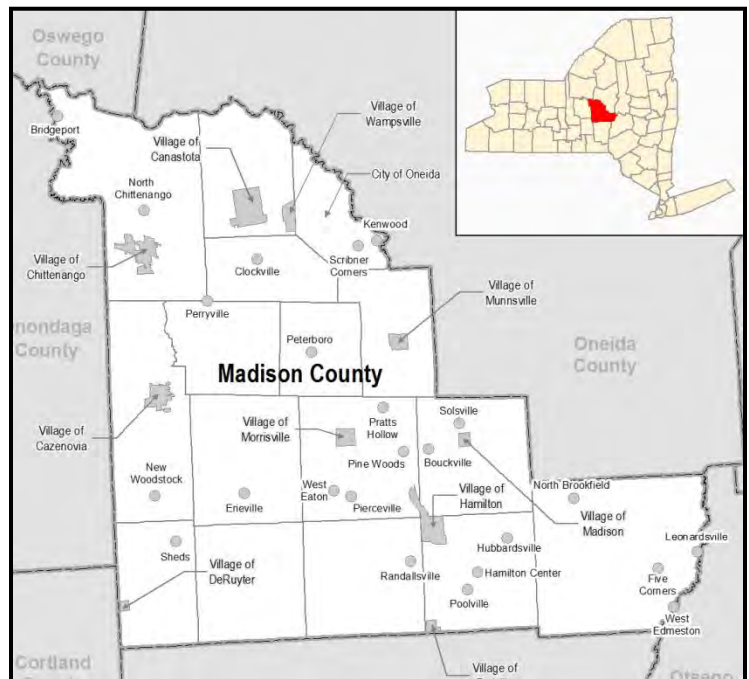
#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

#### Project Benefits

##### Risk Reduction Benefits

Updated local land use regulations related to stormwater management and floodplain development would reduce the risk of developing in hazardous areas. The Educational Campaign for homeowners, land use boards and code enforcement officials would raise countywide awareness surrounding stormwater management and floodplain development.



Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



### **Economic Benefits**

This guide would identify resiliency tools to be utilized by homeowners, land use boards and code enforcement officials to make informed decisions about future asset placement and development, therefore decreasing and potentially eliminating loss of specific valuable assets and amenities.

### **Health and Social Benefits**

Identification and adoption of updated land use regulations related to stormwater management and floodplain development would lead to increased resiliency, public safety and general wellbeing of the County.

### **Environmental Benefits**

Adoption of regulations would encourage sustainable development and negative environmental impacts on adjacent properties and land uses would be minimized.

### **Cost-Benefit Analysis**

The County's assets and the safety of its residents will be protected through the evaluation and improvement of local codes, zoning ordinances and floodplain regulations to promote sustainable, floodproof development. Through the three steps identified, the County and its municipalities will be equipped with an improved set of land use tools to guide the design and location of development in a sustainable manner, providing long term economic benefits. Land use management techniques would promote public welfare and economic vitality through quality and flood-safe development.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

The Resiliency Tools Guide would allow Madison County Communities to view and potentially adopt new land use regulations and codes that focus on creating a sustainable environment in which the risk of flooding and damage to assets and amenities is minimized.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Expand, update, and strengthen local land use regulations and building codes to reduce development in areas at risk of flooding.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project lead is Madison County Planning with input from local municipalities as necessary.



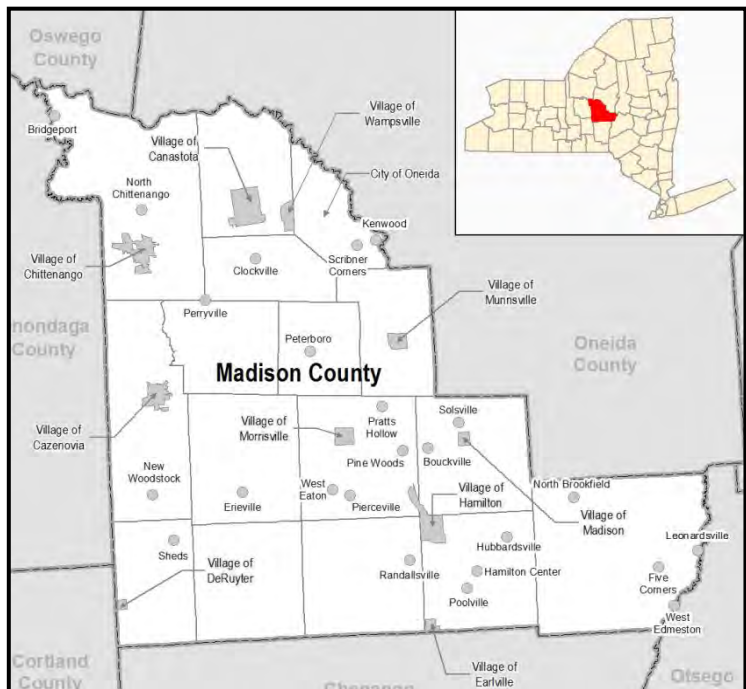
## R4 – MADISON COUNTY STRATEGIC ECONOMIC DEVELOPMENT PLAN IMPLEMENTATION

### Economic Development

#### Project Description

Commercial areas were hit hard by the summer 2013 flooding. Floodwaters inundated basements and first floors of commercial establishments, destroyed offices, machinery, and merchandise, caused the shutdown of major commercial corridors, prevented automobile access to parking lots, and disrupted the rail, roadway, and air transportation networks that support their supply chains. The Community expressed the need to ensure that existing business owners do not face the same flooding issues in the future and to enhance the local economy overall. Not only do residents depend on these businesses for their goods and services and employment, there is a strong desire to support economic activity in an area that has, over time, witnessed business closures and economic declines. Maintaining a strong economic base will support countywide economic resiliency.

This project would involve providing support to Madison County and the Madison County Center for Economic Development to implement the County’s Strategic Plan. Support may include seed money for a feasibility study or may include the development of business continuity plans. This assistance would increase economic development opportunities, enhance employment opportunities countywide and make businesses sustainable long-term. This project would focus on supporting and expanding primary target industries including agritourism and renewable energy as well as facilitating the development of shovel ready business parks for future growth and development opportunities. This project would support initiatives currently underway and long-term plans to enhance economic development in the County, align goals with the greater region, diversify the economic base, provide employment opportunities for the people of the community, and improve regional competitiveness.



#### Project Location

This project is a countywide project in Madison County.

#### Estimated Project Costs

The estimated cost to implement the Economic Development Plan is approximately **\$100,000** and the funding request is for the entire amount of the project. This cost would cover seed money to support current initiatives and may also include materials for the Economic Development Center.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



## Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - Market New York – Regional Tourism Marketing Competition
  - New York Main Street – Traditional NYMS Target Area Building Renovation Projects
  - New York Main Street – Technical Assistance (NYMS-TA)
  - NYS Office of Parks and Recreation & Historic Preservation, through the Environmental Protection Fund (EPF)
  - New York Department of State – Local Waterfront Revitalization Program
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

## Project Benefits

### ***Risk Reduction Benefits***

The project would maintain and grow the tax base by attracting and supporting new and expanding industries. It would also help to retain and strengthen existing businesses.

### ***Economic Benefits***

Economic benefits would include an increase in tourism, light industry, small business, agriculture, and green industries. The Plan would enable the County to create jobs, while improving its capital base.

### ***Health and Social Benefits***

This project would create jobs while increasing tourism opportunities for both residents and tourists.

### ***Environmental Benefits***

An increased focus on green processing and alternative energy would result from this project. A focus on these technologies would potentially result in less air and water pollution.

## Cost-Benefit Analysis

Implementation of the Strategic Economic Development Plan would allow Madison County to retain and grow the existing tax base, commercial centers and tourism as well as pursue new markets and industries.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

Economic development would be further enhanced through increased focus on diversifying the economic base and improving regional competitiveness.

## Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



### Strategies

Diversify the local economy, including tourism, light industry, small business, agriculture, and green industries.

### Project Status

The project is in the conceptual/planning stage.

### Anticipated Project Lead

The anticipated project lead is Madison County and the Madison County Center for Economic Development.



*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*





## R5 – COUNTYWIDE DOWNTOWN REVITALIZATION PLAN

### Economic Development

#### Project Description

Commercial areas were hit hard by the summer 2013 flooding. Floodwaters inundated basements and first floors of commercial establishments, destroyed offices, machinery, and merchandise, caused the shutdown of major commercial corridors, prevented automobile access to parking lots, and disrupted the rail, roadway, and air transportation networks that support their supply chains. Much of the short-term lost revenue and damages have been covered by FEMA and insurance, but the Community expressed the need to ensure that existing business owners do not face the same flooding issues in the future. Not only do residents depend on these businesses for their goods and services and employment, there is a strong desire to support economic activity in an area that has, over time, witnessed business closures and economic declines.

This project would prepare a downtown revitalization plan that could assist the County's hamlets and villages to increase investment, promote infill, enhance economic development opportunities and improve streetscapes.

#### Project Location

This project is countywide, located in Madison County.

#### Estimated Project Costs

The estimated cost to prepare a Countywide Downtown Revitalization Plan is approximately **\$250,000** and the funding request is for the entire amount of the project.



#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - Market New York – Regional Tourism Marketing Competition
  - New York Main Street – Technical Assistance (NYMS-TA)
  - NYS Office of Parks and Recreation & Historic Preservation, through the Environmental Protection Fund (EPF)
  - New York Department of State – Local Waterfront Revitalization Program
  - NYS Energy Research and Development Authority (NYSERDA) – Small Commercial Energy Assessments
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

## Project Benefits

### ***Risk Reduction Benefits***

Plan recommendations may include streetscape enhancements and stormwater infrastructure improvements, which would result in less frequent and severe creek bank overflows and drainage infrastructure backups. This would lead to risk reduction to residents and property.

### ***Economic Benefits***

Attracting new businesses to the area would bring direct and economic benefits of construction, employment, tax revenue, and ancillary support services. Any new development would incorporate green infrastructure.

### ***Health and Social Benefits***

Health and social benefits would include creating a sense of place among the community members while enhancing the downtown area. By adopting this Plan, businesses are able to maintain or resume operations more quickly, employment and income will be more stable, leading to social benefits for the employees.

### ***Environmental Benefits***

Environmental benefits would include reduced stormwater runoff, improved water quality in the creeks, and less damage to the creeks in extreme precipitation events through the use of green infrastructure techniques. Plan recommendations may include energy efficient lighting and enhanced bike and pedestrian amenities which would also benefit the environment through reduced energy usage.



*Downtown Chittenango*

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Cost-Benefit Analysis**

The revitalization plan would provide recommendations to reinvigorate and strengthen downtown areas and improve economic development opportunities thereby making Madison County and its municipalities economically resilient. Recommendations would likely include methods to promote infill and redevelopment, streetscape enhancements, beautification, and identification of necessary infrastructure improvements including green infrastructure facilities. Revitalizing and growing existing downtown areas would not only utilize existing infrastructure and buildings, but create a stable tax base and strong local business and commercial centers. Implementation of these recommendations is expected to enhance tourism and create additional jobs which would help restore and preserve Madison County as a sustainable community, thereby creating significant economic benefits.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Through the enhancement of Madison County's economic development opportunities and improvement of streetscapes more attention would be focused on protecting new as well as existing assets and amenities. Strong downtowns and a stable economy would increase financial resiliency, allowing individual businesses as well as commercial areas and Madison County as a whole to recover more easily and quickly after storm events.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Diversify the local economy, including tourism, light industry, small business, agriculture, and green industries.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are Madison County Planning and the Madison County Center for Economic Development.



## R6 – CITY OF ONEIDA DOWNTOWN REVITALIZATION PLAN

### Economic Development

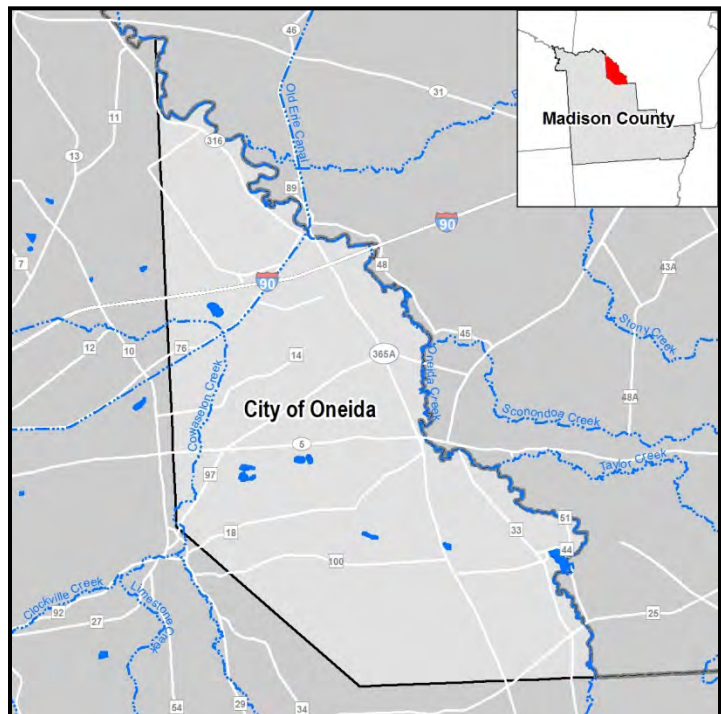
#### Project Description

Downtown Oneida and other commercial areas in the City were hit hard by the summer 2013 flooding. Floodwaters inundated basements and first floors of commercial establishments, destroyed offices, machinery, and merchandise, caused the shutdown of major commercial corridors, prevented automobile access to parking lots, and disrupted the rail, roadway, and air transportation networks that support their supply chains. Much of the short-term lost revenue and damages have been covered by FEMA and insurance, but the Community expressed the need to ensure that existing business owners do not face the same flooding issues in the future. Not only do residents depend on these businesses for their goods and services and employment, there is a strong desire to support economic activity in an area that has, over time, witnessed business closures and economic declines.

The City of Oneida's downtown is similar to many downtowns in Upstate New York with vacant storefronts and the need for revitalization. While many businesses are experiencing success, there is an opportunity to bring new energy to the downtown. This project would prepare and begin to implement a downtown revitalization plan that may include streetscape enhancements, infill development, historic property preservation and enhancement.

#### Project Location

This project would be located in the City of Oneida.



#### Estimated Project Costs

The estimated cost to prepare a Downtown Revitalization Plan for the City of Oneida is approximately **\$100,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1</sup>)
  - Market New York – Regional Tourism Marketing Competition
  - New York Main Street – Technical Assistance (NYMS-TA)
  - NYS Office of Parks and Recreation & Historic Preservation, through the Environmental Protection Fund (EPF)
  - New York Department of State – Local Waterfront Revitalization Program
  - NYS Energy Research and Development Authority (NYSERDA) – Cleaner, Greener Communities Program, Phase II Implementation Grants

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



- NYSERDA – Small Commercial Energy Assessments
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

## Project Benefits

### ***Risk Reduction Benefits***

Once implemented, streetscape enhancements, less frequent and severe creek bank overflows and drainage infrastructure backups lead to a risk reduction to residents and property.

### ***Economic Benefits***

Attracting new businesses to the area will bring direct and indirect economic benefits of construction, employment, tax revenue, and ancillary support services. Any new development would incorporate green infrastructure to the best extent possible, creating more severe storm and flood resilient structures.

### ***Health and Social Benefits***

Health and social benefits would include creating a sense of place among the community members all while enhancing the downtown area. By adopting this Plan, businesses are able to maintain or resume operations more quickly, employment and income will be more stable, leading to social benefits for the employees.

### ***Environmental Benefits***

Environmental benefits would include reduced stormwater runoff, improved water quality in the creeks, and less damage to the creeks in extreme precipitation events through the use of green infrastructure techniques to the greatest extent possible.

## Cost-Benefit Analysis

The revitalization plan would provide recommendations to reinvigorate and strengthen Oneida’s downtown area and improve economic development opportunities thereby making the City economically resilient. Recommendations would likely include methods to promote infill and redevelopment, streetscape enhancements, beautification, and identification of necessary infrastructure improvements including green infrastructure facilities. Revitalizing and growing the existing downtown area would not only utilize existing infrastructure and buildings, but create a stable tax base and strong local business and commercial center. Implementation of these recommendations is expected to enhance tourism and create additional jobs which would help restore and preserve the City of Oneida as a sustainable community, thereby creating significant economic benefits.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

This project would reduce the risk of damage to the County’s assets and amenities, specifically in the City of Oneida. A strong downtown and a stable economy would increase financial resiliency, allowing

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individual businesses as well as commercial areas and the City of Oneida as a whole to recover more easily and quickly after storm events.



*Downtown City of Oneida*

#### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

#### **Strategies**

Diversify the local economy, including tourism, light industry, small business, agriculture, and green industries.

#### **Project Status**

The project is in the conceptual/planning stage.

#### **Anticipated Project Lead**

The anticipated project lead is City of Oneida.

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## R7 – COUNTYWIDE WAYFINDING SIGNAGE PLAN AND IMPLEMENTATION

### Economic Development

#### Project Description

Madison County offers many diverse opportunities for niche tourism. Given the vast, rural nature of the County, it may be a challenge for visitors to recognize what tourism opportunities exist and how to find them. Wayfinding signage, including a County brand, can provide clear and easy information to visitors. The signage may identify locations of restaurants, cultural or historic facilities, or recreation opportunities. The intent of this project is to raise visitor awareness of the County's resources. A clear wayfinding program can also assist residents to better navigate in the event of an emergency.

#### Project Location

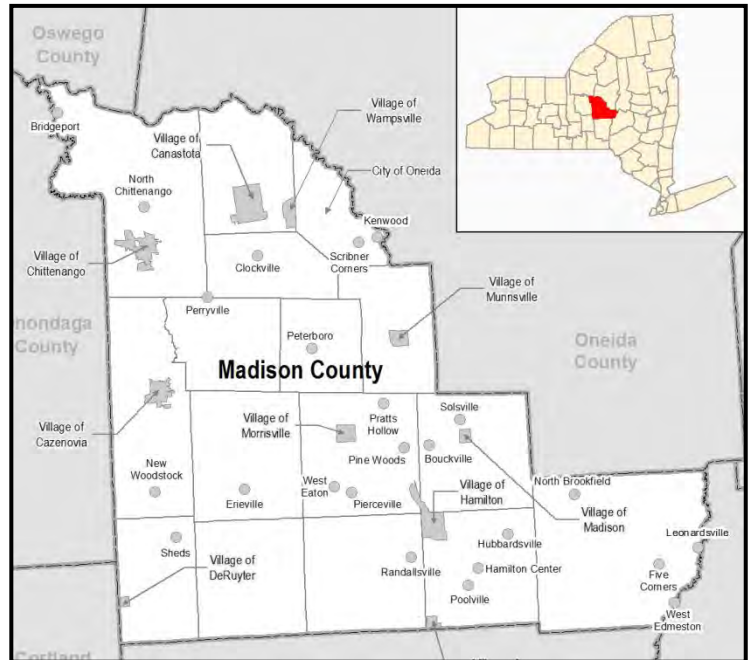
This project is a countywide project in Madison County.

#### Estimated Project Costs

The estimated cost to prepare and implement the Wayfinding Signage Plan is approximately **\$250,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - Market New York – Regional Tourism Marketing Competition
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)



#### Project Benefits

##### Economic Benefits

The implementation of a Countywide Wayfinding Signage Plan is directly linked to visitors knowing what resources are available in Madison County. Resource locations to be identified are restaurants, cultural or historic facilities, and recreation opportunities. By way of clear signage, visitors would be made aware of these resources, resulting in the increased visitation to these locations and therefore more revenue being driven into the local economy. This would aid in making Madison County’s local economy more stable.

Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



### **Health and Social Benefits**

Implementation of this Plan would lead to social benefits which include potentially attracting new businesses to the County as well as leading to steady employment rates and income.

### **Cost-Benefit Analysis**

Countywide wayfinding signage would promote community tourism as a means of stimulating communities affected by flood damage. Enhanced signage would allow for a “branding” of the County and its municipalities. This would improve economic development opportunities and financially benefit the County through increased awareness of cultural and recreational resources and assets as well as local businesses and commercial centers. Enhanced tourism and additional jobs would help restore and preserve Madison County as a sustainable community, thereby creating significant economic benefits.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

This project would reduce risk on an economic level and social level. Clear signage throughout the County would benefit all residents and visitors in the event of an emergency situation. Signage would allow for direction to amenities as well as emergency response destinations reducing risk within the County.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Create a marketing/branding strategy to attract visitors.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are Madison County Tourism, Madison County Planning, and the Madison County Center for Economic Development.







## R8 – CENTRALIZED CHAMBER OF COMMERCE FEASIBILITY PLAN

### Economic Development

#### Project Description

Commercial areas were hit hard by the summer 2013 flooding. Residents depend on these businesses for their goods and services and employment, and there is a strong desire to support economic activity in an area that has, over time, witnessed business closures and economic declines.

This project would evaluate the feasibility of combining the existing five Chambers of Commerce within the County: Southern Madison County Chamber (Village of Hamilton Chamber); Canastota Chamber, Greater Sullivan Area Chamber; Greater Cazenovia Area Chamber; and Greater Oneida Area Chamber. The project would evaluate the benefits of this approach from a business and tourism perspective as well as from a fiscal standpoint. A centralized Chamber of Commerce could create a single, comprehensive resource for businesses as they recover from storm events.

#### Project Location

This project is a countywide project in Madison County.



#### Estimated Project Costs

The estimated cost to prepare a feasibility study for a Centralized Chamber of Commerce is approximately **\$10,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1</sup>)
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

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## Project Benefits

### **Economic Benefits**

This project would aid in Madison County's ability to expand their business and tourism market while doing so in an efficient manner so as to reduce cost. It would also help individual businesses to have a single, comprehensive resource.

### **Health and Social Benefits**

A Centralized Chamber of Commerce would allow for a streamlining of information, benefiting both residents and tourists with a single place to find information about events, businesses and services, recreational and cultural opportunities and other resources regarding the entire County and its many municipalities.

## Cost-Benefit Analysis

A Centralized Chamber of Commerce would build upon and streamline the efforts of individual Chamber of Commerce throughout the County. This would promote tourism as a means of stimulating communities affected by flood damage, improve economic development opportunities and financially benefit the County through increased awareness of cultural and recreational resources and assets as well as local businesses and commercial centers. Enhanced tourism and additional jobs would help restore and preserve Madison County as a sustainable community, thereby creating significant economic benefits.

The potential benefits of this project are believed to outweigh the financial invest of project implementation.

## Risk Reduction Analysis

A centralized Chamber of Commerce could create a single, comprehensive resource for businesses as they recover from storm events.

## Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

## Strategies

Create a marketing/branding strategy to attract visitors.

## Project Status

The project is in the conceptual/planning stage.

## Anticipated Project Lead

The anticipated project leads are Madison County Tourism, Madison County Planning, and the Madison County Center for Economic Development.



## R9 – EXTENSION AND RECAPITALIZATION OF MADISON COUNTY’S MICROENTERPRISE PROGRAM

### *Economic Development*

#### Project Description

Commercial areas were hit hard by the summer 2013 flooding. Residents depend on these businesses for their goods and services and employment, and there is a strong desire to support economic activity in an area that has, over time, witnessed business closures and economic declines.

The County currently has a microenterprise program to provide training and assistance to small businesses. This project would continue the program and allow the County to continue assisting local businesses, supporting the County’s economic resilience.

#### Project Location

This project is a countywide project in Madison County.



#### Estimated Project Costs

The estimated cost for Madison County to continue the Microenterprise Program is approximately **\$200,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - New York Main Street – Traditional NYMS Target Area Building Renovation Projects
  - New York Main Street – Technical Assistance (NYMS-TA)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

#### Project Benefits

##### *Economic Benefits*

The County’s Microenterprise Program would create many economic benefits, such as an increase in the number of successful small businesses within the County which would lead to more revenue being driven into the local economy.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Health and Social Benefits**

Extending and recapitalizing the County's Microenterprise Program would mean increased awareness of how to operate a small business in Madison County. This would lead to greater numbers of successful small businesses while helping the County maintain a stable employment number and income rate.

### **Cost-Benefit Analysis**

Continuing the County's Microenterprise program would promote small and local business as a means of stimulating communities affected by flood damage, improve economic development opportunities and therefore financially benefit the County. Enhanced small business support and additional jobs would help restore and preserve Madison County as a sustainable community, thereby creating significant economic benefits.

The potential benefits of this project are believed to outweigh the financial invest of project implementation.

### **Risk Reduction Analysis**

This project would assist small businesses and support their ability to aid in driving the local economy. Creating a strong business community and stable economy would increase the County's financial resiliency, allowing commercial areas in Madison to recover more easily and quickly after storm events.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Identify funding opportunities to attract and assist small businesses.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are Madison County and the Madison County Center for Economic Development.



## P37 – CITY OF ONEIDA DPW GARAGE RELOCATION

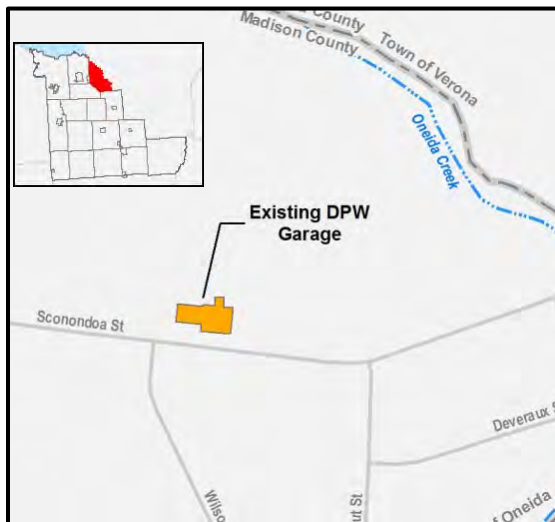
Health and Social Services

### Project Description

Flooding of the Oneida Creek resulted in 3-4 feet of water in the City of Oneida Department of Public Works (DPW) garage and substantial damages, including structural, to the existing Oneida DPW garage building as well as loss of equipment. Along with equipment and vehicle damage, an oil (motor, transmission, hydraulic) spill occurred in the garage due to the flood. The existing facility is 4.6 feet below the 100-year floodplain and directly south of the worst observed streambank overtopping. The project will relocate the Oneida DPW garage and related facilities out of the 100-year floodplain boundary. A new facility with sustainable features would be designed, bid and then constructed on City-owned property.



(Source: City of Oneida)



### Project Location

The City of Oneida DPW garage is currently located on Sconodda Street near Oneida Creek in the City of Oneida. This project proposes to relocate it to a City owned property near Harden Street.

### Estimated Project Costs

The estimated cost to relocate the City's DPW Garage to a new facility is approximately **\$1.9 million** and the funding request is for the entire amount of the project.

This cost includes professional services and construction (topographic and utility survey, geotechnical subsurface investigation and building design from design document phase to construction administration).

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Energy Research and Development Authority - Existing Facilities Program
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



## Project Benefits

### ***Economic Benefits***

Relocation of the DPW garage outside of the floodplain would eliminate the risk of damage to the facility, supplies and equipment. Short term economic benefits would be seen during the construction phase through the local expenditures of goods, services, labor, materials and equipment. Longer term financial benefits would be realized by significantly reducing the need for maintenance, repair or reconstruction to the facility caused by flood damage.

### ***Health and Social Benefits***

The entire community would benefit from the construction of a new DPW garage located out of the floodplain through the insurance of continuous operation of municipal services during future storms.

### ***Environmental Benefits***

The relocation of the DPW garage out of the floodplain would reduce the potential release of contaminants such as fuel, salt, and sand into the environment during severe weather events.

## Cost-Benefit Analysis

Relocation and improvements to the DPW facility outside of the floodplain would provide long term benefits to the community through safe access and availability of equipment, supplies and materials during and after severe storm events and flooding. Residents of the City of Oneida would be benefited by continuous operation of the City DPW, which provides vital services during weather events. There would be a reduction of damage risk to the facility and equipment, as well as a reduction in local government expenditure for reconstruction and replacement of damaged equipment. Construction jobs would also result from this project.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

This project intends to relocate the City of Oneida DPW garage to a location outside of the floodplain, thereby removing the asset from a risk area and reducing the asset's vulnerability and exposure.

## Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

## Strategies

Upgrade and/or relocate critical government facilities and infrastructure out of the floodplain.

## Project Status

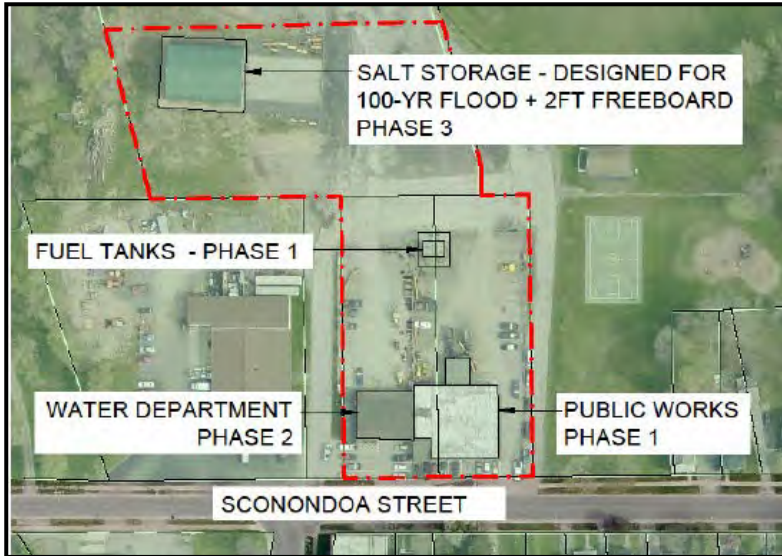
The project is ready for design and implementation.

## Anticipated Project Lead

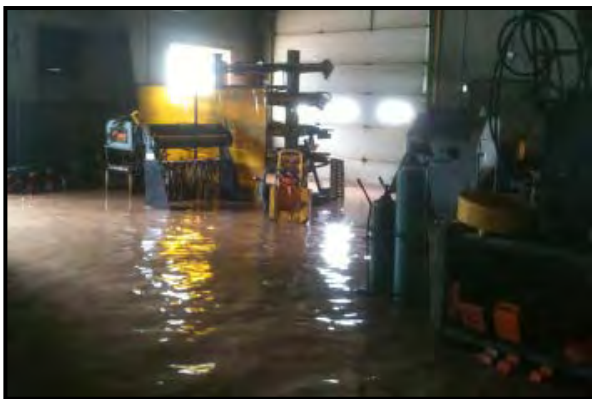
The anticipated project lead is the City of Oneida.

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*

### Existing DPW Facility



The existing DPW facility is a 1970s era 6,700 square foot, one-story, slab-on-grade block structure. Below is a phased relocation layout of the existing facility. The relocation of the Water Department and the Salt Shed will be done as separate phases and have their own project profiles.



### Proposed DPW Facility

- Steel prefabricated building with sandwich panel walls
- Radiant heating system
- Parking area for 5 six-wheel plow trucks and 2 loaders
- 2 maintenance bays
- Mechanical room
- Parts/tools storage
- Supervisor office
- Restroom
- Meeting/lunch room



(All photos and figures on this page provided by the City of Oneida)

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



## P38 – RELOCATION OF THE ONEIDA CITY WATER DEPARTMENT GARAGE

Health and Social Services

### Project Description

Flooding of the Oneida Creek via bank and bridge overtopping resulted in three to four feet of water in the City of Oneida’s Water Department garage (adjacent to the Oneida Department of Public Works) located at Sconooda Street and substantial damages and equipment loss. The existing facility is a 1-story slab on grade structure, approximately 3,000 square feet in size and sits over 4 feet below the flood elevation. The project will relocate the Water Department to a new facility out of the 100-year floodplain.



### Project Location

The Oneida Water Department garage is currently located on Sconooda Street in the City of Oneida. This project proposes to move it to a City owned property near Harden Street.

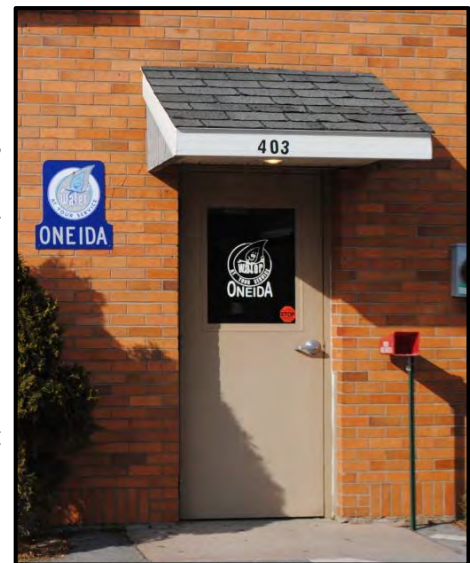
### Estimated Project Costs

The estimated cost to relocate the City’s Water Department in a new facility is approximately \$480,000 and the funding request is for the entire amount of the project as follows:

Engineering/Design:	\$80,000
Construction:	\$400,000
<b>Total:</b>	<b>\$480,000</b>

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Energy Research and Development Authority - Existing Facilities Program
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)



Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.





## Project Benefits

### ***Economic Benefits***

Relocation of the Water Department garage outside of the floodplain would eliminate the risk of damage to the facility, supplies and equipment. Short term economic benefits would be seen during the construction phase through the local expenditures of goods, services, labor, materials and equipment. Longer term financial benefits would be realized by significantly reducing the need for maintenance, repair or reconstruction to the facility caused by flood damage.

### ***Health and Social Benefits***

The entire community would benefit from the construction of a new Water Department garage located out of the floodplain through the assurance of continuous operation of municipal water, a critical service, during future storms.

### ***Environmental Benefits***

The relocation of the Water Department garage out of the floodplain would reduce the risk of potential contamination of the potable water supply as well as the potential release of contaminants into the environment during severe weather events.

## Cost-Benefit Analysis

Relocation and improvements to the Water Department facility outside of the floodplain would provide long term benefits to the community through continuous availability of potable water during and after severe storm events and flooding. Residents of the City of Oneida would be benefited by continuous operation of the Water Department, which provides clean and safe water, a vital service. There would be a reduction of damage risk to the facility and equipment, as well as a reduction in local government expenditure for reconstruction and replacement of damaged equipment. Construction jobs would also result from this project.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

This project intends to relocate the City of Oneida Water Department garage to a location outside of the floodplain, thereby removing the asset from a risk area and reducing the asset's vulnerability and exposure.

## Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

## Strategies

Upgrade and/or relocate critical government facilities and infrastructure out of the floodplain.

## Project Status

The project is ready for design and implementation.

## Anticipated Project Lead

The anticipated project lead is the City of Oneida.



(Source: Madison County)

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



## P39 – RELOCATION OF THE ONEIDA CITY SALT SHED

Community Planning and Capacity Building

### Project Description

Flooding of the Oneida Creek via bank and bridge overtopping resulted in damages to City’s salt shed whose slab is located one foot above the flood elevation. A loss of materials occurred as well. The existing facility has a 1,000-ton material capacity. The project will relocate the salt shed to a new facility out of the 100-year floodplain.



### Project Location

The salt shed is currently located on Sconondoa Street in the City of Oneida. This project proposes to move it to a City owned property near Harden Street.

### Estimated Project Costs

The estimated cost to relocate the City’s Salt Shed is approximately \$60,000 and the funding request is for the entire amount of the project as follows:

Engineering/Design:	\$10,000
Construction:	\$50,000
<b>Total:</b>	<b>\$60,000</b>

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Energy Research and Development Authority - Existing Facilities Program
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### Economic Benefits

Relocation of the salt shed outside of the floodplain would eliminate the risk of damage to the facility, supplies and equipment. Short term economic benefits would be seen during the construction phase through the local expenditures of goods, services, labor, materials and equipment. Longer term financial benefits would be realized by significantly reducing the need for maintenance, repair or reconstruction to the facility caused by flood damage.

Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



### **Environmental Benefits**

The relocation of the City salt shed out of the floodplain would reduce the potential release of contaminants into the environment during severe weather events.

### **Cost-Benefit Analysis**

Relocation and improvements to the salt shed facility outside of the floodplain would provide long term benefits to the community through continuous operations during and after severe weather events and flooding. There would be a reduction of damage risk to the facility and equipment, as well as a reduction in local government expenditure for reconstruction and replacement of damaged equipment.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.



*(Source: Madison County)*

### **Risk Reduction Analysis**

This project intends to relocate the City of Oneida salt shed to a location outside of the floodplain, thereby removing the asset from a risk area and reducing the asset's vulnerability and exposure.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Upgrade and/or relocate critical government facilities and infrastructure out of the floodplain.

### **Project Status**

The project is ready for design and implementation.

### **Anticipated Project Lead**

The anticipated project lead is the City of Oneida.

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



## R10 – MADISON COUNTY DEPARTMENT OF HEALTH DATA MANAGEMENT SYSTEM

Health and Social Services

### Project Description

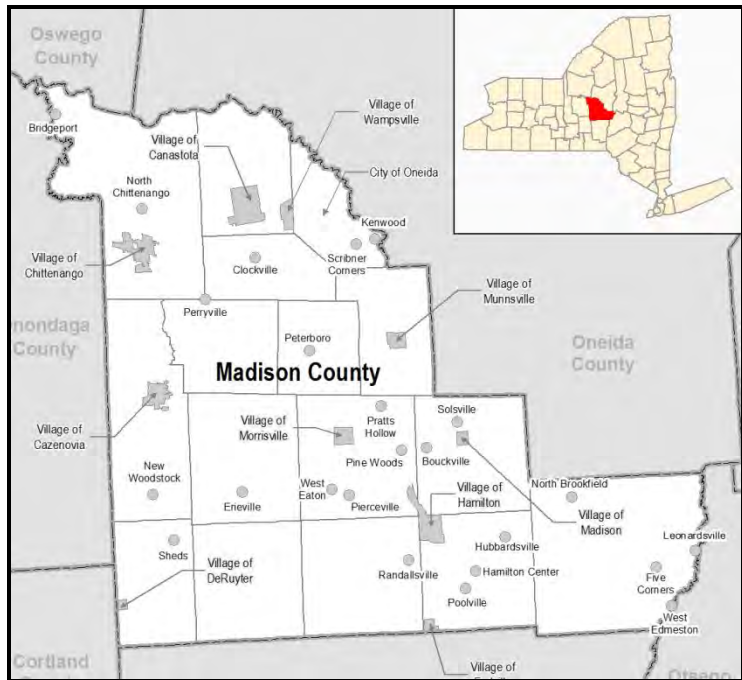
The Health Data Management System project would develop a baseline of environmental health indicators and identify the appropriate data system to track and manage the indicators. These indicators could be tracked over time to understand the health impacts of flood events, particularly on rural communities. This system would be a coordinated effort with the NYS Department of Health and other agencies. Establishing a beta test for the system would be a subsequent task.

### Project Location

This would be a countywide project in Madison County.

### Estimated Project Costs

The estimated cost to obtain data and create a data management system for the County Health Department is approximately **\$70,000** and the funding request is for the entire amount of the project.



### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### **Risk Reduction Benefits**

This project would help the County to better understand, and thereby reduce, health risks during and after severe storm events.

#### **Health and Social Benefits**

In the event of an environmental emergency, such as a flooding event, knowing what the baseline environmental health indicators are would allow the NYS Department of Health and other agencies to more easily identify if human health impacts are flood-related or coming from another source.

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



### **Environmental Benefits**

The creation and maintenance of an environmental indicator data management system would be an indirect environmental benefit. Establishing a baseline for environmental factors in Madison County would help the County track health in both urban and rural areas.

### **Cost-Benefit Analysis**

This project would improve the ability of the Madison County Health Department to respond to future storm events. By quickly assessing the historic potential health risk of storm events, the Health Department can better allocate resources and staff, thereby improving resiliency, public health and decreasing expenditures.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Through the establishment of an environmental health indicator baseline, Madison County could track certain health-related issues. This project would give the County the ability to collect, manage and manipulate their own data while providing a more transparent information sharing process with the County. This would assist in identifying risk factors and help the County Public Health Department residents to be more prepared.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Formalize a system with partnering organizations to provide services during and following a flood event.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project lead is the Madison County Department of Health.



## R11 – VULNERABLE POPULATIONS REGISTRY AND OUTREACH

Health and Social Services

### Project Description

The Madison County NYRCR Committee identified the need to ensure that the most vulnerable populations within the County have the necessary information to adequately prepare for disasters and temporary shelter in the event of an emergency. One of the biggest priorities of the County is maintaining an up-to-date vulnerable population database which could be used during an emergency to prioritize emergency responder and evacuation efforts.

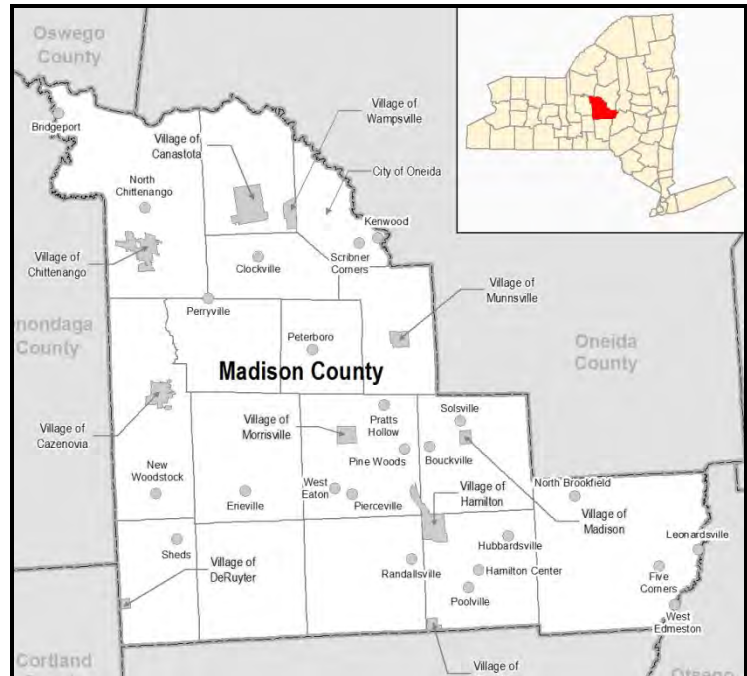
The registry would identify vulnerable populations within the County and establish a plan to provide outreach and education about pre-existing programs to assist these populations. This project would improve the capacity of the County Emergency Services Operations as well as the County Public Health Department to prepare for and respond to future storm events.

### Project Location

This would be a countywide project in Madison County.

### Estimated Project Costs

The estimated cost to obtain data, create a vulnerable populations registry and prepare an outreach plan is approximately **\$30,000** and the funding request is for the entire amount of the project.



### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1</sup>)
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### Risk Reduction Benefits

By establishing a vulnerable population registry and emergency plan, appropriate evacuation procedures would be created, mapped and practiced. Another benefit to establishing this Plan would be the ability to provide food and shelter to those identified vulnerable populations

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



immediately following an emergency. This Plan would help Madison County's vulnerable populations as well as emergency responders act more efficiently.

#### ***Economic Benefits***

This project would allow for more efficient operations and communications relating to vulnerable populations, thereby allowing for a portion of the communities' time, services and finances to be allocated elsewhere.

#### ***Health and Social Benefits***

This Plan would help vulnerable populations adequately prepare themselves and important documents in the event of a needed evacuation. Those identified in this Plan would be able to seek information and be educated on preparedness strategies for severe storms or flooding events, while knowing that their County is working to provide assistance to them in the case of such an emergency. It would also provide emergency responders with the information necessary to ensure vulnerable populations are reached and helped properly.

#### **Cost-Benefit Analysis**

This project would improve the capacity of emergency operations and responders to prepare for and respond to future storm events. By obtaining and assembling vital information regarding vulnerable populations, the expenditure of municipal time, resources and finances would be reduced.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

#### **Risk Reduction Analysis**

This project would help protect the most vulnerable populations, such as seniors, people with disabilities, economically disadvantaged and those who do not speak English as their first language. By ensuring communication with and access to vulnerable populations, the risk to human health and safety is reduced by making provision for shelter, potable water, medical attention, heat, food, and electricity. The strategic and efficient dissemination of information regarding vulnerable populations prior to and following an event has the potential to save lives in the aftermath of a disaster. The more knowledge and preparation the County emergency responders have before an acute event, the more likely they will be able to avoid health-related emergencies and ensure that the most vulnerable populations are safe.

#### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

#### **Strategies**

Planning and preparedness for protection of residents including the most vulnerable populations.

#### **Project Status**

The project is in the conceptual/planning stage.

#### **Anticipated Project Lead**

The anticipated project lead is Madison County.



## R12 – RESILIENCY EVALUATION OF MUNICIPAL FACILITIES COUNTYWIDE

Health and Social Services

### Project Description

This project would evaluate the resiliency of municipal and governmental facilities located in or adjacent to the floodplain. This countywide effort would inventory municipal structures and evaluate the risk of those facilities as well as a series of potential alternatives that could be implemented on a case by case basis to protect these important facilities. This project will include a pilot project which specifically evaluates alternatives to protect the Georgetown Town Hall and public works facilities, as well as several nearby homes. The Town Hall is adjacent to the Otselic River which often floods. The study may evaluate floodproofing the structures, relocation or implementing other physical measures to protect the structures. The benefits, impacts and costs of each alternative would be evaluated, including the long-term impacts upstream and downstream.

### Project Location

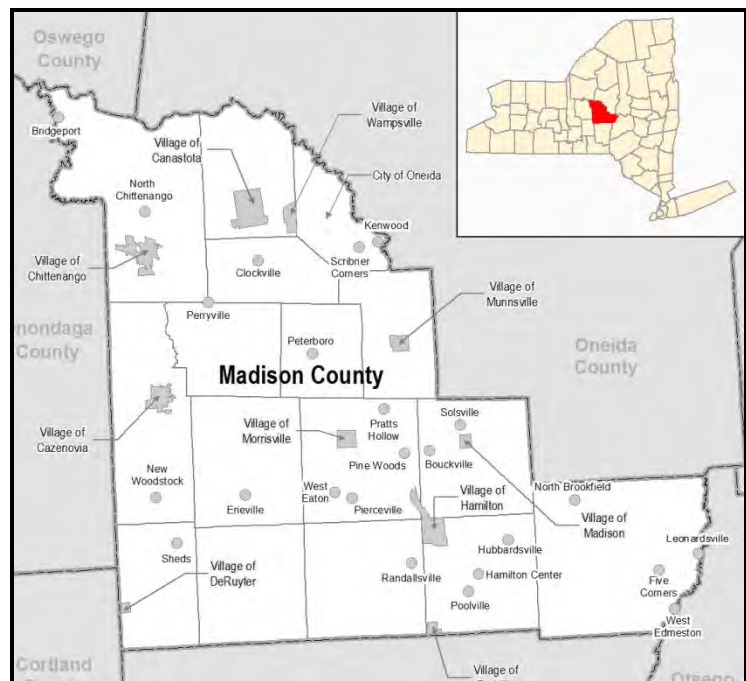
This project is a countywide project in Madison County.

### Estimated Project Costs

The estimated cost to conduct an evaluation of municipal facilities countywide, including the Georgetown facilities, is approximately **\$400,000** and the funding request is for the entire amount of the project.

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - New York Power Authority – ReCharge New York
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)



### Project Benefits

#### Risk Reduction Benefits

The pilot study would outline necessary steps to be taken to prevent municipal facilities, such as the Georgetown Town Hall, from continuous flooding and damages. This would eliminate risk of the building continually being damaged and protect employees and visitors.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*





### **Economic Benefits**

Madison County could use this study to identify structures located within its boundaries that are at significant risk of flooding. Knowing which municipal structures need to be relocated would help the County channel funding appropriately. The study would also identify resiliency measures to be enforced. These measures may include floodproofing structures, relocating buildings, and/or creating a berm. This would create significant economic benefits through a reduction in the costs incurred from repetitive loss of and damages to assets and the associated repairs.

### **Health and Social Benefits**

Many municipal facilities in Madison County, including Georgetown Town Hall, have various functions and are used for multiple events and activities. Having the Georgetown Town Hall, and other community structures evaluated would eliminate otherwise unavoidable future flooding damages and inconvenient interruptions to operations. This project would allow municipal personnel to continuously operate and provide services vital to the County and its residents. The entire community, including vulnerable populations, would experience these benefits.

### **Cost-Benefit Analysis**

Evaluating the resiliency of municipal facilities would provide long term benefits to the community through continuous municipal operations and services. There would be a reduction of damage risk to the facilities and any associated equipment, as well as a reduction in local government expenditure for reconstruction and replacement due to damages.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.



### **Risk Reduction Analysis**

A resiliency evaluation of the structures located within Madison County would reduce the risk of future flooding related damage to buildings that are frequented by residents, visitors and employees. The vulnerability and exposure of these community assets would also be reduced. The evaluation would therefore serve to address public safety.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Upgrade and/or relocate critical government facilities and infrastructure out of the floodplain.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are the Madison County Planning Department and the Soil and Water Conservation District.

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## P41 – FLOOD IMPACTED HOUSING DEMOLITION

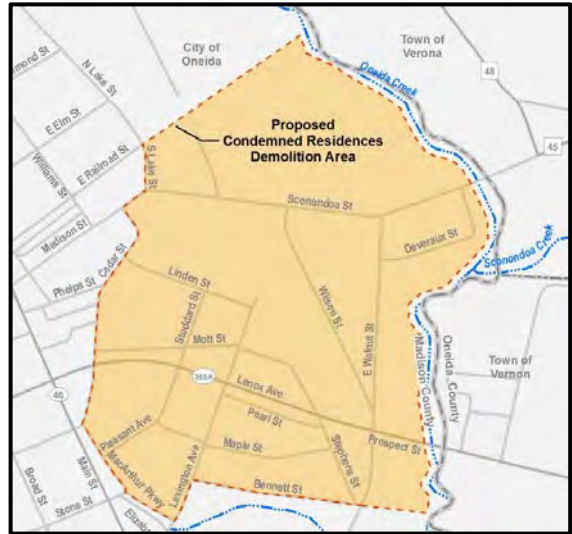
### Housing

#### Project Description

Flooding resulted in damages to many private houses within the City of Oneida. The project will assist with demolishing and removing destroyed homes and materials.

Floodwater is unsanitary due to the unsafe chemicals, mud and refuse it may come in contact with along the way. This often means contamination of anything floodwaters come in contact with, which was large portion of the homes in need of demolition. Once water recedes, there is also likelihood of mold growth especially during hot summer months.

Floodwater may also cause an extensive amount of structural damage. For example, a home may retain water that gets swept away outside or if water is pumped out from the basement prematurely while the soil around it remains saturated with heavy floodwater.<sup>iii</sup> This causes hydrostatic loads that press toward the side of the house with the lower water level, causing walls and floors to collapse or crack.<sup>iii</sup> Hydrodynamic loads, which result from floodwaters flowing against and around the house, can not only cause similar physical pressures, but can also inundate the house with silt and soil that can weaken the foundation.<sup>iii</sup>



#### Project Location

This project is in the “Flats” area of the City of Oneida.

#### Estimated Project Costs

The estimated cost to demolish approximately 12 flood impacted homes is approximately \$324,000 and the funding request is for the entire amount of the project as follows:

Engineering/Design:	\$54,000
Demolition:	\$270,000
<b>Total:</b>	<b>\$324,000</b>



(Source: Madison County)

#### Potential Funding Sources

Some residents have applied for or in the process of applying for buyout programs; additional funding sources include:

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.<sup>i</sup>)
  - NYS Community Development Block Grant (CDBG) Program
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program

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- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)



(Source: Madison County)

### Project Benefits

#### **Risk Reduction Benefits**

The flood impacted homes are structurally unstable and unfit to live in. By demolishing these homes the risk of further contamination, mold growth, or structural failure will be eliminated benefiting the adjacent homeowners and community.

#### **Health and Social Benefits**

Adjacent homeowners and the community will benefit from the removal of contaminated materials and unsafe structures.

#### **Environmental Benefits**

By demolishing severely flood impacted homes, contaminated materials and debris will be properly removed from the environment. The risk of additional mold growth and contamination will be eliminated.

### Cost-Benefit Analysis

The cost of demolishing severely flood damaged homes would be much less than complete remediation and reconstruction associated with contamination, mold and structural instability.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

### Risk Reduction Analysis

Risk to the adjacent homeowners and community would be greatly reduced through the demolition of flood impacted homes. By demolishing these homes the risk of further contamination, mold growth, or structural failure will be eliminated.

### Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

### Strategies

Enhance public safety and wellbeing within flood impacted neighborhoods.

### Project Status

The project is ready for design and implementation.

### Anticipated Project Lead

The anticipated project lead is the City of Oneida.



Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



## R13 – COUNTYWIDE HOUSING NEEDS EVALUATION

### Housing

#### Project Description

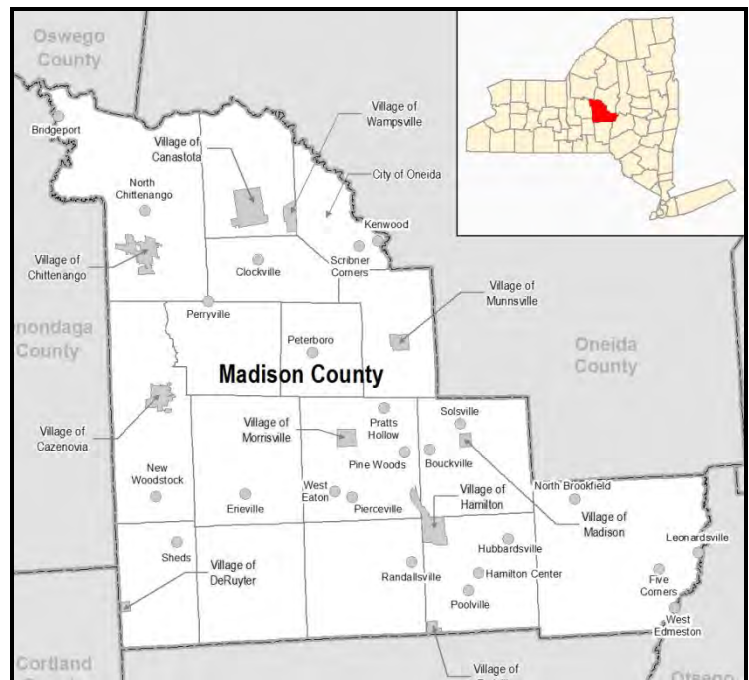
This evaluation would determine existing and future housing needs within the County's hamlets and villages. The type, diversity and location of housing would be identified. This evaluation would also work with the communities to identify options for housing relocation to areas outside the floodplain.

Repeated flood events that have damaged residential areas, coupled with rising flood insurance premiums, have left many residents in the County wanting to relocate to areas of higher elevation. Selling a home in a flood-prone area, however, presents a challenge and homeowners are left with the difficult decision of whether to sell the house at a substantial loss, abandon the house, or stay in the house, each of which result in a significant financial burden. Although FEMA has a hazard mitigation program to acquire repetitive flood loss properties, meeting the eligibility requirements of this program can be challenging. The County has indicated the need, therefore, for a local program to help homeowners through the process of property acquisition and/or relocation. It is preferable for such residents to stay in the municipality in order to maintain the population, the local tax base, and community ties. The acquisition program therefore should have a relocation component. Properties that are acquired can be strategically reused to create a Community asset, such as a waterfront park that doubles as flood storage during extreme precipitation events.

Relocation and expansion of housing outside of the floodplain presents a unique opportunity to meet the market demands of Madison County's current and future residents. The Community has expressed that small families seeking starter homes and elderly residents looking to downsize often have trouble finding housing in their desired size and price range.

#### Project Location

This is a countywide project in Madison County, however, the City of Oneida will be studied separately.



#### Estimated Project Costs

The estimated cost to conduct a countywide housing evaluation is approximately **\$100,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Community Development Block Grant (CDBG) Program
  - Environmental Facilities Corporation

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- NYS Energy Research and Development Authority
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)

## Project Benefits

### ***Risk Reduction Benefits***

The study may lead to fewer homes in floodplains throughout Madison County and result in fewer government expenditures related to emergency response services and evacuations for flooded residential areas in the County. Relocation outside of the floodplain removes people and their property from flood risks and associated damages, while resilient housing construction minimizes damages to housing from flood events. The needs evaluation would look at approaches to help achieve this type of risk reduction.

### ***Economic Benefits***

There is an economic development benefit to evaluating the need to create attractive housing outside of the floodplains in Madison County to accommodate young professionals and small families who are moving to or want to remain in the County. These demographic groups wish to live in higher elevation areas near existing downtown centers. Increased housing in such areas would be an advantage for further attracting potential employers to the area and stimulate further economic development.

### ***Health and Social Benefits***

For residents who choose to relocate to housing outside of flood-prone areas, risks to their health and safety from flooding would be reduced greatly. They would gain economic benefits from reduced flood insurance premiums. Because many residents who currently live in the high risk areas are economically disadvantaged, such as in mobile home parks adjacent to creeks, the relocation of these vulnerable populations would be a social benefit to the County.

### ***Environmental Benefits***

Environmentally, the overall County would benefit from fewer structures in the floodplain, which would allow for the creation of a more robust riparian buffer, allow for a more complete restoration of stream, tributary or creek corridors, and buffer the communities at risk from future flood events.

## Cost-Benefit Analysis

The evaluation would lead to a reduction in the risk of flooding of residential neighborhoods resulting in long-term resilient and sustainable benefits. The County's resiliency and ability to recover would be improved by the better emergency access to residential areas that would be otherwise inaccessible during flooding events as a result of a reduction in flooding on roadways. Evaluating the existing housing stock, issues and future demand would allow for appropriate development outside of the floodplain that meets residents' needs and thereby the County and its municipalities can better allocate resources and funds.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

Evaluating existing housing stock in Madison County will reduce risk of damage to communities' assets

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and amenities by developing new structures outside of floodplains while also determining the existing and future housing needs within the County.

**Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

**Strategies**

Ensure a diversity of safe, affordable housing options in areas not prone to flooding.

**Project Status**

The project is in the conceptual/planning stage.

**Anticipated Project Lead**

The anticipated project lead is the Madison County Planning Department.



## R14 – CITY OF ONEIDA HOUSING NEEDS EVALUATION

### Housing

#### Project Description

This evaluation would determine existing and future housing needs within the City of Oneida. The type, diversity and location of housing would be identified. This evaluation would also work with the City to identify options for housing relocation to areas outside the floodplain. This effort would coordinate with various local and state entities as well as non-profit organizations and higher education institutions.

Repeated flood events that have damaged residential areas, coupled with rising flood insurance premiums, have left many residents in the County wanting to relocate to areas of higher elevation. Selling a home in a flood-prone area, however, presents a challenge and homeowners are left with the difficult decision of whether to sell the house at a substantial loss, abandon the house, or stay in the house, each of which result in a significant financial burden. Although FEMA has a hazard mitigation program to acquire repetitive flood loss properties, meeting the eligibility requirements of this program can be challenging. The City has indicated the need, therefore, for a local program to help homeowners through the process of property acquisition. It is preferable for such residents to stay in the municipality in order to maintain the population, the local tax base, and community ties. The acquisition program therefore should have a relocation component. Properties that are acquired can be strategically reused to create a community asset, such as a waterfront park that doubles as flood storage during extreme precipitation events.

Relocation and expansion of housing outside of the floodplain presents a unique opportunity to meet the market demands of the City of Oneida's current and future residents.

#### Project Location

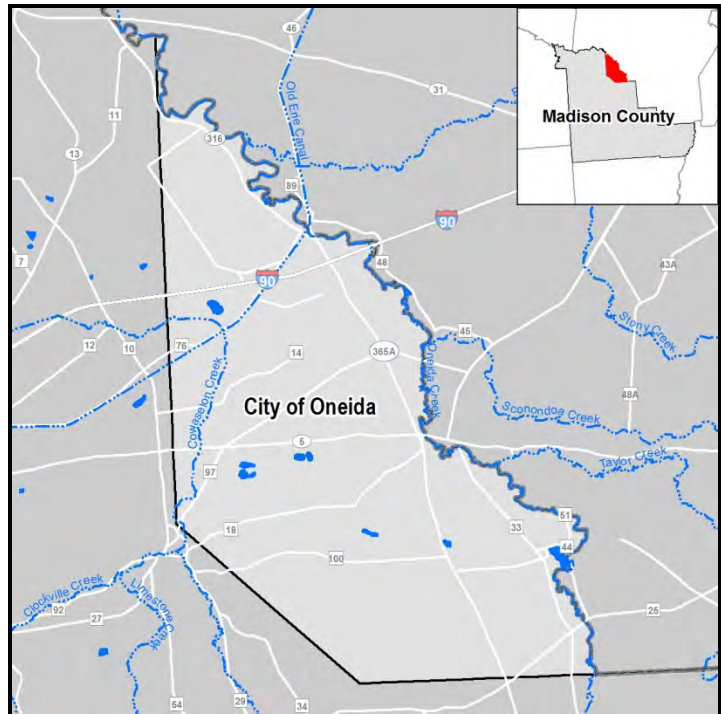
This project is located in the City of Oneida.

#### Estimated Project Costs

The estimated cost to conduct a housing evaluation for the City is approximately **\$50,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Community Development Block Grant (CDBG) Program
  - Environmental Facilities Corporation
  - NYS Energy Research and Development Authority
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant



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- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)

## Project Benefits

### ***Risk Reduction Benefits***

This study may lead to fewer homes in floodplains throughout the City of Oneida would result in less government expenditures related to emergency response services and evacuations for flooded residential areas in the City. Relocation outside of the floodplain removes people and their property from flood risks and associated damages, while resilient housing construction minimizes damages to housing from flood events. The needs evaluation would look at approaches to help achieve this type of risk reduction.

### ***Economic Benefits***

There is an economic development benefit to evaluating the need to create attractive housing outside of the floodplains in the City of Oneida to accommodate young professionals and small families who are moving to or want to remain in the City. These demographic groups wish to live in higher elevation areas near existing downtown center. Increased housing in such areas would be an advantage for further attracting potential employers to the area and stimulate further economic development.

### ***Health and Social Benefits***

For residents who choose to relocate to housing outside of flood-prone areas, risks to their health and safety from flooding would be reduced greatly. They would gain economic benefits from reduced flood insurance premiums. Because many residents who currently live in the high risk areas are economically disadvantaged, such as in mobile home parks adjacent to creeks, the relocation of these vulnerable populations would be a social benefit to the City.

### ***Environmental Benefits***

Environmentally, the overall City would benefit from fewer structures in the floodplain, which would allow for the creation of a more robust riparian buffer, allow for a more complete restoration of stream, tributary or creek corridors, and buffer the community at risk from future flood events.

## Cost-Benefit Analysis

The evaluation would lead to a reduction in the risk of flooding of residential neighborhoods resulting in long-term resilient and sustainable benefits. The City’s resiliency and ability to recover would be improved by the better emergency access to residential areas that would be otherwise inaccessible during flooding events as a result of a reduction in flooding on roadways. Evaluating the existing housing stock, issues and future demand would allow for appropriate development outside of the floodplain that meets residents’ needs and thereby the City and its municipalities can better allocates resources and funds.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

Evaluating the existing housing stock located in Oneida would reduce risk of damage to the City’s assets and amenities by developing new structures outside the floodplain while also determining the existing and future housing needs within the City.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*





### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Ensure a diversity of safe, affordable housing options in areas not prone to flooding.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project lead is the City of Oneida.



## R15 – CITY OF ONEIDA AFFORDABLE DOWNTOWN RENTAL HOUSING

### Housing

#### Project Description

The Oneida Flats area, severely impacted during the summer 2013 flood event, is a low-lying and low-income neighborhood. Rebuilding damaged homes that comply with NYS building codes in flood zones is not a viable option for many of the affected residents due to the costs. This has left residents with few affordable housing options. This project involves developing affordable rental housing in downtown Oneida. Creating and developing rental housing will provide the greatest number of units while reaching the greatest number of residents in the shortest period of time. It is preferable for such residents to stay within the community in order to maintain the population, the local tax base and community ties. This project will also keep community members geographically close to their previous neighborhood, allowing them to utilize the same school, churches and services.

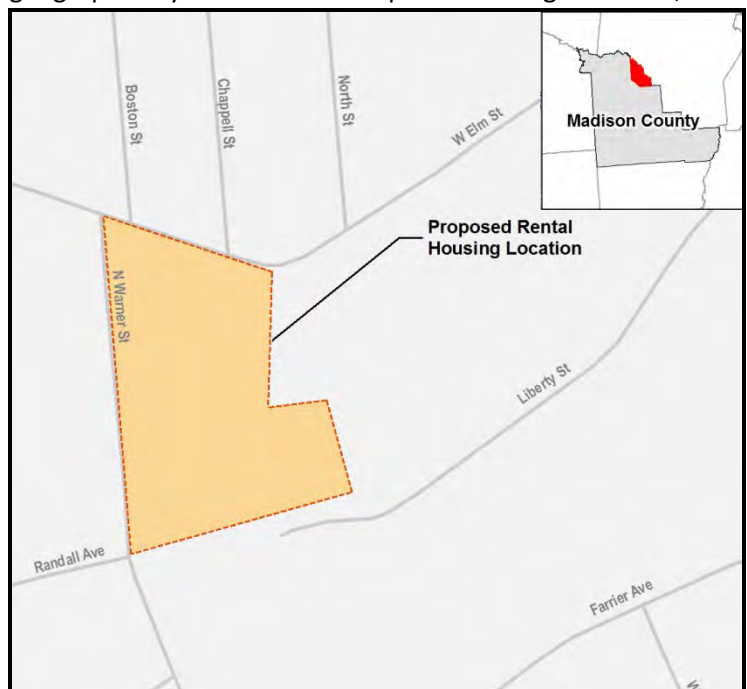
Utilizing vacant City-owned property for such development provides an opportunity to put property back on the tax rolls, and bring people to the retail and service core of the community. It is anticipated the City would be responsible for site preparation including soil remediation.

#### Project Location

This project is located in the City of Oneida, at the corner of North Warren and West Elm Streets, a few blocks from downtown.

#### Estimated Project Costs

The estimated cost of the entire project is \$11 million. The City of Oneida's share is estimated at **\$500,000** and the funding request is for this amount. The remaining costs will be provided by various stakeholders.



#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Community Development Block Grant (CDBG) Program
  - Environmental Facilities Corporation
  - NYS Energy Research and Development Authority
- Homes and Community Renewal (HCR) CDBG Disaster Recovery Program
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



## Project Benefits

### **Risk Reduction Benefits**

Fewer homes in floodplains throughout Oneida would result in less government expenditures related to emergency response services and evacuations for flooded residential areas in the City. Relocation outside of the floodplain would remove people and property from flood risks and associated damages. Resilient housing construction would minimize flood damages to housing.

### **Economic Benefits**

There is an economic development benefit to creating attractive rental housing downtown and outside of the floodplain in the City of Oneida to accommodate families that have been displaced by the recent floods, but want to remain in the downtown area. Additionally, the project complements the City's Comprehensive Plan and could allow for re-use of vacant City-owned land.

### **Health and Social Benefits**

For residents who choose to relocate to housing outside of flood-prone areas, risks to their health and safety from flooding would be reduced greatly. They would gain economic benefits from reduced flood insurance premiums. Because many residents who currently live in the high risk areas are economically disadvantaged, the relocation of these vulnerable populations would be a social benefit to the City. Creation of affordable rental housing downtown would allow residents to remain in the City center and stimulate downtown revitalization.

### **Environmental Benefits**

Environmentally, the overall City would benefit from fewer structures in the floodplain, which would allow for the creation of a more robust riparian buffer, allow for a more complete restoration of stream, tributary or creek corridors, and buffer the community at risk from future flood events. City-owned property would be sold/returned to tax rolls.

## Cost-Benefit Analysis

This project would reduce the risk of flooding of residential neighborhoods resulting in long-term resilient and sustainable benefits.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

## Risk Reduction Analysis

Developing new residential structures outside of the floodplain would reduce the risk of damage to both the City's and its residents' assets and amenities.

## Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

## Strategies

Ensure a diversity of safe, affordable housing options in areas not prone to flooding.

## Project Status

The project is in the planning stage.

## Anticipated Project Lead

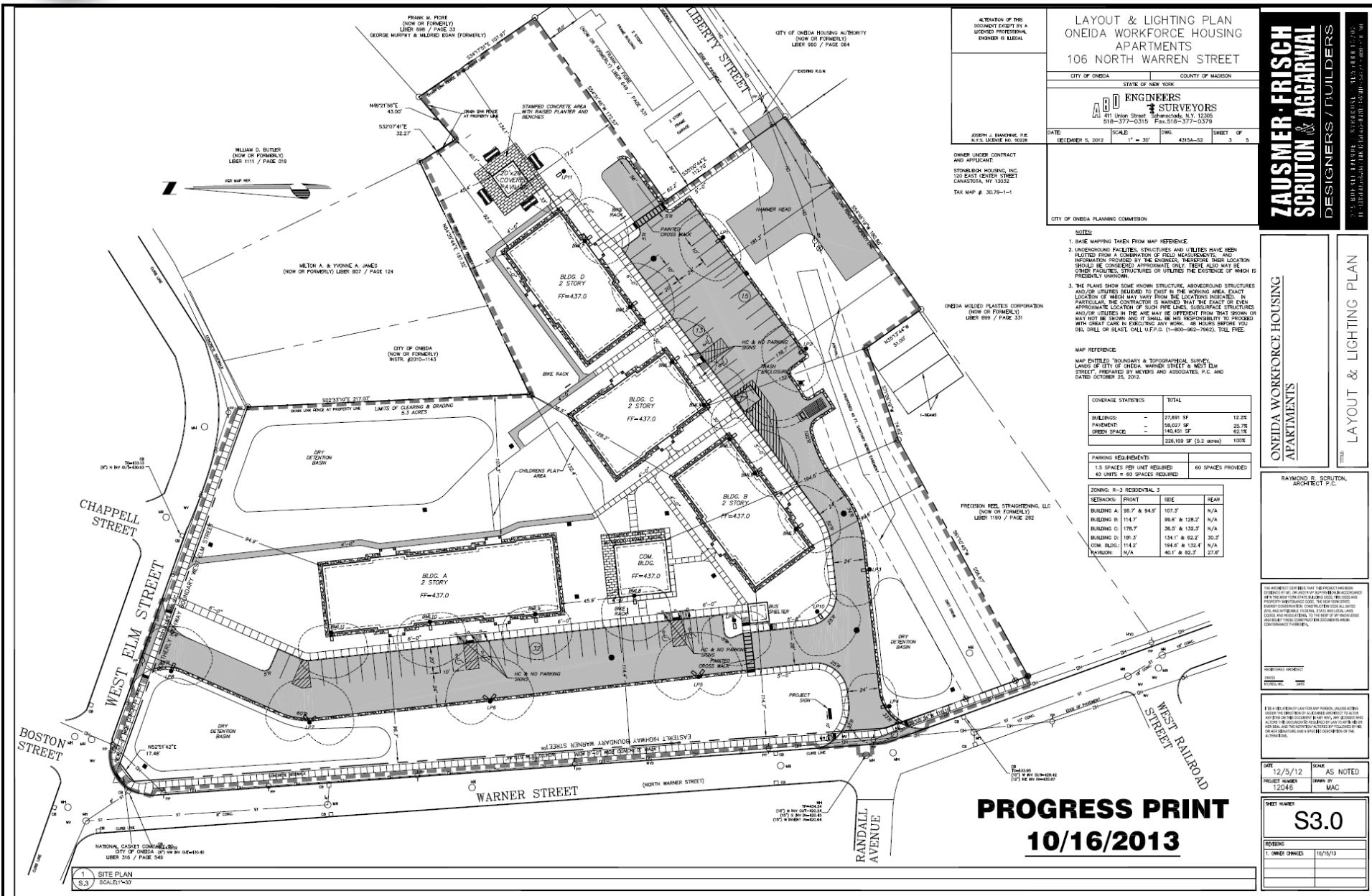
The anticipated project lead is the City of Oneida.

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



**ONEIDA WORKFORCE HOUSING**  
ONEIDA, NEW YORK

*Preliminary rendering (Source: City of Oneida)*



ALLOCATION OF THE DOCUMENT SHEET BY A LICENSED PROFESSIONAL ENGINEER IS LEGAL.

**LAYOUT & LIGHTING PLAN**  
**ONEIDA WORKFORCE HOUSING APARTMENTS**  
 106 NORTH WARREN STREET

CITY OF ONEIDA COUNTY OF MADISON STATE OF NEW YORK

**ABD ENGINEERS & SURVEYORS**  
 411 Union Street  
 Canastota, NY 13032  
 315-377-0315 Fax: 315-377-0379

DATE: DECEMBER 5, 2012 SCALE: 1" = 30' TWC: 4315A-52 SHEET: 3 OF 5

OWNER UNDER CONTRACT AND APPLICANT:  
 STONEBROOK HOUSING, INC.  
 100 EAST CENTER STREET  
 CANASTOTA, NY 13032  
 TAX MAP # 30.79A-1-1

CITY OF ONEIDA PLANNING COMMISSION

**ZAUSMER · FRISCH SCRUTON & AGGARWAL**  
 DESIGNERS / BUILDERS

- NOTES:**
1. BASE MAPPING TAKEN FROM MAP REFERENCE.
  2. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN LOCATED FROM A COMBINATION OF FIELD MEASUREMENTS AND LOCATION INFORMATION PROVIDED BY OTHER SOURCES. EXISTING UTILITIES SHOULD BE CONSIDERED APPROXIMATE ONLY. THERE ALSO MAY BE OTHER FACILITIES, STRUCTURES OR UTILITIES THE EXISTENCE OF WHICH IS PRESIDENTLY UNKNOWN.
  3. THE PLANS SHOW SOME KNOWN STRUCTURE, ABOVEGROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT LOCATION APPROXIMATE LOCATION OF SUCH PIPE LINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE DIFFERENT FROM THAT SHOWN, OR MAY NOT BE SHOWN AT ALL. IT SHALL BE THE RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. AN HOUR BEFORE YOU DIG, DRILL OR BLAST, CALL U.P.F.O. (1-800-862-7962), TOLL FREE.
- MAP REFERENCE:  
 MAP ENTITLED, "BOUNDARY & TOPOGRAPHICAL SURVEY, LANDS OF CITY OF ONEIDA, WARNER STREET & WEST ELM STREET," PREPARED BY HEWES AND ASSOCIATES, P.C. AND DATED OCTOBER 25, 2012.

COVERAGE STATISTICS	TOTAL
BUILDINGS	27,691 SF 12.2%
PAVEMENT	56,027 SF 23.7%
GREEN SPACE	146,853 SF 62.1%
	230,571 SF (2.2 acres) 100%

PARKING REQUIREMENTS	
1.5 SPACES PER UNIT REQUIRED	160 SPACES PROVIDED
80 UNITS = 60 SPACES REQUIRED	

BUILDING	DIMENSIONS		
	FRONT	SIDE	REAR
BUILDING A	96.7' & 94.5'	107.3'	N/A
BUILDING B	114.7'	89.6' & 128.2'	N/A
BUILDING C	178.7'	36.5' & 132.3'	N/A
BUILDING D	181.3'	134.1' & 82.2'	30.2'
COM. BLDG.	114.2'	144.4' & 132.4'	N/A
WALKWAY	N/A	40.1' & 82.2'	27.6'

ONEIDA WORKFORCE HOUSING APARTMENTS

LAYOUT & LIGHTING PLAN

RAYMOND R. SCRUTON, ARCHITECT P.E.

THE ARCHITECT CERTIFIES THAT THE PROJECT INFORMATION HAS BEEN CHECKED FOR CONFORMANCE WITH THE CODES AND REGULATIONS GOVERNING THE PROJECT AND THAT THE ARCHITECT HAS BEEN ADVISED BY THE CLIENT OF ALL NECESSARY PERMITS AND APPROVALS AND THAT THE ARCHITECT HAS BEEN ADVISED OF ALL NECESSARY PERMITS AND APPROVALS AND THAT THE ARCHITECT HAS BEEN ADVISED OF ALL NECESSARY PERMITS AND APPROVALS.

DATE: 12/5/12 SCALE: AS NOTED  
 PROJECT NUMBER: 12045 DRAWN BY: MAC

SHEET NUMBER: **S3.0**

REVISIONS:

1. OWNER OWNED	10/15/13
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Preliminary site layout (Source: City of Oneida)



## R16 – RESIDENTIAL FLOODPROOFING ASSISTANCE PROGRAM

Housing

### Project Description

This assistance program would apply to those homes and neighborhoods that are not able to be relocated. To ensure the safety and welfare of those continuing to live in areas prone to flooding, educational, technical and financial assistance would be provided to owners of floodproof homes. The program would establish funds that would be distributed based on pre-determined criteria for elevation and floodproofing. The program would also set eligibility criteria. Partnerships with local, state and federal agencies as well as with institutions such as Colgate University would be encouraged. This program is intended to take effect when all other options for housing relocation and flood retention alternatives have been exhausted.



(Source: Madison County)

For residents who cannot or do not wish to relocate to higher elevation areas, stronger building code regulation and incentive programs can help to bridge the gap to more flood-resilient housing construction. New residential development in the floodplain, though not recommended from a Community resiliency perspective, should require strict flood mitigation measures, including elevated first floors, limited basement space, and elevated utilities and electrical outlets.

There is also the opportunity for municipal participation in FEMA’s National Flood Insurance Program (NFIP) Community Rating System (CRS). The CRS rewards actions and policies implemented by communities that exceed the requirements of the NFIP with reduced flood insurance premiums of up to 45%. Participation requires widespread planning

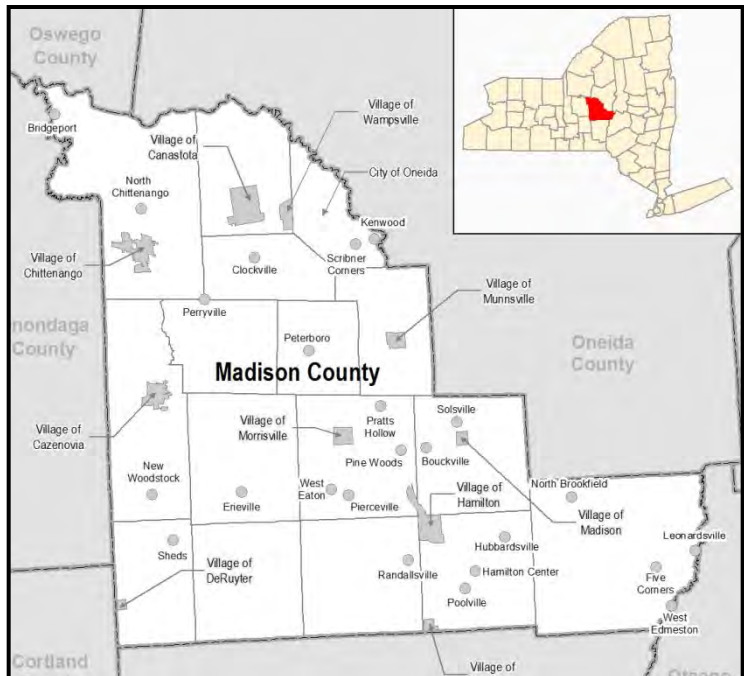
and coordinated implementation within a community in order to validate the CRS’s floodplain management requirements.

### Project Location

This project is a countywide project in Madison County.

### Estimated Project Costs

The estimated cost to create a floodproofing assistance program is approximately **\$500,000** and the funding request is for the entire amount of the project. Approximately \$25,000 of funds could be used to provide education to homeowners.



Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



## Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Community Development Block Grant (CDBG) Program
  - Environmental Facilities Corporation
  - NYS Energy Research and Development Authority
- Federal Emergency Management Administration's (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration's (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)

## Project Benefits

### ***Risk Reduction Benefits***

The risk reduction benefits that this project will provide include flood damage protection to residents' homes in areas prone to flooding in Madison County, educating residents to ensure their safety and welfare during a flood event, and technical assistance to be able to warn residents in a flood prone area when a flood event may occur.

### ***Economic Benefits***

The cost of a Housing Flood-Proofing Assistance project in Madison County includes operation, maintenance and future replacement costs. There will be economic benefits if these costs are lower than estimated flood damage costs. A cost-benefit analysis for each applicable home would be beneficial to the economic outcome of the project. A public benefit would be to maintain a stable residential tax base.

### ***Health and Social Benefits***

This project will provide flood-proofing assistance to residents in flood prone areas throughout Madison County, providing social benefits by protecting residents' social welfare. The project will provide residents in flood prone areas with educational and technical assistance to prepare for a flood event, providing indirect health benefits by reducing the risk of injury or death in an emergency event such as a flood.

### ***Environmental Benefits***

By reducing the risk of floodwaters entering homes through floodproofing measures, it would be less likely that unclean floodwaters would contaminate homes as well as pick up additional contaminants from home materials and various household items. The risk of mold in homes would also be reduced.



*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Cost-Benefit Analysis**

This project would reduce the risk of flooding of residential neighborhoods resulting in long-term resilient and sustainable benefits. By floodproofing homes, there would be potentially less damages, demolitions, material debris removal and repairs necessary after storm events, thereby providing a cost savings to home owners, municipalities and the County.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Flood-proofing assistance will provide risk reduction to flood damage to residents in flood prone areas in Madison County. Education and technical assistance will prepare residents for a flood event, reducing the risk of injury or death in the case of a flood event.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Provide incentives for elevation or retrofit of homes.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project lead is Madison County.

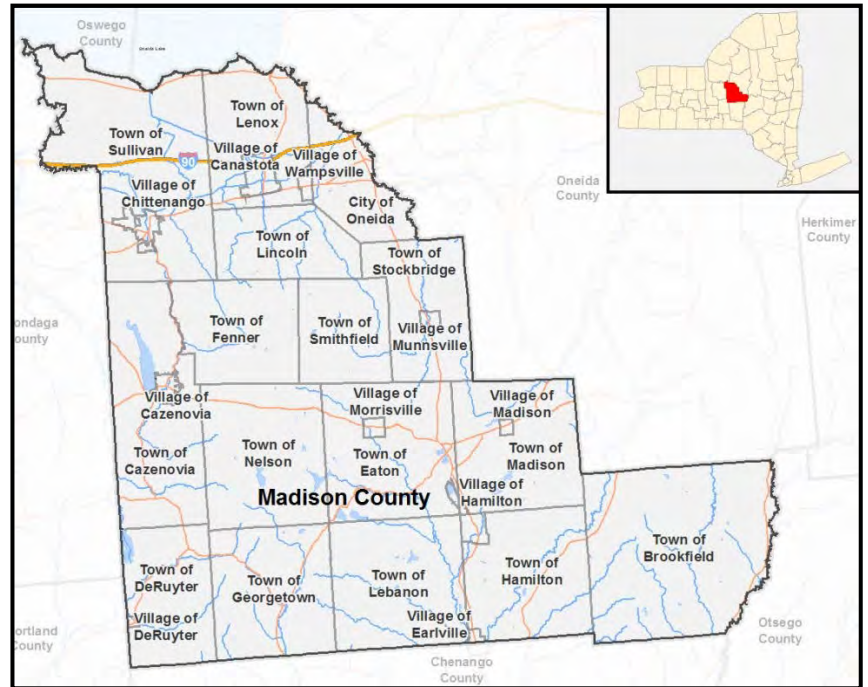




## CULVERT REPAIRS – P6-11, P14-15, P17, P19-20, P22-26, P28-32, P35-36, P44-46 Infrastructure

### Project Description

Substantial flooding and damage was produced from the obstruction and failure of culverts during the summer 2013 flooding. Undersized culverts and bridges become pinch points for water during severe storm events when they are located under roads to allow for vehicular traffic to cross the stream. An undersized or obstructed culvert or bridge impeding water flow can cause the water to rise over the streambanks, flooding adjacent areas causing roadway damages, preventing vehicles from safe travel. Mitigation measures may include hydrologic analysis and engineering analysis to install appropriately sized culverts to handle the water flow during storm events. The following culvert projects have been identified:



Location maps for each project can be found in Additional Materials, Section C

### **P6 – Poolville Road Culvert Repairs**

The flooding resulted in damages to the culvert at Poolville Road (County Route 89), between Smith Road and Hamilton Road. The project will replace the existing 4' concrete pipe with a 16'-2" by 5'-1" aluminum box culvert, 49.5' in length.

### **P7 – Fearon Road Culvert Repair**

The flooding resulted in damages to the culvert at Fearon Road (County Route 47), between Pratts Road and Rocks Road. The project will replace the existing 4' concrete pipe with a 14'-8" by 4'-1" aluminum box culvert, 49.5' in length.



(Source: Madison County)

### **P8 – Dugway Road Culvert Repair**

The flooding resulted in damages to the culvert on Dugway Road (County Route 60) The project will replace the existing pipe arch with a 14'-8" by 4'-1" aluminum box culvert, 81' in length.

### **P9 – Hart Road Culvert Repair**

The flooding resulted in damages to the culvert on Hart Road (County Route 106), just west of South Road. The damaged existing 2' corrugated metal pipe will be replaced with a 48" HDPE pipe with steel end sections, 70 feet in length.

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



**P10 – Reservoir Road Culvert Repair**

The flooding resulted in damages to the culvert at Reservoir Road (County Route 57). The damaged existing 2' corrugated metal pipe will be replaced with a 48" steel reinforced polyethylene (SRPE) pipe with steel end section, 48 feet in length.

**P11 – Skaneateles Turnpike Culvert Repair**

The flooding resulted in damages to the culvert on Skaneateles Turnpike near York Road (County Route 80). The damaged existing 3' corrugated metal pipe will be replaced with a 12'-3" by 4'-5" aluminum box culvert, 49.5' in length.

**P14 – Carey Road Culvert Repair**

Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in debris blocking culverts at Carey Road and damages to homes and the road. This project will replace the two, side by side 60" culverts with a bottomless arch culvert of greater capacity to handle peak flow making it less susceptible to debris blockage.



(Source: Town of DeRuyter)

**P15 – Tallett Road Culvert Repair**

Flooding of the Middle Branch Tioughnioga Creek and an unnamed tributary resulted in damages to Tallett Road and a home. The project will replace two, side by side (24" and 30") culverts with a 71" by 47" galvanized squash pipe culvert, stabilize the channel and install grade stabilization structures.

**P17 – Williams Corners Road Culvert Repairs**

Flooding of the Electric Light Stream resulted in damages to Williams Corners Road including three culverts being washed out, taking the road with it. The road was closed for five weeks and made access to properties difficult. The project will include replacement with single arch culvert to handle flows.

**P19 – Roberts Road Culvert Repair**

The flooding resulted in damages to the culvert at Roberts Road. The project will repair and upgrade the first culvert below Williams Corner Road to handle calculated flow levels.

**P20 – Jones Road Repairs**

Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in damages to Jones Road impeding access for residents. The project will include a culvert repair and improvement along the road.

**P22 – Bonney Road Culvert Upgrade**

Flooding of the Stone Mill Brook resulted in damages to the culvert on Bonney Road. The project will include the repair of this culvert.

**P23 – Williams Road Culvert Repair**

The flooding resulted in damages to the culvert at Williams Road and S. Hamilton Road. The project will replace the existing 10' by 30' culvert with a 14' box culvert and guide rail.

**P24 – Harris Road Culvert Repair**

Flooding of an unnamed tributary to Beaver Creek resulted in damages to the culvert at Harris Road and Moscow Road. The project will replace the existing culvert with a 6' by 30' culvert.

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



**P25 – Borden Road Culvert Repair**

Flooding of an unnamed tributary to the Sangerfield River resulted in damages to the culvert at Borden Road. The project will replace the existing, undersized 30" culvert with a new 4' culvert, 25' in length.

**P26 – Carncross Road Bridge Repair**

Flooding of the South Lebanon Brook resulted in damages to the bridge at Carncross Road/South Lebanon Road and adjacent residences. The project will replace the headwall pipe and poured square boxed culvert pipe with wings of 16 feet.

**P28 – Falin Road Culvert Repair**

The flooding resulted in the blockage of culverts and the flooding of five homes at Falin Road. The project will include replacement of two 2-foot culverts with a single 5' by 7' squash culvert to handle greater capacity and prevent debris build up.

**P29 – Abbert Road Culvert Repair**

Flooding of an unnamed tributary to the Sangerfield River resulted in the wash out of a single 4' by 5' culvert at Abbert Road causing severe damage to the road and adjacent residences and agricultural lands. The project will include replacement of the damaged culvert with a single 5' by 7' squash culvert to handle calculated flows.

**P30 – Jones Road Culvert Repairs**

Runoff from forest land resulted in flooding damages to the culvert at Jones Road at the junction of Old State Road. The project will replace the existing 15" by 50' culvert with a 30" by 50' culvert and replace the existing 24" by 50' culvert with a 36" by 50' culvert.

**P31 – Hughes Road Culvert Repair**

Runoff from higher elevations resulted in flooding damages to the culvert at Hughes Road. The project will replace the existing 15" by 50' culvert with a 24" by 50' culvert.



(Source: Town of DeRuyter)

**P32 – Thomas Road Culvert Repair**

Runoff from higher elevations resulted in flooding damages to the culvert at Thomas Road. The project will replace the existing 18" by 40' culvert with a 30" by 50' culvert.

**P35 – Greene Road Reconstruction**

Flooding resulted in damages to Greene Road. The project will replace the existing 40' by 30" culvert with an 80' by 30" culvert.

**P36 – North Lake Road at Blue Canoe Reconstruction**

Flooding caused damages to North Lake Road as well as multiple homes and businesses. The project will replace the damaged culvert with a 5' by 7' squash culvert to handle calculated flows.

**P44 – Bishop Road Culvert Repair**

The flooding resulted in damages to Bishop Road. The project will replace the existing undersized 30" round culvert with a 42" round culvert.

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



**P45 – Quarry Road Culvert Repair**

Flooding from an unnamed tributary to Blue and Oneida Creeks resulted in damage to the culvert at Quarry Road. The project will replace the existing undersized 24" by 36" rectangular culvert with a 48" round culvert.

**P46 – Haslauer and Cook Road Culvert Repairs**

The flooding resulted in damages to three culverts on Haslauer and Cook Roads. The project will replace the existing undersized culverts with larger culverts to handle the calculated flows.

**Project Location and Estimated Costs**

ID	Project	Location	Costs		
			Design	Construction	TOTAL*
P6	Poolville Road Culvert Repairs	Town of Hamilton: Poolville Road (CR 89)	\$14,000	\$70,000	<b>\$84,000</b>
P7	Fearon Road Culvert Repairs	Town of Eaton: Fearon Road (CR 47)	\$11,000	\$55,000	<b>\$66,000</b>
P8	Dugway Road Culvert Repairs	Town of Nelson: Dugway Road (CR 60)	\$16,800	\$84,000	<b>\$100,800</b>
P9	Hart Road Culvert Repairs	Town of Eaton: Hart Road (CR 106)	\$5,200	\$1,040	<b>\$6,240</b>
P10	Reservoir Road Culvert Repairs	Town of Cazenovia: Reservoir Road (CR 57)	\$1,000	\$5,000	<b>\$6,000</b>
P11	Skaneateles Turnpike Culvert Repair	Town of Brookfield: Skaneateles Turnpike (CR 80)	\$8,600	\$43,000	<b>\$51,600</b>
P14	Carey Road Culvert Repair	Town of DeRuyter: Carey Road	\$24,000	\$120,000	<b>\$144,000</b>
P15	Tallett Road Culvert Repair	Town of DeRuyter: Tallett Road	\$2,773	\$13,867	<b>\$16,640</b>
P17	Williams Corners Road Culvert Repairs	Town of Eaton: Williams Corners Road over Electric Light Stream	\$40,000	\$200,000	<b>\$240,000</b>
P19	Roberts Road Culvert Repair	Town of Eaton: Roberts Road	\$40,000	\$200,000	<b>\$240,000</b>
P20	Jones Road Repair	Town of Georgetown: Jones Road	\$2,000	\$10,000	<b>\$12,000</b>
P22	Bonney Road Culvert Repairs	Town of Georgetown: Bonney Road over Stone Mill Brook	\$3,000	\$15,000	<b>\$18,000</b>
P23	Williams Road Culvert Repair	Town of Hamilton: Williams Road over Pleasant Brook	\$60,000	\$300,000	<b>\$360,000</b>
P24	Harris Road Culvert Repair	Town of Hamilton: Harris Road	\$15,000	\$75,000	<b>\$90,000</b>
P25	Borden Road Culvert Repair	Town of Hamilton: Borden Road	\$2,000	\$10,000	<b>\$12,000</b>
P26	Carncross Road Bridge Repair	Town of Lebanon: Carncross Road/South Lebanon Road over South Lebanon Brook	\$18,659	\$93,294	<b>\$111,953</b>
P28	Falin Road Culvert Repairs	Town of Madison: Falin Road	\$6,000	\$30,000	<b>\$36,000</b>

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



P29	Abbert Road Culvert Repairs	Town of Madison: Abbert Road	\$6,000	\$30,000	<b>\$36,000</b>
P30	Jones Road Culvert Repairs	Town of Nelson: Jones Road over Electric Light Stream	\$3,200	\$16,000	<b>\$19,200</b>
P31	Hughes Road Culvert Repair	Town of Nelson: Hughes Road	\$1,000	\$5,000	<b>\$6,000</b>
P32	Thomas Road Culvert Repair	Town of Nelson: Thomas Road	\$1,600	\$8,000	<b>\$9,600</b>
P35	Greene Road Reconstruction	Town of Nelson: Greene Road over Eaton Brook	\$2,000	\$10,000	<b>\$12,000</b>
P36	North Lake Road at Blue Canoe Reconstruction	Town of Nelson: North Lake Road at Blue Canoe Grill	\$10,000	\$50,000	<b>\$60,000</b>
P44	Bishop Road Culvert Repair	Town of Stockbridge: Bishop Road	\$610	\$3,052	<b>\$3,662</b>
P45	Quarry Road Culvert Repair	Town of Stockbridge: Quarry Road	\$675	\$3,376	<b>\$4,051</b>
P46	Haslauer and Cook Road Culvert Repairs	Town of Stockbridge: Haslauer and Cook Road	\$50,000	\$250,000	<b>\$300,000</b>

*\*All funding requests are for the entire amount of the project.*

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1)</sup>)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

#### Project Benefits

##### **Risk Reduction Benefits**

Properly sized and installed culverts would provide potential flood reduction for residents, businesses and structures located downstream.

##### **Economic Benefits**

Implementation of these projects would result in reduced amounts of damage to adjacent properties and community assets. Fewer costs would be incurred for emergency response and repairs as a result of reduced damages.

##### **Health and Social Benefits**

Properly functioning culverts would prevent infrastructure damage and failure during storm events, allowing residents to safely travel on roadways. The projects would benefit all communities, residents and businesses in service areas, including low to moderate-income neighborhoods.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Environmental Benefits**

Culvert replacements, repairs and improvements will allow for unrestricted flow, potentially reducing streambank erosion and sediment transport in the various creeks and streams throughout Madison County.

### **Cost-Benefit Analysis**

Properly functioning culverts and bridges would benefit the community by decreasing potential flood damages to infrastructure, adjacent land, homes, and businesses and roads and interruptions of traffic flow. Economic benefits will be realized through reduction in damages resulting in cost reduction or diminish repair costs.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Culvert and bridge projects have the ability to decrease the extent and severity of localized flash flooding in communities in Madison County while reducing the risk to stormwater drainage systems and adjacent land from erosion and flooding. Not implementing these projects could keep communities at a greater risk for repeated flooding.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.

### **Project Status**

All of the projects are ready for design and implementation.

### **Anticipated Project Lead**

ID	Project	Anticipated Project Lead
P6	Poolville Road Culvert Repairs	Madison County
P7	Fearon Road Culvert Repairs	Madison County
P8	Dugway Road Culvert Repairs	Madison County
P9	Hart Road Culvert Repairs	Madison County
P10	Reservoir Road Culvert Repairs	Madison County
P11	Skaneateles Turnpike Culvert Repair	Madison County
P14	Carey Road Culvert Repair	Town of DeRuyter
P15	Tallett Road Culvert Repair	Town of DeRuyter
P17	Williams Corners Road Culvert Repairs	Town of Eaton
P19	Roberts Road Culvert Repair	Town of Eaton
P20	Jones Road Repair	Town of Georgetown
P22	Bonney Road Culvert Repairs	Town of Georgetown
P23	Williams Road Culvert Repair	Town of Hamilton
P24	Harris Road Culvert Repair	Town of Hamilton
P25	Borden Road Culvert Repair	Town of Hamilton

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



P26	Carncross Road Bridge Repair	Town of Lebanon
P28	Falin Road Culvert Repairs	Town of Madison
P29	Abbert Road Culvert Repairs	Town of Madison
P30	Jones Road Culvert Repairs	Town of Nelson
P31	Hughes Road Culvert Repair	Town of Nelson
P32	Thomas Road Culvert Repair	Town of Nelson
P35	Greene Road Reconstruction	Town of Nelson
P36	North Lake Road at Blue Canoe Reconstruction	Town of Nelson
P44	Bishop Road Culvert Repair	Town of Stockbridge
P45	Quarry Road Culvert Repair	Town of Stockbridge
P46	Haslauer and Cook Road Culvert Repairs	Town of Stockbridge



*(Source: Madison County)*

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*

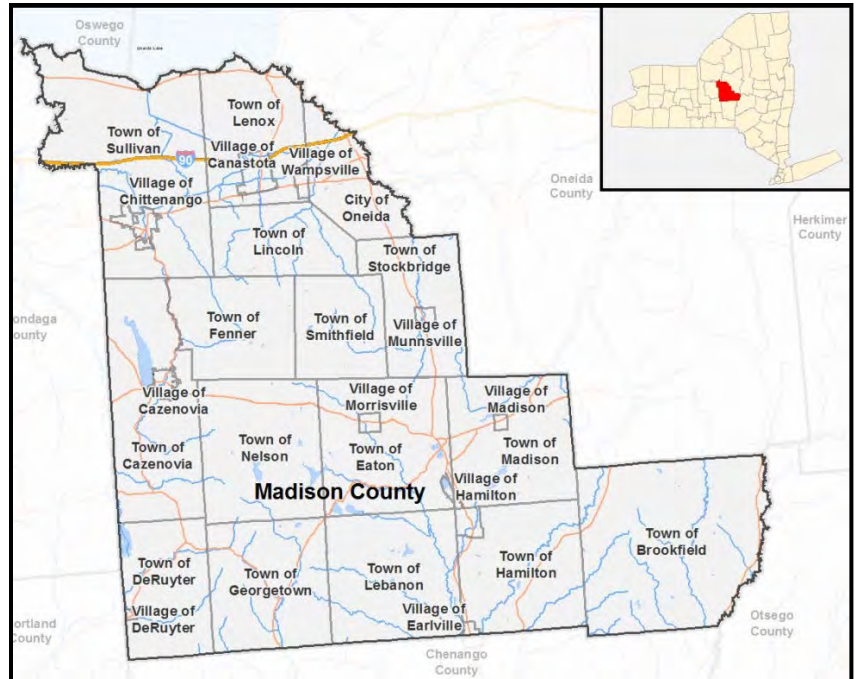


## ROAD RECONSTRUCTION AND IMPROVEMENTS – P2, P3, P13, P27, P33, P34

### Infrastructure

#### Project Description

The summer 2013 event and past events caused widespread flooding and damages to various roadways in Madison County resulting in a need for reconstruction and stabilization measures as well as drainage improvements. Such measures may include pavement and subsurface replacement or rehabilitation, stormwater management features, culvert installations, shoulder and ditch establishment and reshaping and placement of riprap. The following road reconstruction and stabilization projects have been identified:



Location maps for each project can be found in Additional Materials, Section C

#### **P2 – Maple Road Reconstruction**

Maple Road was damaged from flooding that occurred during the summer 2013 storms. This project will involve the reconstruction of approximately 1,000 feet of Maple Road, from State Route 13 west to Lincklaen Road.

#### **P3 – Ridge Road Flood Reconstruction**

The flooding resulted in damages to Ridge Road and the surrounding drainage area. The project will include flood and stormwater mitigation via the installation of storm sewer piping and culverts, and ditch stabilization near the entrance of Cazenovia Lake at Ridge Road and Ten Eyck Avenue.

#### **P13 – South Hill Road Stabilization and Restoration**

Flooding eroded roadside ditches resulting in damages to South Hill Road. The project will include the installation of four catch basins with grates, replacement of 400 feet of culvert pipe and repaving of 0.15 miles along South Hill Road creating an underground closed drainage system.

#### **P27 – Thompson Hill Road Repairs**

The flooding damaged Thompson Hill Road. This project will include approximately 1,500 linear feet of road ditch reshaping and shoulder reestablishment to the bottom of ditch with medium riprap to stabilize the slope. Medium riprap will also be used to ensure better road stability.

#### **P33 – South Hill Road Stabilization**

Runoff from higher elevations resulted in flooding damages to Sunrise Boulevard. The project will enlarge and line 200' of ditch and replace a 24" by 30' culvert with a 30" by 30' culvert.

#### **P34 – Greene Road Reconstruction**

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.





Flooding resulted in damages to North Lake Road. The project will install 650' of 18" culvert with 6 drop basins, pave or riprap bank shoulders, install two concrete headwalls, replace the existing 15" by 100' culvert with a 24" by 100' culvert, and install debris catchers.

### Project Location and Estimated Costs

ID	Project	Location	Costs		
			Design	Construction	TOTAL*
P2	Maple Road Reconstruction	Town of Cazenovia: Maple Road	\$10,000	\$50,000	\$60,000
P3	Ridge Road Flood Reconstruction	Town of Cazenovia: Ridge Road	\$18,156	\$90,781	\$108,937
P13	South Hill Road Stabilization and Restoration	Town of DeRuyter: South Hill Road	\$6,212	\$31,060	\$37,272
P27	Thompson Hill Road Repairs	Town of Lebanon: Thompson Hill Road/River Road	\$13,160	\$65,800	\$78,960
P33	Sunrise Boulevard Reconstruction	Town of Nelson: Sunrise Boulevard	\$2,000	\$10,000	\$12,000
P34	Greene Road Reconstruction	Town of Nelson: Greene Road over Eaton Brook	\$2,000	\$10,000	\$12,000

\*All funding requests are for the entire amount of the project.

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1</sup>)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### Risk Reduction Benefits

These projects would reduce the risk of flooding and degradation to roadways from severe weather events thereby providing safe routes for travel.

#### Economic Benefits

Flood mitigation would be provided to local and regional access routes through implementation of these projects. Reconstruction, stabilization and drainage improvements would provide flood mitigation, protecting important access roads for residents and regional



(Source: Town of DeRuyter)

Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



tourism. Important to the economic strength of the County is the retention of residents and the commercial tax base; this can be achieved through the protection of community assets such as homes and businesses. Additionally, fewer costs would be incurred for emergency response and repairs as a result of reduced damages.

**Health and Social Benefits**

These projects would benefit the entire community by improving roadway safety and reducing roadway flooding. This would provide uninterrupted, safe access throughout the County, including to vital health social service facilities and providers.

**Environmental Benefits**

Roadway and stormwater improvements have the potential to reduce erosion and sediment transport as well as protect public and private property.

**Cost-Benefit Analysis**

Properly functioning roadways would benefit the community by decreasing potential flood damages to infrastructure, adjacent land, homes, and businesses and interruptions of traffic flow. Economic benefits would be realized through uninterrupted access to the County for emergency vehicles and decreased costs for reconstruction and rehabilitation of roadways and facilities after severe weather and flooding.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

**Risk Reduction Analysis**

These projects would decrease flood inundation levels removing the vulnerability and reducing risk related to roadway closure and impeded access.

**Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

**Strategies**

Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.

**Project Status**

All of the projects are ready for design and implementation.

**Anticipated Project Lead**

ID	Project	Anticipated Project Lead
P2	Maple Road Reconstruction	Town of Cazenovia
P3	Ridge Road Flood Reconstruction	Town of Cazenovia
P13	South Hill Road Stabilization and Restoration	Town of DeRuyter
P27	Thompson Hill Road Repairs	Town of Lebanon
P33	Sunrise Boulevard Reconstruction	Town of Nelson
P34	Greene Road Reconstruction	Town of Nelson

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



## P42 – SEALED SANITARY MANHOLES

Infrastructure

### Project Description

The summer of 2013 flooding resulted in an influx of flow to the City of Oneida’s Wastewater Treatment Plan (WWTP) processes, overwhelming the processes. Contaminated floodwater entering the plant created issues with biological processes for treating wastewater. The project will install watertight frames and grates for the identified 67 sanitary sewer manholes located within the 100-year floodplain.



### Project Location

This project includes sanitary manholes located within the 100-year floodplain of the City of Oneida.

### Estimated Project Costs

The estimated cost to design and install the manholes is approximately \$41,400 and the funding request is for the entire amount of the project as follows:

Engineering/Design:	\$6,900
Construction:	\$34,500
<b>Total:</b>	<b>\$41,400</b>

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1)</sup>)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### **Risk Reduction Benefits**

This project would reduce risk and vulnerability and provide additional resiliency for the City of Oneida’s sanitary sewer system.

#### **Economic Benefits**

Implementation of this project would result in reduced amounts of damage to local infrastructure and community assets. Fewer costs would be incurred for emergency response and repairs as a result of reduced damages.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



### Health and Social Benefits

This sanitary sewer project has the potential to reduce the City’s and residents’ exposure to bacteria, viruses, and other germs contained in raw sewage which can result in disease and contamination of homes, making them inhabitable.

### Environmental Benefits

The City of Oneida’s ability to handle the community’s wastewater needs, uninterrupted, and ability to meet regulatory requirements would be improved. Protection of the sanitary sewer system would also reduce the risk of exposure to bacteria, viruses, and other germs contained in raw sewage which can result in disease and contamination.

### Cost-Benefit Analysis

Improvements to public infrastructure such as the sanitary sewer system would enhance community resiliency during future storm events and flooding, thus providing protection of the City’s assets and safety to its residents. Properly functioning and protected sewer systems would benefit the community by providing services essential for daily activities while reducing the risk of damage, contamination and disease. Economic benefits would be realized through reduction in damages resulting in diminished rehabilitation and repair costs.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### Risk Reduction Analysis

This project would reduce the risk of sewer overflow during storm events. By providing properly controlled and treated sanitary sewage, the risk to public health, residents and communities would be reduced.

### Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

### Strategies

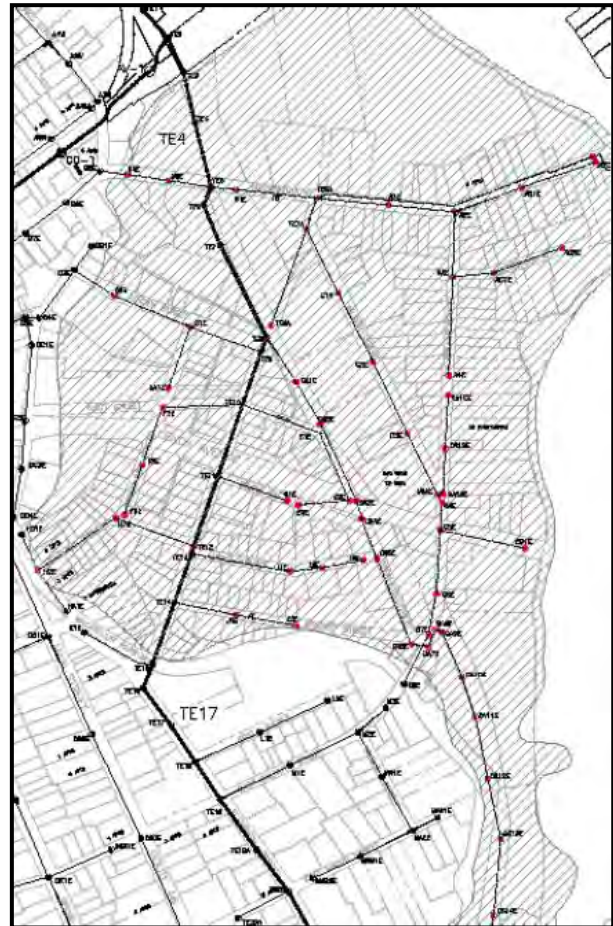
Reduce vulnerability of existing infrastructure assets and critical facilities from flood damage through repair, improvements and protection.

### Project Status

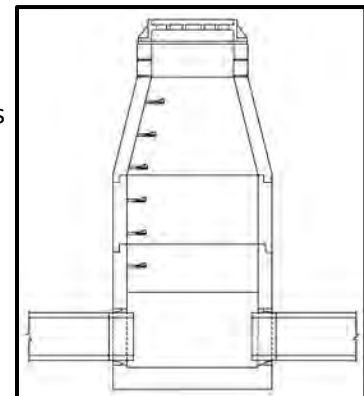
All of the projects are ready for design and implementation.

### Anticipated Project Lead

The anticipated project lead is the City of Oneida.



Manhole locations



Example manhole detail

Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



## R17 – COUNTYWIDE INFRASTRUCTURE INVENTORY AND MAPPING

### Infrastructure

#### Project Description

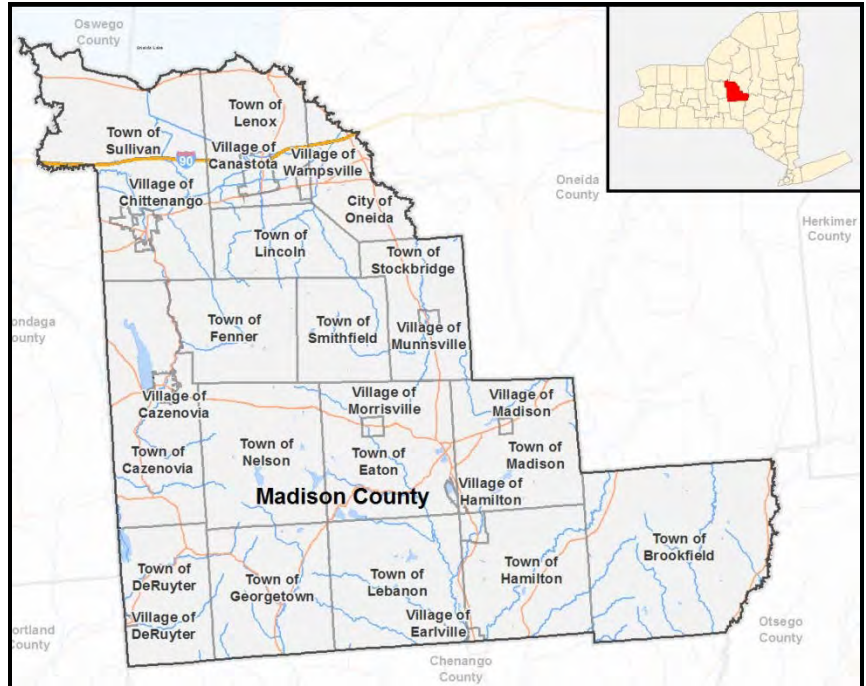
This project will inventory and document the type, location and condition of key infrastructure throughout the County. This digital inventory and mapping exercise would assist local communities in future planning efforts and also during emergency events to know where infrastructure is located. It is envisioned this project would have a GIS mapping component allowing for easy database and mapping maintenance. This project would serve as a valuable asset management tool to improve future planning and resiliency efforts in Madison County.

#### Project Location

This project is a countywide project in Madison County.

#### Estimated Project Costs

The estimated cost to gather data and create mapping is approximately **\$300,000** and the funding request is for the entire amount of the project. This would also cover staff costs or hiring outside assistance to provide data that can be incorporated into the County’s GIS system.



#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. )
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

#### Project Benefits

##### Risk Reduction Benefits

The project would reduce risk of damage to assets by providing a comprehensive infrastructure inventory with data for Madison County to utilize for regular maintenance and in emergency events such as severe storms and floods. This project would also be vital in reducing the risk of death or injury to residents, travelers and personnel during an emergency event.

Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



### **Economic Benefits**

A project to record, inventory and map key infrastructure throughout Madison County would economically benefit the communities throughout Madison County by helping to efficiently locate infrastructure and easily identify size, material and condition. This would aid in the allocation of funding for repairs, replacement, and maintenance of aging infrastructure which is vital to the Community's economy.

### **Health and Social Benefits**

The project would provide valuable infrastructure information to Madison County and its municipalities enabling better service to its residents before, during and after severe weather events. The inventory would potentially prevent injury or death to people in the case of an emergency event. The information will also stimulate social awareness of key infrastructure within the communities of Madison County.

### **Cost-Benefit Analysis**

This project would save time and resources when locating, assessing and repairing infrastructure throughout the County, thereby providing significant cost savings. County and local personnel and emergency responders will have the resources necessary to provide their vital services efficiently and accurately. Post storm damages would likely be diminished and where repairs are warranted they could be done a cost efficient manner.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

By documenting, inventorying, and mapping key infrastructures the County and its municipalities would be able to make informed decisions and plans that could greatly reduce the risk of injury or death to people during emergency events. This valuable asset management tool would reduce the risk of damage and economic loss to vital infrastructure assets in the County.



*(Source: Town of DeRuyter)*

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Identify location of key infrastructure and upgrade to accommodate current and future conditions.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are the Madison County Planning Department and Highway Department.

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# R18 – COUNTYWIDE STORMWATER MANAGEMENT PLAN

## Infrastructure

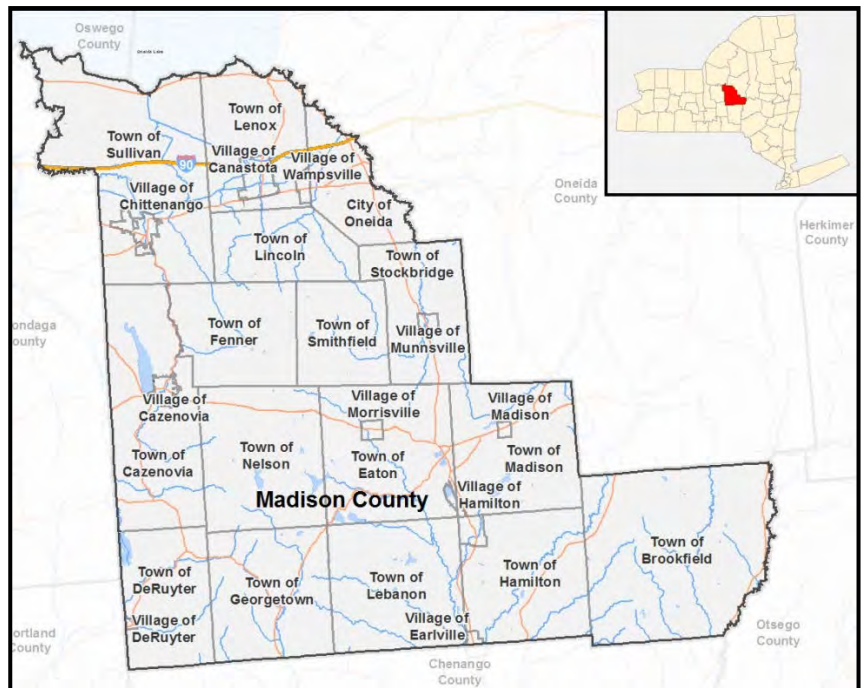
### Project Description

This project would prepare a countywide stormwater management plan for extreme and high risk areas that are not included in a small municipal stormwater sewer system (MS4). MS4's that are located within the boundaries of a Census Bureau defined "urbanized area" are regulated under EPA's Phase II Stormwater Rule and are required to develop a stormwater management program that will reduce the amount of pollutants carried by stormwater during storm events.<sup>iv</sup> This plan may identify green infrastructure alternatives that assist in managing stormwater. Education and outreach would be included in this plan. This project will include a pilot project in the Village of Cazenovia which could be applied to hamlets and villages throughout the County.

Stormwater is water from rain or melting snow that does not permeate into the ground but runs off into waterways.<sup>v</sup> Runoff flows from rooftops, over paved areas and bare soil, and through sloped lawns while picking up a variety of materials on its way.<sup>v</sup> According to an inventory conducted by the United States Environmental Protection Agency (EPA), half of the impaired waterways are affected by urban/suburban and construction sources of stormwater runoff.<sup>v</sup> Ways to reduce stormwater runoff and thereby mitigate flooding include reducing impervious cover, slowing the rate of runoff, and promoting infiltration. Stormwater projects may relate to culverts, swales, storm sewers and stormwater systems, best management practices (BMPs) and green infrastructure practices.

Green infrastructure practices maintain or restore stormwater's natural flow pattern by allowing the water to slowly permeate into the ground and be used by plants.<sup>vi</sup> Unlike single-purpose gray stormwater infrastructure, which uses pipes to dispose of rainwater, green infrastructure uses vegetation and soil to manage rainwater where it falls.<sup>vii</sup> These practices include rain gardens, bioretention areas, vegetated swales, green roofs and porous pavements. Green infrastructure also includes preserving or restoring natural areas, such as forests, stream buffers and wetlands, and reducing the size of paved surfaces.<sup>vi</sup>

The Plan will identify and analyze existing stormwater patterns and infrastructure, and evaluate what occurs and what issues arise during storm events. The Plan would support implementation of several vital protection projects through both traditional and green infrastructure measures, making the entire County more resilient.



Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



### Project Location

This project is a countywide project in Madison County.

### Estimated Project Costs

The estimated cost prepare the stormwater management plan is approximately **\$250,000** and the funding request is for the entire amount of the project.

### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1</sup>)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### **Risk Reduction Benefits**

The implementation of a stormwater management plan would reduce the risk of flooding caused by storm events. This would greatly benefit the County by protecting its assets, property, infrastructure and agricultural land from floodwater damage and destruction.

#### **Economic Benefits**

A countywide stormwater management plan and implementation that incorporates green infrastructure practices would reduce the risk of flood damage to assets, property, infrastructure and agricultural land thereby reducing expenditures by the County and its municipalities. Mitigating stormwater related issues and flooding will aid to retain and encourage residents and businesses, which are vital to the economic tax base.

#### **Health and Social Benefits**

Stormwater management improvements would benefit the entire County by minimizing flooding along roadways, especially those which connect residents to emergency, health and social services. Additionally, vulnerable populations would benefit from improving access for emergency responders. Stormwater management would include green infrastructure which is known to improve the aesthetics, air quality, and temperature of an area thereby improving the health and wellbeing of residents. Green infrastructure may also provide comfortable shaded areas for people to picnic and converse socially.



*Example of a rain garden and stormwater drainage at the Kingston Library. (Source: NYS DEC)*

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*





### **Environmental Benefits**

By evaluating the stormwater management throughout the County, including runoff and storm flow characteristics of watersheds, proper future mitigation planning and implementation would be supported. Stormwater projects would result in reduced runoff, flooding, erosion, habitat destruction, and contamination in streams. In addition to managing stormwater, green infrastructure projects would recharge groundwater, provide wildlife habitat, beautify neighborhoods, cool urbanized areas, improve air quality and reduce stress on combined sewer systems.<sup>vi</sup>

### **Cost-Benefit Analysis**

Stormwater management improvements would enhance community resilience during future storm events and flooding, thus providing protection of the County's assets and safety to its residents. A countywide stormwater management plan would benefit the community by decreasing potential flood damages to infrastructure, adjacent land, homes, businesses and roads and interruption of traffic flow. Utilizing green infrastructure practices would result in environmental benefits like reduced erosion and runoff rates and higher quality stormwater discharge. With proper design, green infrastructure can provide more benefits at lesser costs than single-purpose gray infrastructure.<sup>viii</sup> Economic benefits would be realized through reduction in damages resulting in diminished repair costs.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Stormwater management and green infrastructure have the ability to decrease the extent and severity of localized flash flooding throughout Madison County while reducing the risk to drainage systems and adjacent land from erosion and flooding. The project will also reduce the risk of flood damage to assets, property, infrastructure, and agricultural land by controlling the flow of excess stormwater with strategically placed green infrastructure that has a high saturation and retention capacity of infiltrating stormwaters. Not implementing this project could keep communities at a greater risk for repeated flooding.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Identify location of key infrastructure and upgrade to accommodate current and future conditions.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project leads are the Madison County Planning Department and the Madison County Highway Department.



*(Source: Madison County)*

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*

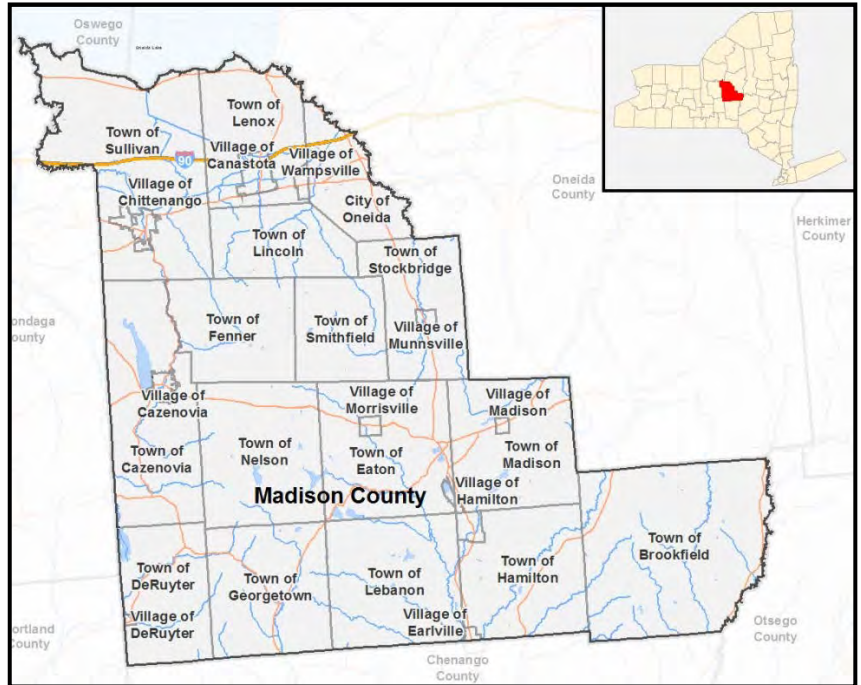


## STREAMBANK STABILIZATION AND RESTORATION – P1, P16, P18, P21, P43

*Natural and Cultural Resources*

### Project Description

The summer 2013 event and past storm events caused widespread flooding, resulting in stream bank and streambed erosion as well as debris and sediment obstruction of waterways in Madison County. Projects within this grouping focus on streambank stabilization with the objective of preventing additional erosion and promoting natural channel flow. Implementation of the restoration measures will protect streambanks from future storms and improve functionality of natural drainage systems. Physical measures will be implemented to improve the health of the streams and the resiliency of the stream corridors.



*Location maps for each project can be found in Additional Materials, Section C*

### **P1 – Town of Brookfield Streambank Stabilization and Restoration**

The storms resulted in the floodwaters overtopping streambanks in the Town of Brookfield, severely eroding and washing out areas. This project will reestablish approximately 1,000 linear feet of eroded and washed out streambank and install channel lining rock and check dams. The Town Highway Department will perform the construction, keeping the costs low.

### **P16 – Carey Road Streambank Stabilization and Restoration**

Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in damages to Carey Road and adjacent homes. The road was closed for five days. The project will include 200 linear feet of bank stabilization utilizing pinned riprap and replacement guide rails along Carey Road.



*(Source: Town of DeRuyter)*

### **P18 – Route 20 Flooding Remediation**

Flooding of an unnamed tributary to the Chenango River in the Town of DeRuyter resulted in damages to eight homes and businesses as well as Route 20. Lane closures were needed on Route 20, impeding traffic flow. The project will clean out and reshape approximately 300 linear feet of stream channel coming into Village of Morrisville to handle the flow of a 100-year storm.

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



**P21 – Bronder Hollow Road Bank Stabilization and Restoration**

Flooding of the adjacent Muller Brook resulted in damages to Bronder Hollow Road in the Town of Georgetown. The project will restore and improve eroded and washed out areas through stabilization of the bank of Muller Brook for approximately 100 linear feet.

**P43 – Maxwell Field Streambank Stabilization and Restoration**

Flooding of the Oneida Creek resulted in erosion, wash outs and damages to the Oneida Creek streambank along Maxwell field in the City of Oneida. This project will repair, reestablish and stabilize approximately 485 linear feet of streambank through placement of riprap and geotextile.

**Project Location and Estimated Costs**

ID	Project	Location	Costs		
			Design	Construction	TOTAL*
P1	Streambank Stabilization and Restoration	Town of Brookfield: Mill Creek and unnamed streams	\$20,000	\$100,000	<b>\$120,000</b>
P16	Carey Road Streambank Stabilization and Restoration	Town of DeRuyter: Unnamed tributary/Carey Road	\$18,280	\$91,400	<b>\$109,680</b>
P18	Route 20 Flooding Remediation	Town of Eaton: Main Street (Rt 20)/ Chenango River	\$7,000	\$35,000	<b>\$42,000</b>
P21	Bronder Hollow Road Bank Stabilization and Restoration	Town of Georgetown: Muller Brook/Bronder Hollow Road	\$3,000	\$15,000	<b>\$18,000</b>
P43	Maxwell Field Streambank Stabilization and Restoration	City of Oneida: Oneida Creek at Maxwell Field	\$8,000	\$40,000	<b>\$48,000</b>

*\*All funding requests are for the entire amount of the project.*

**Potential Funding Sources**

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1</sup>)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



## Project Benefits

### ***Risk Reduction Benefits***

Streambank stabilization and restoration would reduce the impacts and damages of floodwaters during storm events. These projects would promote the flow of water into the natural stream channels and floodplains, minimizing the risk of floodwaters damaging adjacent land, homes and other assets.

### ***Economic Benefits***

Implementation of these projects would result in reduced amounts of damage to adjacent properties and community assets. Fewer costs would be incurred for emergency response and repairs as a result of reduced damages. Long-term protection of municipal assets, such as businesses and homes, is crucial to the economic strength of communities in the commercial tax base and retention of residents.

### ***Environmental Benefits***

Creek improvements such as streambank stabilization and restoration have the potential to reduce streambank erosion and sediment transport in the creeks and streams throughout Madison County. Stream restoration would also stabilize the biological components such as adjacent wetlands, flora/fauna, and habitats which comprise the stream making it more resilient and sustainable. Additional environmental benefits could include wetland creation and rehabilitation with flood attenuation, natural stream channel restoration and floodplain improvements and a potential reduction of contamination.

### ***Health and Social Benefits***

Properly functioning streams would prevent land and infrastructure damage and failure during storm events, allowing residents to safely travel on roadways. The project would benefit the Community's residents and businesses, including low to moderate-income neighborhoods, by minimizing roadway flooding which will improve access by emergency service workers and access to health and social service facilities. With emergency response time during and after storm events being improved, the risk of injury to residents would be reduced.



*Streambank erosion adjacent to Maxwell Field*

## Cost-Benefit Analysis

The goal of these projects is to mitigate flooding long term along stream corridors, increasing resiliency and sustainability. The anticipated functional life of flood mitigation measures is a period of 10 to 20 years. Flood mitigation would help improve access for emergency services, reduce potential damage at

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



various local facilities, and reduce the cost of reconstruction and rehabilitation after storm events. It is anticipated these improvements would provide significant savings in municipal expenditures.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### Risk Reduction Analysis

These projects would reduce the risk of damage to the Community’s assets and amenities by restoring streambanks and flow paths and incorporating flood-resistant designs.

Stream banks which are not stabilized can contribute to excessive sediment in waterways and consequently, blockages, water pattern flow changes, and a capacity reduction. The risk to and hazard exposure of nearby assets will be decreased as a result of these projects increasing the stream channels’ ability to handle water flow. Critical assets and facilities in Madison County such as emergency shelters and services, medical facilities, infrastructure, and schools (many of which serve socially vulnerable populations) which are located near waterways would be at a lesser risk to flooding with the implementation of these restoration projects.

### Timeframe for Implementation

The timeframe for implementation is near term, 0-18 months.

### Strategies

Stabilize stream banks that are severely eroded or at high risk of collapse.

### Project Status

All of the projects are ready for design and implementation.

### Anticipated Project Lead

ID	Project	Anticipated Project Lead
P1	Streambank Stabilization and Restoration	Town of Brookfield
P16	Carey Road Streambank Stabilization and Restoration	Town of DeRuyter
P18	Route 20 Flooding Remediation	Town of Eaton
P21	Bronder Hollow Road Bank Stabilization and Restoration	Town of Georgetown
P43	Maxwell Field Streambank Stabilization and Restoration	City of Oneida

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*

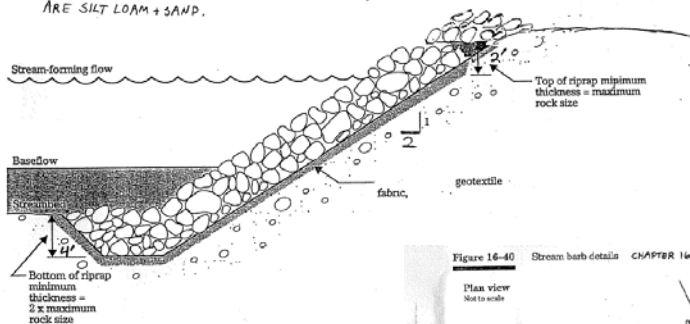


## Maxwell Field Streambank Stabilization (P43) Drawings

Figure 16-32 Rock riprap details, CHAPTER 16 EFH

Cross section  
Not to scale

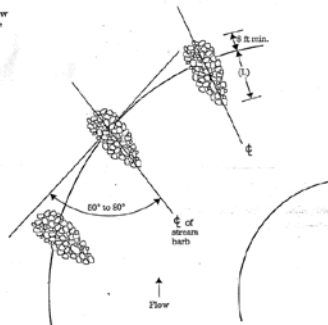
NOTE: DUE TO SOIL TYPE AND FREQUENT BANK FULL EVENTS RIP RAP WILL BE INSTALLED TO TOP OF BANK. EXISTING CHANNEL BOTTOM IS GRAVEL, BANKS ARE SILT LOAM + SAND.



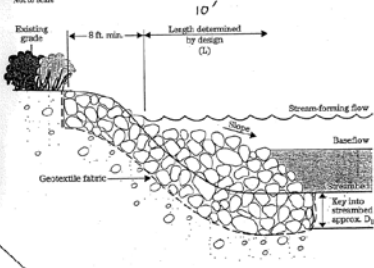
All graphics and drawings provided by the City of Oneida

Figure 16-40 Stream barb details CHAPTER 16 ENGINEERING FIELD HANDBOOK

Plan view  
Not to scale



Cross section  
Not to scale

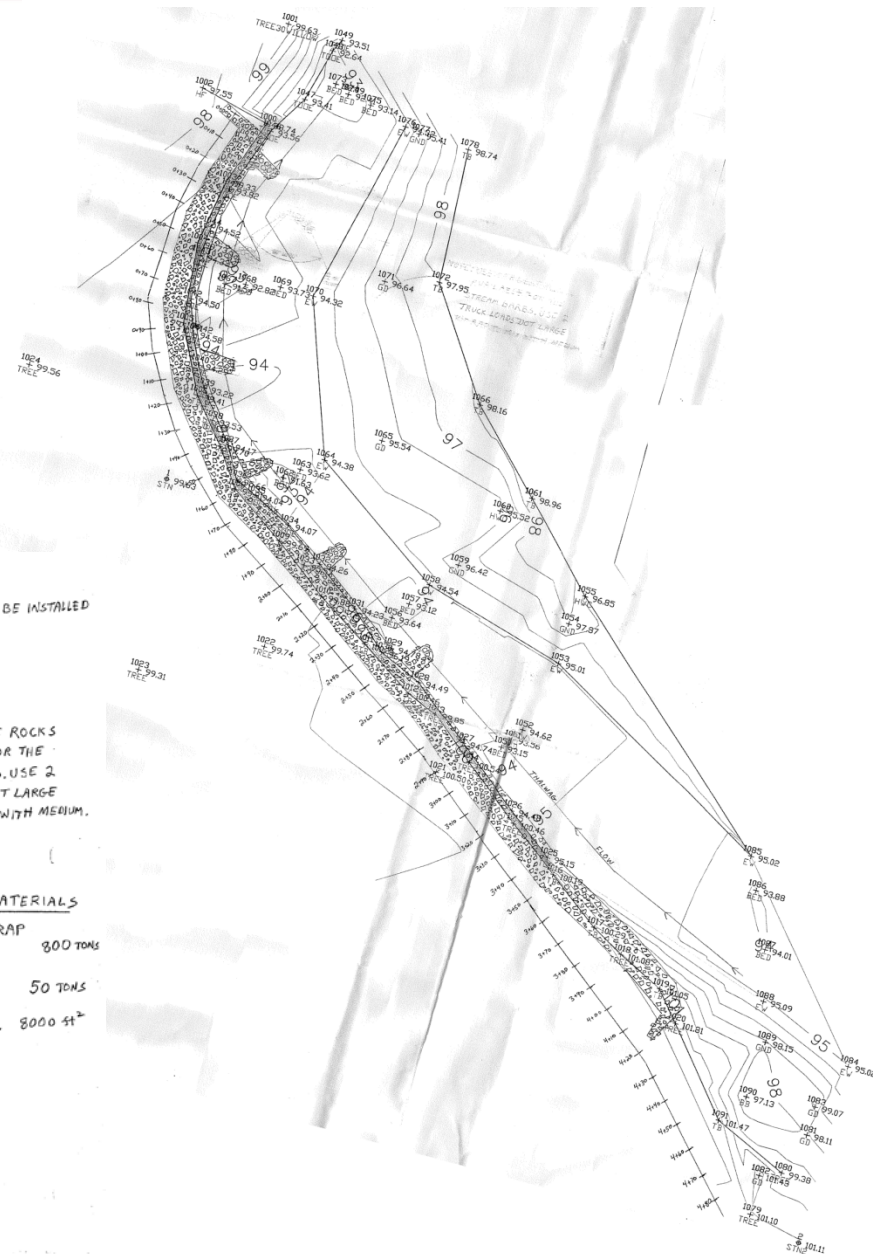


6 STREAM BARBS TO BE INSTALLED  
AT  
0+10  
0+50  
1+05  
1+55  
2+00  
2+55

NOTE: USE LARGEST ROCKS AVAILABLE FOR THE STREAM BARBS. USE 2 TRUCK LOADS DOT LARGE RIPRAP TO MIX WITH MEDIUM.

### ESTIMATED MATERIALS

DOT MEDIUM RIP-RAP  
10" - 24" GRADATION 300 TONS  
DOT LARGE 50 TONS  
GEOTEXTILE FABRIC 8000 ft<sup>2</sup>



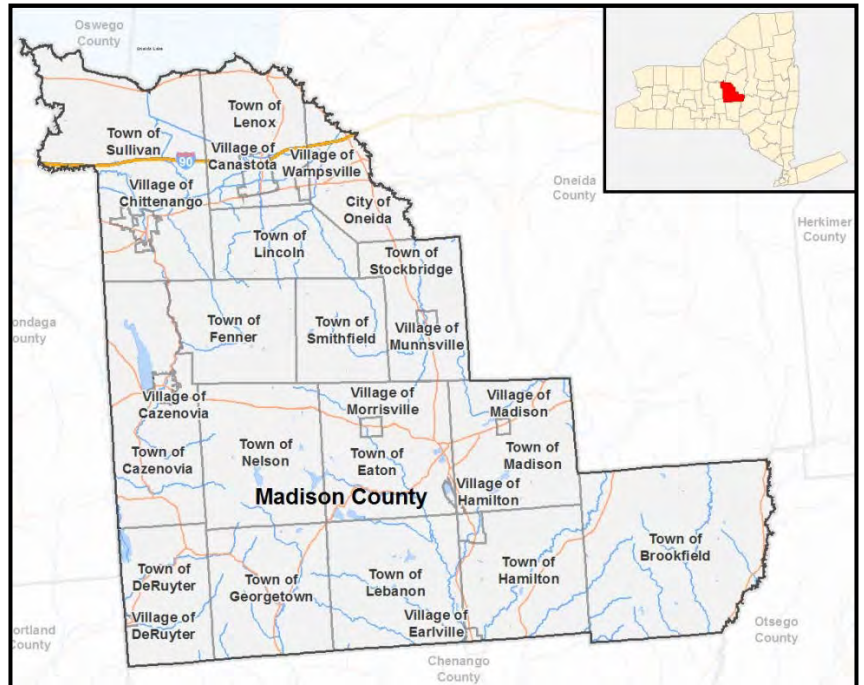


## STREAM DEBRIS REMOVAL – P4, P47

Natural and Cultural Resources

### Project Description

The summer 2013 event and past events caused widespread flooding, resulting in a buildup of stream debris including logjams. These projects will identify stream debris such as large sediment deposits and woody debris that will cause future flooding, significant alteration to stream dynamics or further damage to adjacent lands and infrastructure during future flooding events. Removal of these obstructions will restore proper water flow and channel alignment. Work may include bank stabilization where necessary.



Location maps for each project can be found in Additional Materials, Section C

#### P4 – Stream Debris Removal

The damage from the summer of 2013 storms resulted in the accumulation of debris and sediment in waterways throughout Madison County causing obstructed stream flow and jams. This project will identify those locations as well as remove the debris, restoring a clear flow path.

#### P47 – Logjam Clearings

Flooding carried and distributed woody debris causing jams along the Chittenango Creek corridor. The project will remove debris and log jams from approximately 10 miles of the creek extending from south of Chittenango to Oneida Lake.



(Source: Town of DeRuyter)

### Project Location and Estimated Costs

ID	Project	Location	Costs		
			Design	Construction	TOTAL*
P4	Countywide Stream Debris Removal	Madison County: Major streams such as Oneida Creek, Chenango River, Chittenango Creek and Unadilla River as well as smaller tributaries.	\$10,000	\$50,000	<b>\$60,000</b>
P47	Chittenango Creek Logjam Clearings	Town of Sullivan: Chittenango Creek, Oneida Lake to south of Chittenango Village	\$6,000	\$30,000	<b>\$36,000</b>

\*All funding requests are for the entire amount of the project.

Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application. <sup>1)</sup>)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

### Project Benefits

#### ***Risk Reduction Benefits***

By removing built up debris in streams the natural flow path and channel, capacity will be restored, thereby reducing the risk of future flooding, erosion, damage to infrastructure such as downtown bridges and culverts and damage to adjacent assets.

#### ***Economic Benefits***

Implementation of these projects would result in reduced amounts of damage to adjacent properties and community assets. Fewer costs would be incurred for emergency response and repairs as a result of reduced damages.

#### ***Environmental Benefits***

Woody debris and sediment removal will restore natural flow paths and stream capacity, reducing streambank erosion and sediment transport in creeks and streams. These projects would also improve the health of the streams and the resiliency of the stream corridors by stabilizing biological components such as adjacent wetlands, flora/fauna, and habitats which comprise the stream.

#### ***Health and Social Benefits***

Unobstructed flow of streams and creeks would prevent land and infrastructure damage and failure during storm events which would also allow for safe travel on roadways. Projects would benefit all communities, residents and businesses in adjacent and downstream areas, including low to moderate-income neighborhoods.

### Cost-Benefit Analysis

Properly functioning streams and creeks would benefit the community by decreasing potential flood damages to infrastructure, adjacent land, homes, and businesses and roadways. Economic benefits would be realized through a reduction in damages resulting in decreased costs repair costs.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### Risk Reduction Analysis

Debris and excessive sediment in waterways lead to blockages, water pattern flow changes, and a capacity reduction. The risk to and hazard exposure of nearby assets will be decreased as a result of these projects increasing the stream channels’ ability to handle water flow. Critical assets and facilities in the County such as emergency shelters and services, medical facilities, infrastructure, and schools

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*





(many of which serve socially vulnerable populations) which are located near waterways would be at a lesser risk to flooding with the implementation of these restoration projects.

#### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

#### **Strategies**

Restore and expand stream capacity by removing debris and sediment from floodwaters.

#### **Project Status**

All of the projects are ready for design and implementation.

#### **Anticipated Project Lead**

ID	Project	Anticipated Project Lead
P4	Stream Debris Removal	Madison County
P47	Logjam Clearing	Town of Sullivan

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



## R19 – COUNTYWIDE STREAM MAINTENANCE PROGRAM

*Natural and Cultural Resources*

### Project Description

Many streams and tributaries in the County are in need of annual maintenance. Past experience has demonstrated that a lack of stream maintenance has led to log jams, silt and sediment deposition, erosion, and streambank and bed degradation thereby creating unnecessary flooding. This project would establish an annual maintenance program and include a dedicated staff person to implement the program.

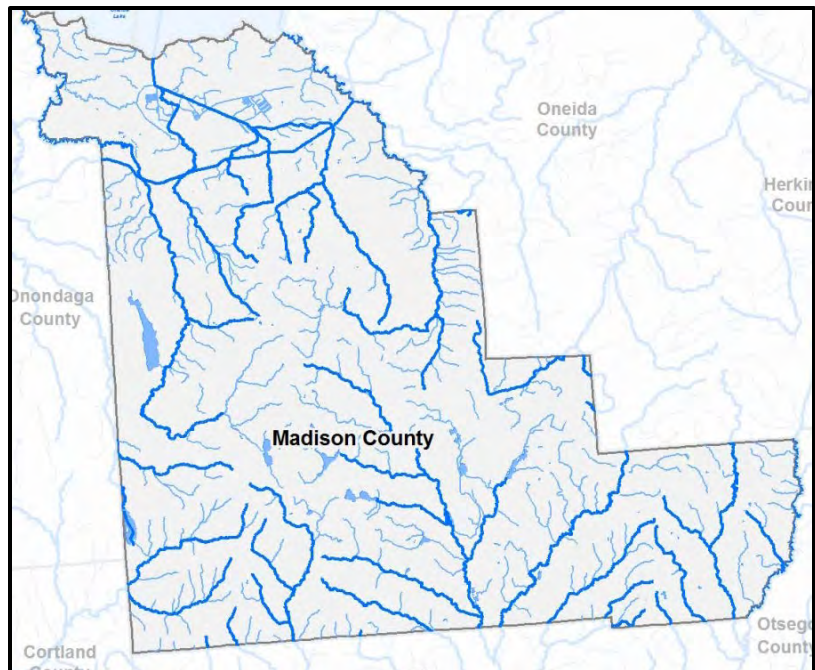
Stream maintenance measures would remove stream debris such as large sediment deposits and woody debris that will cause future flooding, significant alteration to stream dynamics or further damage to adjacent lands and infrastructure during future flooding events. Removal of these obstructions will restore proper water flow and channel alignment. Maintenance measures may also include streambank stabilization with the objective of preventing additional erosion and promoting natural channel flow. This will protect streambanks from future storms and improve functionality of natural drainage systems. These maintenance measures would improve the health of the streams and the resiliency of the stream corridors.

### Project Location

This project is a countywide project in Madison County.

### Estimated Project Costs

The estimated cost for 3-year maintenance program and to support a staff person for implementation is approximately **\$225,000** (\$75,000 per year) and the funding request is for the entire amount of the project.



### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - Environmental Facilities Corporation – Green Innovation Grant Program
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



## Project Benefits

### ***Risk Reduction Benefits***

By removing built up debris in streams the natural flow path and channel, capacity will be restored, thereby reducing the risk of future flooding, erosion, damage to infrastructure like downtown bridges and culverts and damage to adjacent assets. Streambank stabilization and restoration would reduce the impact and damage of floodwaters during storm events. It would also promote the flow of water into the natural stream channels and floodplains, minimizing the risk of floodwaters damaging adjacent land, homes and other assets.

### ***Economic Benefits***

This project would result in a reduced amount of damage to adjacent properties and community assets. Fewer costs would be incurred for emergency response and repairs as a result of reduced damage. Long-term protection of municipal assets, such as businesses and homes, is crucial to the economic strength of communities in the commercial tax base and retention of residents.

### ***Environmental Benefits***

Stream maintenance, such as woody debris and sediment removal and stream restoration, would restore the streams' natural flow paths and capacity, reducing streambank erosion and sediment transport in creeks and streams. This project would also improve the health of the streams and the resiliency of the stream corridors by stabilizing biological components such as adjacent wetlands, flora/fauna, and habitats which comprise the stream. Additional environmental benefits could include wetland creation and rehabilitation with flood attenuation and floodplain improvements and a potential reduction of contamination.

### ***Health and Social Benefits***

Properly functioning streams would prevent land and infrastructure damage and failure during storm events, allowing residents to safely travel on roadways. The project would benefit the Community's residents and businesses, including low to moderate-income neighborhoods, by minimizing roadway flooding which will improve access by emergency service workers and access to health and social service facilities. With emergency response time during and after storm events being improved, the risk of injury to residents would be reduced.



*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Cost-Benefit Analysis**

The goal of this project is to mitigate flooding long term along stream corridors, increasing resiliency and sustainability. Flood mitigation would help improve access for emergency services, reduce potential damage at various local facilities, and reduce the cost of reconstruction and rehabilitation after storm events. Economic benefits would be realized through a reduction in damages resulting in decreased costs repair costs. It is anticipated that these improvements would provide significant savings in municipal expenditures.

The potential benefits of these projects are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Unstable streambanks and debris and excessive sediment in waterways lead to blockages, water pattern flow changes, and a capacity reduction. The risk to and hazard exposure of nearby assets would be decreased as a result of this project increasing the stream channels' ability to handle water flow. Critical assets and facilities in the County such as emergency shelters and services, medical facilities, infrastructure, and schools (many of which serve socially vulnerable populations) which are located near waterways would be at a lesser risk to flooding with the implementation of these restoration projects.

The study and implementation of flood management measures would reduce risk to Madison County communities by executing coordinated permanent flood mitigation measures throughout stream corridors. This project would reduce risk to Madison County communities by executing coordinated permanent flood mitigation measures throughout stream corridors.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Mitigate stormwater runoff that leads to erosion and flash flooding of creeks on a regional basis and reconnect the floodplain.

Restore and expand stream capacity by removing debris and sediment from floodwaters.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project lead is the Madison County Planning Department and the Madison County Highway Department.



## R20 – COUNTYWIDE FLOOD MITIGATION INITIATIVE

### Natural and Cultural Resources

#### Project Description

This project would establish a countywide initiative to build resilience through specific projects. This initiative will include two components to start:

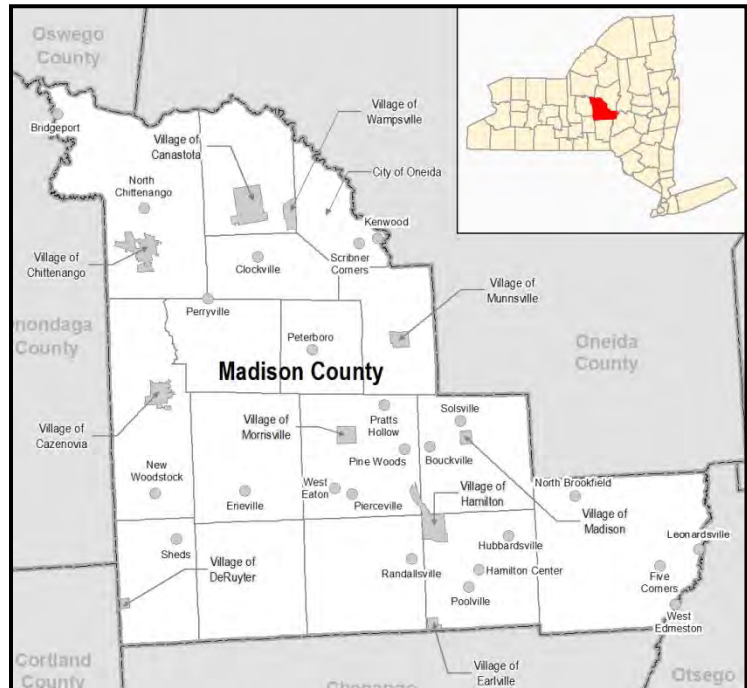
1. Watershed modeling to create a baseline hydrologic model (HEC-RAS and geomorphic analysis) and
2. An identification of natural and manmade infrastructure practices for implementation in high and extreme risk areas. A case study involving a flood retention project in Leonardsville would be examined as an example project. This case study would identify appropriate flood mitigation practices that could be implemented and may include preliminary design and engineering.

#### Project Location

The project is a countywide project in Madison County.

#### Estimated Project Costs

The estimated cost to complete the two components is approximately **\$1 million** and the funding request is for the entire amount of the project.



#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

#### Project Benefits

##### Risk Reduction Benefits

Reducing the risk of floodwaters would greatly benefit communities that lie in high and extreme risk areas in Madison County including the Hamlet of Leonardsville by protecting their valuable assets, property, infrastructure and agricultural land. A flood retention area upstream from community

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*



centers would greatly reduce the risk of floodwaters caused by storm events protecting the community's economic vitality and livelihood. Similar projects involving natural and manmade infrastructure designed and placed with hydrologic modeling will have analogous risk reduction benefits in communities throughout Madison County.

#### ***Economic Benefits***

Countywide flood mitigation measures, such as a flood retention project in the Hamlet of Leonardsville, would have economic benefits as a result of reduced flood damage to assets, property, infrastructure, and agricultural land. The Leonardsville case study would establish the economic benefits that would result in other projects with similar approaches throughout Madison County.

#### ***Health and Social Benefits***

Projects that include natural infrastructure such as a flood retention basin may improve outdoor recreational opportunities for people, which could increase healthy and social outdoor activities. Improved water quality may also benefit the health of fish and wildlife in the area.

#### ***Environmental Benefits***

Projects that include natural infrastructure such as flood retention basins have many environmental benefits including wetland creation and restoration, and improved wildlife habitat. Projects could also improve outdoor recreational opportunities for residents as well as improve the water quality.

### **Cost-Benefit Analysis**

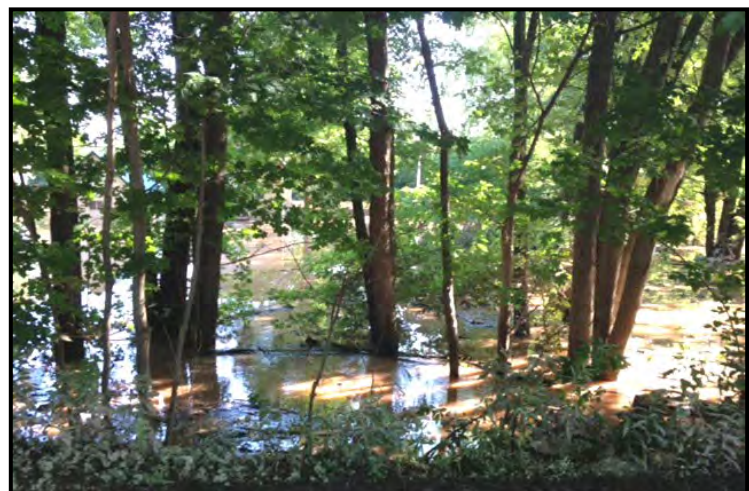
A Countywide Flood Mitigation Initiative would build and strengthen resiliency in Madison County and the communities which comprise it. Watershed modeling would identify and allow for a comprehensive understanding of the critical areas affected by flooding. From this, specific projects would be developed to mitigate the flooding issues. The knowledge gained from this project would be invaluable, ultimately making the County significantly more resilient to flooding and severe weather events. This would lead to a long term reduction in costs incurred by residents and a reduction in municipal expenditures due to decreased damages and repairs.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.

### **Risk Reduction Analysis**

Floodwater damage can be devastating to communities – destroying assets, property, infrastructure and agricultural land. It is imperative for communities at risk, such as Leonardsville, to implement projects to reduce the risk of floodwater damage to protect the resiliency and vitality of the community.

As an example project, the creation of a flood retention area upstream from the Hamlet of Leonardsville would reduce the risk of floodwaters during storm events. Flood retention areas allow for excess waters to infiltrate and saturate the area.



*(Source: Madison County)*

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These waters would be retained or slowed as they pass through the retention area allowing for a steady manageable stream flow. Floodwater retention areas also naturally filter stream waters as they slowly pass through, improving the quality of the water. Similar projects throughout Madison County will have analogous risk reduction as the case study of Leonardsville.

#### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

#### **Strategies**

Mitigate stormwater runoff that leads to erosion and flash flooding of creeks on a regional basis and reconnect the floodplain.

#### **Project Status**

The project is in the conceptual/planning stage.

#### **Anticipated Project Lead**

The anticipated project lead is Madison County Highway Department, Madison County Planning Department, and the Soil and Water Conservation District.



## R21 – COUNTYWIDE HYDROPOWER FEASIBILITY STUDY

### Natural and Cultural Resources

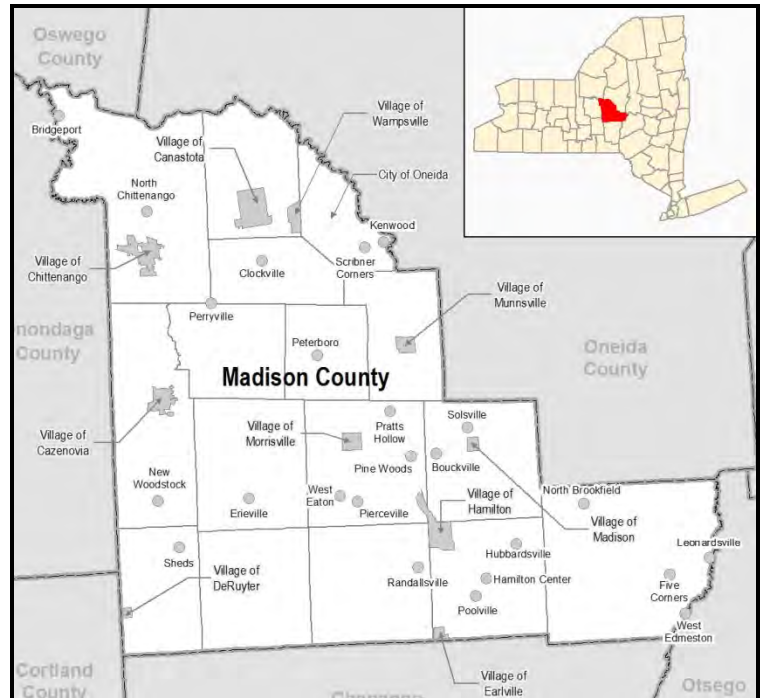
#### Project Description

This project will evaluate the feasibility of utilizing licensed dams within the County for small scale hydropower. This project would expand the County's ability to generate power through alternative sources.

Hydropower is considered a renewable energy resource because it uses the Earth's water cycle to generate electricity. Water evaporates from the Earth's surface, forms clouds, precipitates back to earth, and flows toward the ocean. The movement of water as it flows downstream creates kinetic energy that can be converted into electricity. A hydroelectric power plant converts this energy into electricity by forcing water, often held at a dam, through a hydraulic turbine that is connected to a generator. The water exits the turbine and is returned to a stream or riverbed below the dam.<sup>ix</sup>

#### Project Location

This project is a countywide project in Madison County.



#### Estimated Project Costs

The estimated cost to conduct a hydropower feasibility study approximately **\$15,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)<sup>1)</sup>
  - NYS Energy Research and Development Authority – Flexible Technical Assistance.
  - NYS Energy Research and Development Authority – New Construction Program
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)

U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)

*Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.*





## Project Benefits

### **Risk Reduction Benefits**

Hydroelectric power plant reservoirs collect rainwater, which can then be used for consumption or for irrigation which would protect the water tables against depletion and reduce vulnerability to floods and droughts.<sup>x</sup> This project would also provide an alternative energy source thereby increasing the County's resiliency.

### **Economic Benefits**

Small scale hydropower will have economic benefits for Madison County by providing a renewable energy source to the County. The power generated from these small scale hydroelectric dams will generate revenue for the county and may even reduce residents' electric bills. Furthermore, hydroelectric installations bring electricity, highways, industry and commerce to communities, thus developing the economy, expanding access to health and education, and improving the quality of life.<sup>x</sup>

### **Health and Social Benefits**

The entire community would benefit from looking into the feasibility of hydropower. The County and its residents and visitors would benefit from a reduction in fossil fuel needs and use, creating a healthier environment to live in.

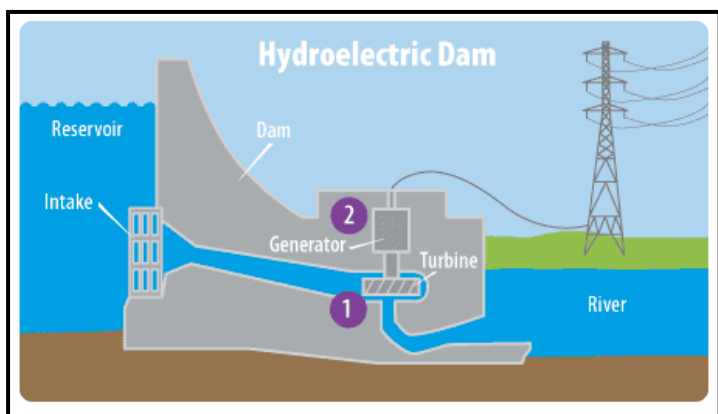
### **Environmental Benefits**

Climate change is a significant environmental issue. Renewable energy sources, such as hydroelectricity, would reduce the County's dependency on fossil fuels and directly benefit the environment. Hydroelectric power plants do not release pollutants into the air, do not generate toxin by-products, and frequently substitute the generation from fossil fuels, thus reducing acid rain and smog.<sup>x</sup>

## Cost-Benefit Analysis

A project to conduct an alternative energy study for Madison County could potentially provide power redundancy during severe storms, allowing businesses to operate longer, and residents to have uninterrupted vital services such as heat and power-driven sump pumps.

With an average lifetime of 50 to 100 years, hydroelectric developments are long-term investments that can benefit various generations and can be easily upgraded to incorporate more recent technologies and have very low operating and maintenance costs.<sup>x</sup> River water is a domestic resource which, contrary to fuel or natural gas, is not subject to market fluctuations. In addition to this, it is the only large renewable source of electricity and its cost-benefit ratio, efficiency, flexibility and reliability assist in optimizing the use of thermal power plants.<sup>x</sup>



(Source: US EPA)

Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.



The potential benefits of this project are believed to outweigh the financial investment of project implementation.

#### **Risk Reduction Analysis**

This project would also provide an alternative energy source thereby increasing the County's resiliency.

#### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

#### **Strategies**

Mitigate stormwater runoff that leads to erosion and flash flooding of creeks on a regional basis and reconnect the floodplain.

#### **Project Status**

The project is in the conceptual/planning stage.

#### **Anticipated Project Lead**

The anticipated project lead is the Madison County Planning Department.



## R22 – AGRICULTURE AND FARMLAND PROTECTION PLAN UPDATE

### Natural and Cultural Resources

#### Project Description

Agriculture is important to the economy and character of Madison County. The Madison County Agricultural and Farmland Protection Plan, completed in July of 2005, does not address floodwater damage to agriculture and farmlands in Madison County. Updating the plan to protect, enhance and support agriculture in the County and consider flooding impacts on crop loss and the agricultural economy is crucial. The plan would also provide guidance on how to recover from storm events and losses.

#### Project Location

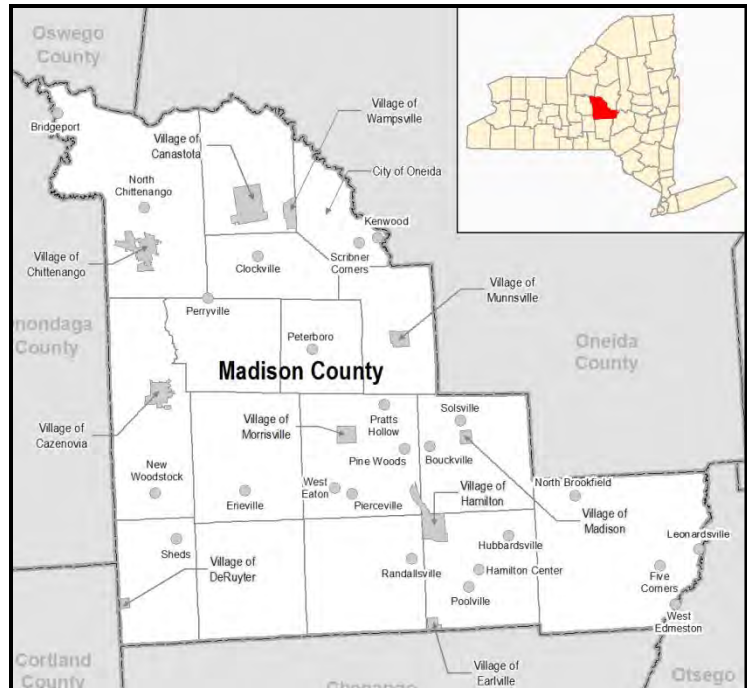
This project is a countywide project in Madison County.

#### Estimated Project Costs

The estimated cost to prepare an updated agriculture and farmland protection plan is approximately **\$50,000** and the funding request is for the entire amount of the project.

#### Potential Funding Sources

- New York Rising Community Reconstruction Program
- New York State Consolidated Funding Application (CFA) (Thirty-three programs through 12 State agencies accessible through a single application.)
  - NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants
- Federal Emergency Management Administration’s (FEMA) Hazard Mitigation Grant
- Federal Emergency Management Administration’s (FEMA) Pre-Disaster Mitigation Program
- U.S. Environmental Protection Agency (EPA) grant programs (e.g. Clean Water State Revolving Fund, Wetlands Funding, Hardships Grants Program for Rural Communities)
- U.S. Army Corps of Engineers (USACE) grant programs (e.g. Floodplain Management Services Program, Planning Assistance to States Program)



Project numbers with “P” indicate a Recovery project while “R” indicates a Resiliency project. Numbers are not indicative of prioritization.



## Project Benefits

### ***Risk Reduction Benefits***

An update to The Madison County Agricultural Farmland Protection Plan would identify actions and strategies to reduce the risk of flooding and related damages by protecting valuable assets, such as agricultural land, by making them more resilient.

### ***Economic Benefits***

An update to the plan would assess the current economic state of agriculture and farmland in Madison County. This would help protect and potentially increase the value of existing farmlands, enhance communication and efficacy between existing farmers, and provide a stable, feasible economic future for agriculture in Madison County. This update would also provide clear guidance on how to recover from economic losses due to floodwater and drought damages to agriculture and farmland in Madison County.

### ***Health and Social Benefits***

The protection and preservation of farmlands and agriculture in Madison County would have numerous health and social benefits. Agriculture and farmland provide people with healthy food and a healthy way of life. An update to this Plan would improve the protection of farmlands and agriculture in Madison County. The preservation of these farmlands also preserves open space which has been shown to improve mental health.

### ***Environmental Benefits***

The Plan update would support the protection and preservation of farmlands which also serves to maintain open space that is beneficial to wildlife. Existing physical conditions, such as soils, would be evaluated to better understand current and future opportunities and constraints. Recommendation on how to work with the land as opposed to against it, and best management practices would be included, thereby promoting creating sustainable farming practices with less environmental impacts.

## Cost-Benefit Analysis

This project would provide farmers with the tools necessary to protect and make their farmland and operations more resilient against severe weather events. By minimizing future damages and losses, farm owners, municipalities and the County would experience a reduction in expenditures associated with damages, reconstruction and repairs after storm events and flooding. The Plan would also provide clear guidance on how to best recover if economic losses to agriculture and farmland due to floodwaters and drought do occur.

The potential benefits of this project are believed to outweigh the financial investment of project implementation.



*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



### **Risk Reduction Analysis**

An update to the July, 2005 Madison County Agricultural Farmland Protection plan would provide risk reduction to farmers in Madison County by helping to protect agricultural assets by making them less vulnerable and more resilient. The update to this Plan would provide guidance on how to reduce the risk of flooding and the effects of drought on agriculture and farmland, thereby minimizing future loss and damages.

### **Timeframe for Implementation**

The timeframe for implementation is near term, 0-18 months.

### **Strategies**

Support the economic viability of agriculture.

### **Project Status**

The project is in the conceptual/planning stage.

### **Anticipated Project Lead**

The anticipated project lead is the Madison County Planning Department and the Madison County Farmland Protection Board.



*Canaseraga Farms, Henry's Farm Stand*

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



## Section V: Schedule for Implementation

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*Chittenango Creek at the Chittenango Falls State Park*



# NY Rising Madison County Resiliency Plan

The following tables illustrate the schedule for implementation. Anticipated completion time range would be applicable once funding is made available for the project.

- Short-term: 0-2 years
- Mid-term: 2-5 years
- Long-term: 5-10 years

**Table 49: Community Planning and Capacity Building Implementation**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	Page #
P40	Oneida Armory Flood Barrier Installation	FEMA approved flood barrier installation	Oneida (C)	\$48,000	Oneida (C)	Short-Term	123
P5	Fire Department PFD's and Dry Suits	Provide Personal Flotation Devices (PFD's), dry suits, and sand bags for first responders	Countywide	\$68,950	County	Short-Term	125
P12	Emergency Power Generation for Municipal Buildings and Shelters	Emergency Municipal Power Generation	Countywide	\$650,000	County	Short-Term	127
R1	Countywide Emergency Communications Plan	Improve emergency communications by identifying gaps, needs and recommendations	Countywide	\$150,000	County	Short-Term	129
R2	Emergency Stream Intervention Training	Provide municipal training about emergency stream intervention and the correct techniques to use	Countywide	\$30,000	County	Short-Term	132
R3	Resiliency Tools Guide	Identify various tools to help local communities to enhance resiliency	Countywide	\$75,000	County	Short-Term	134

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# NY Rising Madison County Resiliency Plan

**Table 50: Economic Development Implementation**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	Page #
R4	Madison County Strategic Economic Development Plan Implementation	Implement County's Strategic Plan to increase economic development opportunities and employment opportunities	Countywide	\$150,000	County	Short-Term	136
R5	Countywide Downtown Revitalization Plan	Prepare and implement a plan that includes streetscape enhancements, infill development, and historic preservation	Countywide	\$250,000	County	Short-Term	139
R6	City of Oneida Downtown Revitalization Plan	Prepare and implement a plan that includes streetscape enhancements, infill development, and historic preservation	Oneida (C)	\$100,000	Oneida (C)	Short-Term	142
R7	Countywide Wayfinding Signage Plan and Implementation	Provide wayfinding signage, including a County brand	Countywide	\$250,000	County	Short-Term	145
R8	Centralized Chamber of Commerce Feasibility Plan	Evaluate the feasibility of centralizing the Chambers of Commerce within the County	Countywide	\$10,000	County	Short-Term	147
R9	Extension and Recapitalization of the County's Microenterprise Program	Continue to provide training and assistance to small businesses	Countywide	\$200,000	County	Short-Term	149

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*





# NY Rising Madison County Resiliency Plan

**Table 51: Health and Social Services Implementation**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	Page #
<b>P37</b>	City of Oneida DPW Garage Relocation	Relocation of the Oneida DPW Garage and related facilities out of the flood zone	Oneida (C)	\$1,900,000	Oneida (C)	Short-Term	151
<b>P32</b>	Relocation of the Oneida City Water Department Garage	Relocation of facility out of flood zone	Oneida (C)	\$480,000	Oneida (C)	Short-Term	154
<b>P39</b>	Relocation of the Oneida City Salt Shed	Relocation of facility out of flood zone	Oneida (C)	\$60,000	Oneida (C)	Short-Term	156
<b>R10</b>	Madison County Department of Health Data Management System	Provide a baseline of environmental health indicators	Countywide	\$70,000	County	Short-Term	158
<b>R11</b>	Vulnerable Populations Registry and Outreach	Identify vulnerable populations, create database and establish outreach program	Countywide	\$30,000	County	Short-Term	160
<b>R12</b>	Resiliency Evaluation of Municipal Facilities Countywide	Evaluate resiliency of municipal and governmental facilities located in or adjacent to the floodplain	Countywide	\$400,000	County	Short-Term	162

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



**Table 52: Housing Implementation**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	Page #
<b>P41</b>	Flood Impacted Housing Demolition	Damaged housing demolition and removal	Oneida (C)	\$324,000	Oneida (C)	Short-Term	164
<b>R13</b>	Countywide Housing Needs Evaluation	Evaluation of existing and future housing needs	Countywide	\$100,000	County	Short-Term	166
<b>R14</b>	City of Oneida Housing Needs Evaluation	Evaluation of existing and future housing needs	Oneida (C)	\$50,000	Oneida (C)	Short-Term	169
<b>R15</b>	City of Oneida Affordable Downtown Rental Housing	Development of affordable housing rental units in the downtown area, outside of the floodplain	Oneida (C)	\$500,000	Oneida (C), Stoneleigh Housing Inc.	Short-term	172
<b>R16</b>	Residential Floodproofing Assistance Program	Assistance for homes and neighborhoods that are unable to relocate	Oneida (C)	\$500,000	Oneida (C)	Short-Term	176

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# NY Rising Madison County Resiliency Plan

**Table 53: Infrastructure Implementation**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	Page #
P6	Poolville Road Culvert Repairs	Culvert replacement	Hamilton (T)	\$84,000	Hamilton (T)	Short-Term	179
P7	Fearon Road Culvert Repair	Culvert replacement	Eaton (T)	\$66,000	Eaton (T)	Short-Term	179
P8	Dugway Road Culvert Repair	Culvert replacement	Nelson (T)	\$100,800	Nelson (T)	Short-Term	179
P9	Hart Road Culvert Repair	Culvert replacement	Eaton (T)	\$6,240	Eaton (T)	Short-Term	179
P10	Reservoir Road Culvert Repair	Culvert replacement	Cazenovia (T)	\$6,000	Cazenovia (T)	Short-Term	179
P11	Skaneateles Turnpike Culvert Repair	Culvert replacement	Brookfield (T)	\$51,600	Brookfield (T)	Short-Term	179
P14	Carey Road Culvert Repair	Culvert replacements	DeRuyter (T)	\$144,000	DeRuyter (T)	Short-Term	179
P15	Tallett Road Culvert Repair	Culvert replacements	DeRuyter (T)	\$16,640	DeRuyter (T)	Short-Term	179
P17	Williams Corners Road Culvert Repairs	Culvert replacement	Eaton (T)	\$240,000	Eaton (T)	Short-Term	179
P19	Roberts Road Culvert Repair	Culvert replacement	Eaton (T)	\$240,000	Eaton (T)	Short-Term	179
P20	Jones Road Repairs	Culvert replacement	Georgetown (T)	\$12,000	Georgetown (T)	Short-Term	179
P22	Bonney Road Culvert Upgrade	Culvert replacement	Georgetown (T)	\$18,000	Georgetown (T)	Short-Term	179
P23	Williams Road Culvert Repair	Culvert replacement	Hamilton (T)	\$360,000	Hamilton (T)	Short-Term	179
P24	Harris Road Culvert Repair	Culvert replacement	Hamilton (T)	\$90,000	Hamilton (T)	Short-Term	179
P25	Borden Road Culvert Repair	Culvert replacement	Hamilton (T)	\$12,000	Hamilton (T)	Short-Term	179
P26	Carncross Road Bridge Repair	Culvert replacement	Lebanon (T)	\$111,953	Lebanon (T)	Short-Term	179
P28	Falin Road Culvert Repair	Culvert replacement	Madison (T)	\$36,000	Madison (T)	Short-Term	179

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# NY Rising Madison County Resiliency Plan

**Table 53: Infrastructure Implementation Cont'd**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	Page #
<b>P29</b>	Abbert Road Culvert Repair	Culvert replacement	Madison (T)	\$36,000	Madison (T)	Short-Term	179
<b>P30</b>	Jones Road Culvert Repairs	Culvert replacement	Nelson (T)	\$19,200	Nelson (T)	Short-Term	179
<b>P31</b>	Hughes Road Culvert Repair	Culvert replacement	Nelson (T)	\$6,000	Nelson (T)	Short-Term	179
<b>P32</b>	Thomas Road Culvert Repair	Culvert replacement	Nelson (T)	\$9,600	Nelson (T)	Short-Term	179
<b>P35</b>	Greene Road Reconstruction	Culvert replacement	Nelson (T)	\$12,000	Nelson (T)	Short-Term	179
<b>P36</b>	North Lake Road at Blue Canoe Reconstruction	Culvert replacement	Nelson (T)	\$60,000	Nelson (T)	Short-Term	179
<b>P44</b>	Bishop Road Culvert Repair	Culvert replacement	Stockbridge (T)	\$3,662	Stockbridge (T)	Short-Term	179
<b>P45</b>	Quarry Road Culvert Repair	Culvert replacement	Stockbridge (T)	\$4,051	Stockbridge (T)	Short-Term	179
<b>P46</b>	Haslauer and Cook Road Culvert Repairs	Culvert replacements	Stockbridge (T)	\$300,000	Stockbridge (T)	Short-Term	179
<b>P2</b>	Maple Road Reconstruction	Road Reconstruction	Cazenovia (T)	\$60,000	Cazenovia (T)	Short-Term	186
<b>P3</b>	Ridge Road Flood Reconstruction	Stormwater mitigation	Cazenovia (T)	\$108,937	Cazenovia (T)	Short-Term	186
<b>P13</b>	South Hill Road Stabilization and Restoration	Installation of catch basins, replacement of a culvert pipe and repaving	DeRuyter (T)	\$37,272	DeRuyter (T)	Short-Term	186
<b>P27</b>	Thompson Hill Road Repairs	Road ditch reshaping and shoulder reestablishment	Lebanon (T)	\$78,960	Lebanon (T)	Short-Term	186
<b>P33</b>	Sunrise Boulevard Reconstruction	Ditch enlargement and culvert replacement	Nelson (T)	\$12,000	Nelson (T)	Short-Term	186
<b>P34</b>	North Lake Road Reconstruction	Installation of culverts, drop basins, a paved shoulder, bank riprap, concrete headwalls, debris catchers	Nelson (T)	\$12,000	Nelson (T)	Short-Term	186

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



**Table 53: Infrastructure Implementation Cont'd**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	Page #
<b>P42</b>	Sealed Sanitary Manholes	Watertight frames and grates installation	Oneida (C)	\$41,400	Oneida (C)	Short-Term	189
<b>R17</b>	Countywide Infrastructure Inventory and Mapping	Inventory and document the type, location and condition of key infrastructure	Countywide	\$300,000	County	Short-Term	191
<b>R18</b>	Countywide Stormwater Management Plan	Stormwater management plan for extreme and high risk areas that are not included in an MS4	Countywide	\$250,000	County	Short-Term	193

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



# NY Rising Madison County Resiliency Plan

**Table 54: Natural and Cultural Resources Implementation**

Project #	Project Title	Project Description	Location	Estimated Cost	Proposed Responsible Parties	Timeline	
<b>P1</b>	Town of Brookfield Streambank Stabilization and Restoration	Reestablishment of eroded and washed out areas of streambank	Brookfield (T)	\$120,000	Brookfield (T)	Short-Term	196
<b>P16</b>	Carey Road Streambank Stabilization and Restoration	Reestablishment of eroded and washed out areas of streambank	DeRuyter (T)	\$109,680	DeRuyter (T)	Short-Term	196
<b>P18</b>	Route 20 Flooding Remediation	Stream channel cleaning and reshaping	Eaton (T)	\$42,000	Eaton (T)	Short-Term	196
<b>P21</b>	Bronder Hollow Road Bank Stabilization and Restoration	Reestablishment of eroded and washed out areas of streambank	Georgetown (T)	\$18,000	Georgetown (T)	Short-Term	196
<b>P43</b>	Maxwell Field Streambank Stabilization and Restoration	Reestablishment of eroded and washed out areas of streambank	Oneida (C)	\$48,000	Oneida (C)	Short-Term	196
<b>P4</b>	Countywide Stream Debris Removal	Identification and removal of stream debris and jams	Countywide	\$60,000	County	Short-Term	201
<b>P47</b>	Chittenango Creek Logjam Clearings	Identification and removal of stream debris and jams	Sullivan (T)	\$36,000	Sullivan (T)	Short-Term	201
<b>R19</b>	Countywide Stream Maintenance Program	Establish annual maintenance program and dedicate a staff person	Countywide	\$225,000	County	Short-Term	204
<b>R20</b>	Countywide Flood Mitigation Initiative	Watershed modeling to create a hydrologic model and mitigation recommendations	Countywide	\$1,000,000	County	Short-Term	207
<b>R21</b>	Countywide Hydropower Feasibility Study	Evaluate feasibility of utilizing licensed dams for small scale hydropower	Countywide	\$15,000	County	Short-Term	210
<b>R22</b>	Agriculture and Farmland Protection Plan Update	Update to existing 2005 Plan	Countywide	\$50,000	County	Short-Term	213

*Project numbers with "P" indicate a Recovery project while "R" indicates a Resiliency project. Numbers are not indicative of prioritization.*



## Section VI: Additional Materials

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*Oneida Creek at the Bennett Road Bridge, City of Oneida*



## A. Public Engagement Process

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Governor Cuomo has been a strong proponent of bottom-up, community-driven planning; in other words, the real “experts” are the residents of the communities that have been confronted first-hand by these natural disasters. A critical component, therefore, of the NYRCR Program is the exchange of information between the Committee, the State, the Consultant Team, and the public to identify needs, opportunities, strategies, and solutions that are likely to carry Community support. The public in this case is defined as area residents, employees, civic groups, neighborhood and homeowner associations, environmental and other interest groups, business interests, governmental agencies, educational, medical, religious, and other institutions, the media, elected/appointed officials, as well as other stakeholders who express interest in the process.

As part of its Public Engagement strategy, the Committee:

- Established the means to engage and facilitate information sharing with the public throughout the development of the NYRCR Plan
- Educated the public and elicited public comments and suggestions regarding all aspects of the Plan within the NYRCR Communities
- Employed outreach techniques that allowed for collection and coordination of public communication and comments

The Committee utilized a number of dissemination techniques to achieve a thorough, responsive, open, and transparent communication process.

### *Committee Meetings*

Planning Committee Meetings were held on a regular basis. Committee Members discussed agenda items and reached consensus on topics such as the Community vision statement, critical assets and risks, Community needs and opportunities, public event planning and feedback, NYRCR Conceptual Plan development, strategies, projects, and costs.

The following Madison County NYRCR Program Committee meetings were held at the Madison County Office Complex, Building #4, in Wampsville, NY:

- Committee Meeting 1, Friday, March 14, 2014, 10:30 AM
- Committee Meeting 2, Wednesday, March 26, 2014, 10:00 AM
- Committee Meeting 3, Monday, April 7, 2014, 10:00 AM
- Committee Meeting 4, Monday, April 28, 2014, 2:00 PM
- Committee Meeting 5, Tuesday, May 20, 2014, 10:00 AM
- Committee Meeting 6, Tuesday, June 17, 2014, 2:00 PM
- Committee Meeting 7, Tuesday, July 22, 2014, 2:00 PM

All Committee Meetings were open to the public, with meeting dates and times posted on the NYRCR website (<http://www.stormrecovery.ny.gov/nyrcr>).





## *Public Engagement*

While the Committee represents the interests of many, it was important to provide opportunities for the public to participate in the development of the Plan.

## *Public Engagement Events*

Each Public Engagement Event included a presentation of work done to date and an opportunity for attendees to provide feedback. Each Public Engagement Event was preceded by public notice (including press releases, announcements, individual mailings, and other appropriate means) and outreach to underserved communities and displaced stakeholders. At each Event, information was gathered from those attending and feedback was collected for inclusion in the ongoing planning process. Public Engagement Events were scheduled to coincide with major milestones. Event materials were available in English and if requested, in Spanish.

Presentation materials were developed for each event that illustrated the key points of the information presented using plain language, graphics, simulations, etc.

The process included a series of three Public Engagement Events:

1. To identify recovery projects, the Community visioning process and Community assets
2. To define the Community Vision and solicit initial input on the asset inventory and assessment of risk to Community assets
3. To solicit input from the public concerning the content of the Final Resiliency Plan



*Community members at a Public Engagement Event*

Outreach for Public Engagement Events included: posting on the State NYRCR webpage and other electronic media; ads in weekly print media when time and budget allows; flyers and posters at strategic locations throughout the Community including libraries, community centers, and other centers of activity; e-mails and/or texts to lists available from community leaders and organizations. Outreach also included requests to Community organizations to post information on their websites. Phone calls were made to elected officials and other key players in the local residential and business community and calls to each Committee member to assist them with their outreach effort (e.g., calls/e-mails to their contacts and announcements at their events).



## NY Rising Madison County Resiliency Plan

Each Public Engagement Event was formatted as an open house that the public could attend during any part of the allotted two hours. Stations were positioned around the room for the various topics. Committee members, municipal representatives, State planners, and the NYRCR Consultant Team were present at each station to provide opportunity for the Community to exchange ideas in a comfortable setting. This structure provided an opportunity for each attendee to work within their own schedule and comment on all or some of the specific aspects of the process in a meaningful way.

As the project progressed, the public was presented with maps, a geographic scope, Community assets, risk to assets, and a vision statement, needs and opportunities, strategies and projects that had been vetted and/or created by the Committee. The desired outcome of each Public Engagement Event was to obtain the public's reactions and feedback to the Committee's work in order to incorporate their input. Comments were provided to the Committee for review. The Committee reviewed the public's feedback and incorporated it into the NYRCR Plan. The schedule for the first three Public Engagement Events was as follows:

### **Event #1, Tuesday, March 25, 2014**

This public open house workshop was held on March 25, 2014, from 6:30pm-8:30pm at Morrisville State College and focused on identifying recovery projects, the Community visioning process and Community assets. The attendees were greeted by State Planners and Committee members, provided with an overview of the NYRCR planning process, and were given several opportunities to interact with and provide feedback on the planning work to date. These included opportunities to create a Community "word cloud," review and identify Community assets, and provide comments on the identified recovery projects.

### **Event #2, Monday, April 28, 2014**

This public open house workshop was held on April 28, 2014, from 5:30pm-7:30pm at the Madison-Oneida BOCES Transportation Center and focused on gathering the public's knowledge, experience, and recommendations that are essential in the development of the NYRCR Plan. The public was invited to provide input on the New York Rising Community Reconstruction (NYRCR) Planning Committee's work to date, including the draft Community Vision, Community Assets, and Needs and Opportunities.

### **Event #3, Tuesday, July 15, 2014**

This public open house workshop was held on July 15, 2014, from 5:30pm-7:30pm at the Kallet Theater on Main Street in the City of Oneida and focused on presenting the risk assessment and additional resiliency strategies that are included in the Countywide Resiliency Plan. Members of the public were invited to provide input on the identified projects and the risk assessment maps presented. Approximately 20 Community members attended the event.



## B. Community Asset Inventory and Risk Assessment

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Based on the direction provided by the State, the development of the asset inventory and subsequent risk assessment process followed a specific methodology, which is outlined below.

### *Pre-Screening/Data Management*

The NYRCR Consultant Team used the asset inventory as a baseline in which to identify assets that may potentially be inputted into the Risk Assessment Tool. The pre-screening was designed to advance assets that were either:

- Situated in Extreme and High Risk Areas;
- Critical Assets (FEMA-critical) in Moderate Risk Areas;
- Locally-significant Community identified (High Community Value) in Moderate Risk Areas;
- Assets with High Community Value in Non Risk Areas; or
- Life safety services

The asset inventory was based both on Community-identified assets and State-identified assets. The assets catalogued included basic data such as Community, asset name and type, asset category, as well as risk area and asset class. As previously indicated, as an initial data management step, all Community and State identified assets were consolidated into one database.

Assets filtered out included those that fell outside of Extreme, High or Moderate risk areas or were non-critical assets located in Moderate risk areas. As previously mentioned, Committee-identified or locally significant high value assets were also included.

### *Assets Groups*

Similar assets were grouped as a single asset to the maximum extent possible because these assets would likely experience the same effects from storm events and have similar vulnerabilities. Examples included:

- Street network or electric infrastructure with similar construction and exposure;
- Residential neighborhoods or business districts by risk area; and
- Campuses (multiple buildings/schools on one campus)

In the event that a building or parcel spanned multiple risk areas, the “worst-case or more at-risk” risk area was used for the purposes of analysis.

### *Community Value in Madison County*

During Committee Meeting #3 held on April 7, 2014, the Committee participated in a Community Value and Critical Asset exercise. During this exercise, a Critical Assets Worksheet containing roughly 27 asset classes was distributed to the Committee to complete. The contents of critical asset classes were developed using a collaborative approach with the Committee. Similarly, asset classes were also presented at Public Engagement Event 2 (April 28, 2014) in order to solicit verbal commentary from the



public on the community value placed on assets and their importance relative to the resilience of the locality.

The various asset classes included a number of facilities and facilities ranging from fire departments to housing, businesses, and schools (see attached worksheet). The purpose of this exercise was to get the Committee to think about each asset class and its importance relative to the resiliency of the Community. Committee members were presented with worksheets with asset value definitions (see below) and then asked to identify each asset class as high, medium, or low value.

- **High Value Community Asset:** *Asset(s) that are so significant in the support of that Community's day to day function that the loss of that asset or extended lack of functioning would create severe impacts to the Community's long-term health and well-being or result in the loss of life or injury to residents, employees, or visitors.*
- **Medium Value Community Asset:** *Asset(s) that are important to the functioning of that Community's day to day life and that the loss of that asset or extended lack of functioning would cause hardship to the Community's well-being but whose function could be replaced or duplicated in a mid-term time frame without significant burden to a Community's long-term health*
- **Low Value Community Asset:** *Assets(s) that play a role in the functioning of a Community's day to day life, but whose loss could be managed and overcome within a Community without substantial impact to that Community's functioning. Can be started, replaced, or temporarily duplicated in a short-term time frame with limited burden to a Community's long-term health.*

The final tabulation of Committee responses included four Low Value assets, twelve Medium Value assets and eight High Value assets.

### ***Using the Risk Assessment Tool***

The dual purpose of the Risk Assessment Tool was: (1) to provide risk information as a means to identify and prioritize management measures; and (2) to provide a standardized risk assessment process for the NYRCR Program.

As previously mentioned, the assets catalogued in the NYRCR Conceptual Plan included preliminary data such as Community, asset name and type, asset category, as well as risk area and asset class. This task included a review of GIS datasets, aerial imagery, and public/Committee input. Most of the risk assessment tool fields were populated using appropriate data from the consolidated database. Two important aspects to the tool are how to accurately determine the exposure and vulnerability scores.

### ***Exposure Score***

The exposure score was automatically populated in the Risk Assessment Tool based on landscape attribute information. Grouped assets based on similar exposure were given the same exposure score. Data that informed the exposure score included a review of aerial imagery, and site reconnaissance as well as a reliance on local knowledge and input from the Committee.



### ***Hazard Score***

The hazard score is automatically populated in the Risk Assessment Tool based on the likelihood and magnitude of a 100-year storm event (1% annual chance). For the purpose of the NYRCR Plan, the Hazard Score was equal to three (3), which can be described as a high intensity storm event that is about as likely as not (possible). The probability of this type of storm to occur within the planning timeframe is considered to be 33-66%.

### ***Vulnerability Score***

The vulnerability score of each asset will be determined using the State's Guidance (based on Guidance Table 3: *Vulnerability Based on Impact on Service or Function of Community Assets*) as well as local background knowledge. Vulnerability generally pertains to length of time that a resource is out of service or a reduction in service capacity.<sup>99</sup>

### ***Risk Score Range***

After populating Risk Assessment Tool with attribute information (basic data/hazard area/exposure/vulnerability, etc.) a Risk Score was automatically generated. The Risk Score relied on past experience as a predictor of future risk and included some subjective analysis. For a 100-year event, the Risk Score ranges from Residual (less than six) to Severe (54 or greater).



# NY Rising Madison County Resiliency Plan

Community Asset Inventory and Risk Assessment																			
Asset Information								Landscape Attributes							Risk Assessment (100-year event)				
#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
1	Dollar General	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
2	Downtown Multi-tenant Buildings	Extreme	Economic	Downtown Center	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
3	Downtown Multi-tenant Buildings	Extreme	Economic	Downtown Center	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
4	Mansion at 120 Madison Inc	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
5	Multi-Tenant Building at east end of Tuscarora Rd	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
6	Oneida Savings Bank	Extreme	Economic	Banks and financial services	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
7	Salvation Army	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
8	Small Commercial Plaza	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
9	Sun Chevrolet	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
10	Citizens Bank	Extreme	Economic	Banks and financial services	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
11	Downtown Row Buildings	Extreme	Economic	Downtown Center	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
12	Express Mart	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
13	Key Bank	Extreme	Economic	Banks and financial services	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
14	Small Businesses	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
15	AC Delco Oneida Service Center	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
16	Canastota Concrete - Oneida Plant	Extreme	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
17	Christopher's	Extreme	Economic	Restaurants	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
18	Lenox Auto Center and Multiple Tenants	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
19	Mazzullo & Sons Carpet One & Furniture	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
20	National Grid Building	Extreme	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
21	Paul Robert, Inc.	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
22	SavOn Service Station	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
23	The Corner Diner	Extreme	Economic	Restaurants	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
24	The Market @ Oneida Commons - Rear Building	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
25	Wilson Street Commercial Corridor	Extreme	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
26	Cooley's True Value	Extreme	Economic	Large Business	No	No	Medium	Yes	No	Yes	No	Yes	Yes	2	3	4	3	36	High
27	Cazenovia Lumber and Oil Company Kelly Brothers Warehouse and Storage	High	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
28		Extreme	Economic	Small Business	No	No	Medium	Yes	No	Yes	No	Yes	Yes	2	3	4	2	24	High
29	Hanifin Tire	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
30	Hartman Ent Inc.	High	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
31	Thompson Appliances	Extreme	Economic	Large Business	No	No	Medium	Yes	No	Yes	No	Yes	Yes	2	3	4	2	24	High



# NY Rising Madison County Resiliency Plan

Community Asset Inventory and Risk Assessment																			
Asset Information								Landscape Attributes							Risk Assessment (100-year event)				
#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
32	Days Inn	High	Economic	Lodging	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
33	DMC Technical Products	High	Economic	Employment Hub	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
34	Dunkin Donuts	High	Economic	Restaurants	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
35	Fuels Inc.	High	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
36	Isadore A. Rapasadi & Sons Inc	High	Economic	Employment Hub	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
37	Kwick Fill	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
38	NAPA Auto Parts	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
39	Queensboro Farm Products	High	Economic	Employment Hub	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
40	Visions of Canastota, LLC	High	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
41	Mahoney Self Storage	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
42	Red Apple Service Station	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
43	Champion Car Center	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
44	Converted Residence	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
45	Dorans Auto Service	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
46	Frank A Fera Inc	High	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
47	Cazenovia Abroad Trush Warehouse	High	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
48	Construction Equipment Salvage Yard	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
49	Johnson Bros Lumber	High	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
50	Minn Dairy Farm	High	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
51	Barnes Dairy Farm	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
52	Rounsaville Dairy Farm	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
53	Predmores General Store	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
54	The Georgetown Inn	High	Economic	Lodging	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
55	Small Commercial Sector	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
56	ALDI	High	Economic	Grocery / Food Suppliers	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
57	Callahan Marina	High	Economic	Marina / Water Based Business	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
58	Hidden Harbor	High	Economic	Lodging	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
59	J Tornabene Trucking	High	Economic	Industrial, Warehousing and Manufacturing	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
60	Pier 31	High	Economic	Marina / Water Based Business	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
61	Fuess Dairy Farm	High	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
62	Just Another Bar	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate



# NY Rising Madison County Resiliency Plan

Community Asset Inventory and Risk Assessment																			
Asset Information								Landscape Attributes							Risk Assessment (100-year event)				
#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
63	Brubaker Farm	High	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
64	Squires Dairy Farm	High	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
65	BDR Farms, LLC	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
66	Bill's Marien Sales at Fisher Bay	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
67	Canaseraga Farms	High	Economic	Large Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
68	CSM Tile Co	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
69	Fremac Waterfront Company	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
70	Lakeport Marina	High	Economic	Marina / Water Based Business	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
71	Stone's Marina Kayak Club	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
72	Chittenango Child Care Center	Extreme	Health and Social Services	Schools	Yes	Yes, FEMA	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
73	OPWDD - CHITTENANGO HOSTEL #11589	Extreme	Health and Social Services	Healthcare Facilities	Yes	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
74	MORRISVILLE FIRE STATION	Extreme	Health and Social Services	Emergency Operations / Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
75	Morrisville Post Office	Extreme	Health and Social Services	Government and Administrative Services	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
76	Morrisville State College Garage	Extreme	Health and Social Services	Higher Education Institutions	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
77	City of Oneida Department of Public Works	Extreme	Health and Social Services	Public Works Facility	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
78	City of Oneida Salt Storage Shed	Extreme	Health and Social Services	Government and Administrative Services	No	No	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
79	Oneida Armory Recreation Center (Shelter)	Extreme	Health and Social Services	Emergency Operations / Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
80	Vineall Ambulance, Inc.	Extreme	Health and Social Services	Emergency Operations / Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
81	Fiver Children's Foundation	Extreme	Health and Social Services	Schools	Yes	Yes, FEMA	Medium	Yes	Yes	Yes	No	No	Yes	2	3	4	3	36	High
82	Madison County Highway Garage	Extreme	Health and Social Services	Public Works Facility	No	Yes, FEMA	High	Yes	No	Yes	No	Yes	Yes	2	3	4	3	36	High
83	Oneida Animal Hospital	High	Health and Social Services	Healthcare Facilities	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	3	36	High
84	Munnsville Post Office	High	Health and Social Services	Government and Administrative Services	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
85	Chenango Nursery School	High	Health and Social Services	Schools	Yes	Yes, FEMA	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
86	Hamilton Central School	High	Health and Social Services	Schools	Yes	Yes, FEMA	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
87	Hamilton Police Department	High	Health and Social Services	Emergency Operations / Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate





# NY Rising Madison County Resiliency Plan

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#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
88	Kenwood Post Office	High	Health and Social Services	Government and Administrative Services	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
89	Madison County Jail	High	Health and Social Services	Government and Administrative Services	Yes	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
90	Oneida Area Day Care Center	High	Health and Social Services	Daycare and Eldercare	Yes	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
91	Oneida Senior High School	High	Health and Social Services	Schools	Yes	Yes, FEMA	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
92	Seneca Street Elementary School	High	Health and Social Services	Schools	Yes	Yes, FEMA	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
93	Community Memorial Health Center	High	Health and Social Services	Healthcare Facilities	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
94	GEORGETOWN FIRE STATION AND AMBULANCE	High	Health and Social Services	Emergency Operations / Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
95	Georgetown Veterinary Clinic	High	Health and Social Services	Healthcare Facilities	Yes	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
96	Town of Georgetown Highway Garage	High	Health and Social Services	Public Works Facility	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
97	Town of Georgetown Offices	High	Health and Social Services	Government and Administrative Services	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
98	Time to Shine Preschool	High	Health and Social Services	Schools	Yes	Yes, FEMA	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
99	ERIEVILLE FIRE STATION	High	Health and Social Services	Emergency Operations / Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
100	Town of Sullivan Highway Department	High	Health and Social Services	Public Works Facility	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
101	Flats Neighborhood	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	4	54	Severe
102	Single Family Residences	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5	3	45	High
103	Apartments	Extreme	Housing	Multi-Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
104	Catherine St Neighborhood	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
105	Chittenango Center for Rehabilitation and Healthcare	Extreme	Housing	Senior Housing	Yes	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
106	Duplexes - Race St and North St	Extreme	Housing	Multi-Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
107	Homes along Falls Blvd - North end	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
108	Homes along Falls Blvd - South end	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
109	Manor Drive Homes	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
110	Multi-Family Residence	Extreme	Housing	Multi-Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High



# NY Rising Madison County Resiliency Plan

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#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
111	Single Family Homes - Race Street	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
112	Single Family Residence	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
113	Valley Acres Neighborhood	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
114	Single Family Residence	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
115	Single Family Residence	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
116	Poolville Residences near Sangerfield River	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.5	3	40.5	High
117	CCLF Senior Housing	Extreme	Housing	Senior Housing	Yes	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
118	Single Family Residences	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
119	Single Family Residences	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	No	Yes	Yes	Yes	Yes	2.5	3	4.5	3	40.5	High
120	Single Family Residences	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
121	Apartments	Extreme	Housing	Multi-Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	4	3	36	High
122	Single Family Residence	Extreme	Housing	Single Family Residence	No	No	Medium	Yes	No	Yes	No	Yes	Yes	2	3	4	2	24	High
123	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
124	Center Street Neighborhood	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
125	Homes along and near S Main St	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
126	Multiple 4-unit Apartment Bldgs	High	Housing	Multi-Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
127	Spencer St Neighborhood	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
128	Carpenter Street Neighborhood	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
129	Single Family Residences at West end of Burr St	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
130	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
131	Madison Lane Apartments (subsidized senior housing)	High	Housing	Senior Housing	Yes	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
132	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
133	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	No	Yes	Yes	Yes	Yes	2.5	3	3.5	2	21	Moderate
134	Cluster of Single-Family Homes - Kenwood Ave North	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
135	Cluster of Single-Family Homes - Kenwood Ave South	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
136	Palmer Drive Neighborhood	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate



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137	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
138	South End Neighborhood	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
139	Single Family Homes	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
140	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
141	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
142	Group of Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
143	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
144	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
145	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
146	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
147	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
148	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
149	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
150	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
151	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
152	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
153	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
154	Valley View Mobile Home Park	High	Housing	Affordable Housing	Yes	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
155	Homes in the Georgetown Hamlet	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
156	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
157	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
158	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
159	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
160	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
161	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
162	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate



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163	Cluster of Single Family Houses - Kelley Rd	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
164	Single Family Homes	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
165	Single Family Homes - Walnut Point	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
166	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
167	Homes on Clockville Road by Clockville Creek	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
168	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
169	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
170	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
171	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
172	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
173	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
174	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
175	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
176	Single Family Residence - Lake Moraine Rd	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
177	Apartments	High	Housing	Multi-Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
178	North Lake Rd Homes	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
179	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
180	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
181	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
182	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
183	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
184	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
185	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
186	Harbour Town Development	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
187	Homes along Creek Road	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate



# NY Rising Madison County Resiliency Plan

Community Asset Inventory and Risk Assessment																			
Asset Information								Landscape Attributes							Risk Assessment (100-year event)				
#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
188	Homes around Chestnut Ridge and Devaul Raod Intersection	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
189	Homes near Chittenango Creek Outlet	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
190	Lakefront Homes - Andrews Shore Road	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
191	Mohawk Community - Mobile Home Park	High	Housing	Affordable Housing	Yes	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
192	Sandy Hatch Road Homes	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
193	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
194	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
195	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
196	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
197	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
198	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
199	Single Family Residence	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
200	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
201	Single Family Residences	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
202	Single Family Residences - Marsh Mills Road	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
203	Single Family Residences - West end of Moore Road	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
204	Wheeler Road Homes	High	Housing	Single Family Residence	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
205	MADISON ST BRIDGE, OVER CHITTENANGO CREEK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5	3	45	High
206	WEST MAIN STREET BRIDGE, OVER CALLAHAN BROOK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5	3	45	High
207	Rail Trail Bridge over Oneida Creek	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5	3	45	High
208	GENESEE ST BRIDGE, OVER CHITTENANGO CREEK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
209	Oil & Gas Well - Chittenango Well 1	Extreme	Infrastructure Systems	Liquid Fuels	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
210	RUSSELL STREET BRIDGE, OVER CHITTENANGO CREEK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
211	TUSCARORA ROAD BRIDGE, OVER CHITTENANGO CREEK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
212	CRUMB HILL ROAD BRIDGE, OVER E B TIOUGHNIOGA C	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High



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#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
213	MECHANIC STREET BRIDGE, OVER TIOUGHNIOGA EAST BRANCH	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
214	MILL STREET BRIDGE, OVER SANGERFIELD RIVER	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.5	3	40.5	High
215	MORRISVILLE VILLAGE - DRILLED WELL #1	Extreme	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
216	SCONONDOA STREET BRIDGE, OVER ONEIDA CREEK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
217	MORRISVILLE STATE COLLEGE - DRILLED WELL #3	Extreme	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	4	3	36	High
218	Camp Fiver Water Treatment	Extreme	Infrastructure Systems	Water Supply	No	No	Low	Yes	No	Yes	Yes	No	Yes	2	3	4	3	36	High
219	PROSPECT STREET BRIDGE, OVER ONEIDA CREEK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	No	Yes	No	Yes	Yes	2	3	4	3	36	High
220	BOATYARD ROAD BRIDGE, OVER CANAL FEEDER	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	4	3	36	High
221	Oneida Sewage Treatment Plant	High	Infrastructure Systems	Wastewater	No	Yes, FEMA	High	Yes	No	Yes	No	Yes	Yes	2	3	3	3	27	High
222	NORTH PETERBORO STREET BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
223	Windstream NY	High	Infrastructure Systems	Telecommunications	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
224	UTICA STREET BRIDGE, OVER TIOUGHNIOGA CREEK	Extreme	Infrastructure Systems	Transportation	No	No	Low	Yes	No	Yes	No	Yes	Yes	2	3	4	2	24	High
225	CANAL ROAD BRIDGE, OVER COWASELON CK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
226	INTERSTATE 90 BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
227	OLD STATE ROUTE 46 BRIDGE, OVER ONEIDA CR	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
228	SENECA AVENUE BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
229	Cingular Wireless Cell Tower	High	Infrastructure Systems	Telecommunications	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
230	INTERSTATE 90 BRIDGE, OVER CANASTOTA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
231	NEW BOSTON STREET BRIDGE, OVER OWLVILLE CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
232	Niagara Mohawk Electrical Substation	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
233	NORTH MAIN STREET BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
234	ALBANY STREET BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
235	BURR STREET BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
236	CAZENOVIA VILLAGE - DRILLED WELL NIGHT USE	High	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
237	National Grid Electrical Substation	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate



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238	MIDDLE LAKE ROAD BRIDGE, OVER MD BR TIOUGHNIAGA	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
239	BROOKLYN STREET BRIDGE, OVER CHENANGO RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
240	MORRISVILLE STATE COLLEGE - DRILLED WELL #1 & 2	Extreme	Infrastructure Systems	Water Supply	No	No	Low	Yes	No	Yes	No	No	Yes	1.5	3	3.5	2	21	Moderate
241	BINGLEY ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
242	MILL ROAD BRIDGE, OVER OTSELIC RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
243	Hamilton Municipal Airport Runway	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
244	HAMILTON VILLAGE - PAYNE BROOK WELL #1 & #2 AND TREATMENT	High	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
245	Hamilton Village Water Works	High	Infrastructure Systems	Wastewater	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
246	INTERSTATE 90 BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
247	NORTH COURT STREET BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
248	TACKABURY ROAD BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
249	BENNETT ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
250	BURDICK AVENUE BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
251	MIDDLE ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
252	PETERBORO ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
253	SHERRILL ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
254	SWALLOWS BRIDGE ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
255	Telecommunications Tower	High	Infrastructure Systems	Telecommunications	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
256	UPPER LENOX AVENUE BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
257	WEST ELM STREET BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
258	SOUTH BUTLER ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
259	BOLIVAR ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
260	DYKE ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
261	GEE ROAD BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
262	KIRKVILLE ROAD BRIDGE, OVER BLACK CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate



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263	LAKEPORT ROAD BRIDGE, OVER VLY CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
264	MCGRAW ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
265	NEW BOSTON ROAD BRIDGE, OVER CANASERAGA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
266	OLMSTEAD ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.5	2	21	Moderate
267	CENTER STREET BRIDGE, OVER UNADILLA RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
268	MAIN STREET BRIDGE, OVER BEAVER CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
269	SWAMP ROAD BRIDGE, OVER SANGERFIELD RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
270	WELCH ROAD BRIDGE, OVER UNADILLA RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
271	YAW BRIDGE ROAD BRIDGE, OVER UNADILLA RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
272	BALLINA RD BRIDGE, OVER CHITTENANGO CK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
273	CONSTINE BRIDGE ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
274	GORGE ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
275	O-WE-RA POINT WATER SUPPLY - WELL 1 and Treatment	High	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
276	O-WE-RA POINT WATER SUPPLY - WELL 2	High	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
277	POMPEY HOLLOW ROAD BRIDGE, OVER LIMESTONE CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
278	RIPPLETON CROSS ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
279	EAST LAKE ROAD BRIDGE, OVER MIDDLE BRANCH TIOUGHNIOGA	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
280	HUNT ROAD BRIDGE, OVER MIDDLE BRANCH TIOUGHNIOGA	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
281	SMITH ROAD BRIDGE, OVER TIOUGHNIOGA MIDDLE BRANCH	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
282	CAREY ROAD BRIDGE, OVER CHENANGO RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
283	EATON ROAD BRIDGE, OVER CHENANGO RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
284	LEBANON HILL ROAD BRIDGE, OVER EATON BROOK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
285	NYSEG Electrical Substation	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
286	RIVER ROAD BRIDGE, OVER EATON BROOK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate





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287	EAST HILL ROAD BRIDGE, OVER OTSELIC RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
288	GEORGETOWN W.D. - DRILLED WELLS #1 & #2	High	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
289	LEBANON ROAD BRIDGE, OVER OTSELIC RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
290	STATE ROUTE 26 BRIDGE, OVER OTSELIC CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
291	CRANSTON ROAD BRIDGE, OVER SANGERFIELD RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
292	EARLVILLE ROAD BRIDGE, OVER SANGERFIELD RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
293	GREEN ROAD BRIDGE, OVER SANGERFIELD RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
294	LARKIN ROAD BRIDGE, OVER SANGERFIELD RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
295	WILLEY ROAD BRIDGE, OVER SANGERFIELD RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
296	ARMSTRONG ROAD BRIDGE, OVER CHENANGO RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
297	LEBANON ROAD BRIDGE, OVER CHENANGO RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
298	MIDDLEPORT ROAD BRIDGE, OVER PAYNE BRK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
299	Oil & Gas Well - Carhart 1, American Natural Resources, Inc.	High	Infrastructure Systems	Liquid Fuels	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
300	RANDALLSVILLE ROAD BRIDGE, OVER CHENANGO RIVER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
301	BEE BEE BRIDGE ROAD BRIDGE, OVER OLD ERIE CANAL	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
302	HARDWOOD ROAD BRIDGE, OVER COWASELON CK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
303	INTERSTATE 90 BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
304	CLOCKVILLE ROAD BRIDGE, OVER COWASELON CK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
305	CREEK ROAD BRIDGE, OVER COWASELON CK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
306	JOHNNY CREEK HILL ROAD BRIDGE, OVER MADISON RES. FEEDER	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
307	ORISKANY FALLS VILLAGE - WELL #1, #2, #3 AND WATER TREATMENT	High	Infrastructure Systems	Water Supply	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
308	WATER STREET BRIDGE, OVER ORISKANY CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
309	LYON ROAD BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
310	CREEK ROAD BRIDGE, OVER COWASELON CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate



# NY Rising Madison County Resiliency Plan

Community Asset Inventory and Risk Assessment																			
Asset Information								Landscape Attributes							Risk Assessment (100-year event)				
#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
311	GLASS FACTORY ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
312	OXBOW ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
313	PETERBORO ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
314	HASLAUER ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
315	VALLEY MILLS ROAD BRIDGE, OVER ONEIDA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
316	BLACK CREEK ROAD BRIDGE, OVER BLACK CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
317	CREEK ROAD BRIDGE, OVER CANASERAGA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
318	HARSH ROAD BRIDGE, OVER CANASERAGA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
319	I-90 flood-risk area between mile marker 266.8 and 270.4	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
320	INTERSTATE 90 BRIDGE, OVER CANASERAGA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
321	LAKEPORT ROAD BRIDGE, OVER PENNOCK DITCH	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
322	National Grid Gas Measuring Station	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
323	STATE ROUTE 31 BRIDGE, OVER CANASERAGA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
324	STATE ROUTE 31 BRIDGE, OVER CHITTENANGO CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
325	STATE ROUTE 5 BRIDGE, OVER CANASERAGA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
326	TAG ROAD BRIDGE, OVER CANASERAGA CREEK	High	Infrastructure Systems	Transportation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
327	Telecommunications Tower	High	Infrastructure Systems	Telecommunications	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
328	Chittenango Landing Museum	Extreme	Natural and Cultural Resources	Museums, Performing Arts Centers, Stadiums	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5	3	45	High
329	Chittenango United Methodist Church	Extreme	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
330	Stickles Park	Extreme	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
331	Morrisville Library	Extreme	Natural and Cultural Resources	Libraries	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
332	Sconondoa Playground	Extreme	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.5	3	40.5	High
333	BSA Troup 18	High	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4	2	24	High
334	Canastota Recreation Park	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate



Community Asset Inventory and Risk Assessment																			
Asset Information								Landscape Attributes							Risk Assessment (100-year event)				
#	Asset	Risk Area	Asset Class	Asset Subcategory	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive flood protection measures absent	Asset site below base flood elevation	Freeboard elevation less than two feet above BFE	Asset near point of confluence	Asset near stormwater system discharge	Vegetated stream bank buffers absent	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score	Risk Level
335	American Legion	High	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
336	Cazenovia Club	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
337	Cazenovia Memorial Association Ball Fields	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
338	Lakeland Park	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
339	Eaton Street Complex	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
340	Maxwell Field	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.5	2	21	Moderate
341	Camp High Esteem	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
342	Cazenovia Town Park at north end of Cazenovia Lake	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
343	Georgetown Fireman's Park	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
344	Canaan Campgrounds	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
345	Believers Chapel	High	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
346	Lincoln Methodist Church	High	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
347	Oxbow County Park	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate
348	Sullivan Town Park	High	Natural and Cultural Resources	Parks and Recreation	No	No	Low	Yes	Yes	Yes	No	No	Yes	2	3	3	2	18	Moderate



## C. GROUPED RECOVERY PROJECT PROFILES

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Due to their similarity, some recovery projects were grouped in the Section IV Project Profiles. More detailed, individual profiles for the grouped projects can be found on the following pages.

Grouped recovery projects include:

Culvert Repairs: P6-11, P14-15, P17, P19-20, P22-26, P28-32, P35-36, P44-46

Road Reconstruction and Improvements: P2, P3, P13, P27, P33, P34

Streambank Stabilization and Restoration: P1, P16, P18, P21, P43

Stream Debris Removal: P4, P47



## P1

## Streambank Stabilization and Restoration

### TOWN OF BROOKFIELD

#### Project Description

The storms resulted in the waters overtopping streambanks, severely eroding and washing out areas. This project will reestablish approximately 1,000 linear feet of eroded and washed out streambank and install channel lining rock and check dams. The Town Highway Department will perform the construction, keeping the costs low.

#### Project Location

Unnamed creeks and streams in the hamlet of North Brookfield and Mill Creek in the Hamlet of Leonardsville, both in the Town of Brookfield



#### Estimated Cost

Engineering/Design:	\$20,000
Construction:	\$100,000
Total:	\$120,000 (Funding)

#### Project Benefits

Restoration of the stream flow path; protection of residences and roads from flooding

#### Implementation Timeframe

Near Term –within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of Brookfield



Photo Credit: USDA Natural Resources Conservation Service (NRCS)



## P2

### Maple Road Reconstruction

#### TOWN OF CAZENOVIA

##### **Project Description**

Maple Road was damaged from flooding that occurred during the Summer 2013 storms. This project will involve the reconstruction of approximately 1,000 feet of Maple Road, from State Route 13 west to Lincklaen Road.

##### **Project Location**

Maple Road in the Town of Cazenovia



##### **Estimated Cost**

Engineering/Design:	\$3,465
Construction:	<u>\$17,327</u>
Total:	\$20,792 (Funding)

##### **Project Benefits**

Restoration of the road to a safe, operational condition; protection of the road from flooding and degradation

##### **Implementation Timeframe**

Near Term –within 18 Months

##### **Status of Project**

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

##### **Anticipated Project Lead(s)**

Town of Cazenovia



Photo Credit: NYS Digital Orthoimagery Program 2009



**P3**

## Ridge Road Flood Reconstruction

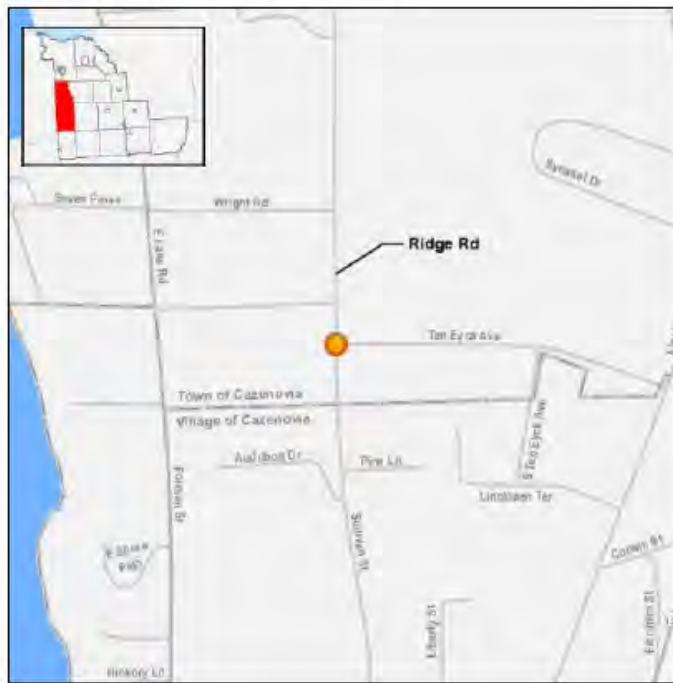
TOWN OF CAZENOVIA

### Project Description

The flooding resulted in damages to Ridge Road and the surrounding drainage area. The project will include flood and stormwater mitigation via the installation of storm sewer piping and culverts, and ditch stabilization near the entrance of Cazenovia Lake at Ridge Road and Ten Eyck Avenue.

### Project Location

Ridge Road in the Town of Cazenovia



### Estimated Cost

Engineering/Design:	\$90,781
Construction:	<u>\$18,156</u>
Total:	\$108,937 (Funding)

### Project Benefits

Restoration of the road to a safe, operational condition; improvement in stormwater drainage and flow; improvements to water quality

### Implementation Timeframe

Near Term –within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Cazenovia



Photo Credit: NYS Digital Orthoimagery Program 2009



## P4

### Stream Debris Removal MADISON COUNTY

#### Project Description

The damage from the summer of 2013 storms resulted in the accumulation of debris subsequently creating jams near streams. This project will identify those locations as well as remove the debris.

#### Project Location

Major streams within Madison County such as Oneida Creek, Chenango River, Chittenango Creek and Unadilla River as well as smaller tributaries.



#### Estimated Cost

Engineering/Design:	\$10,000
Construction:	\$50,000
<b>Total:</b>	<b>\$60,000 (Funding)</b>

#### Project Benefits

Restoration of the streams to a safe, operational condition; protection of adjacent municipalities, residences, businesses, land and infrastructure

#### Implementation Timeframe

Near Term –within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Madison County



Photo Credit: Town of DeRuyter





## P6

### Poolville Road Culvert Repairs MADISON COUNTY

#### Project Description

The flooding resulted in damages to the culvert at Poolville Road (County Route 89), between Smith Road and Hamilton Road. The project will replace the existing 4' concrete pipe with a 16'-2" by 5'-1" aluminum box culvert, 49.5' in length.

#### Project Location

Poolville Road (County Route 89) in the Town of Hamilton



#### Estimated Cost

Engineering/Design:	\$14,000
Construction:	\$70,000
<b>Total:</b>	<b>\$84,000 (Funding)</b>

#### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Madison County



Photo Credit: Madison County Planning



## P7

### Fearon Road Culvert Repairs MADISON COUNTY

#### Project Description

The flooding resulted in damages to the culvert at Fearon Road (County Route 47), between Pratts Road and Rocks Road. The project will replace the existing 4' concrete pipe with a 14'-8" by 4'-1" aluminum box culvert, 49.5' in length.

#### Project Location

Fearon Road (County Route 47) in the Town of Eaton



#### Estimated Cost

Engineering/Design:	\$11,000
Construction:	\$55,000
Total:	\$66,000 (Funding)

#### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Madison County



Photo Credit: Madison County Planning



**P8**

## Dugway Road Culvert Repairs MADISON COUNTY

### Project Description

The flooding resulted in damages to the culvert on Dugway Road (County Route 60) The project will replace the existing pipe arch with a 14'-8" by 4'-1" aluminum box culvert, 81' in length.

### Project Location

Dugway Road (County Route 60) in the Town of Nelson



### Estimated Cost

Engineering/Design:	\$16,800
<u>Construction:</u>	<u>\$84,000</u>
Total:	\$100,800 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Madison County



Photo Credit: Madison County Planning



## P9

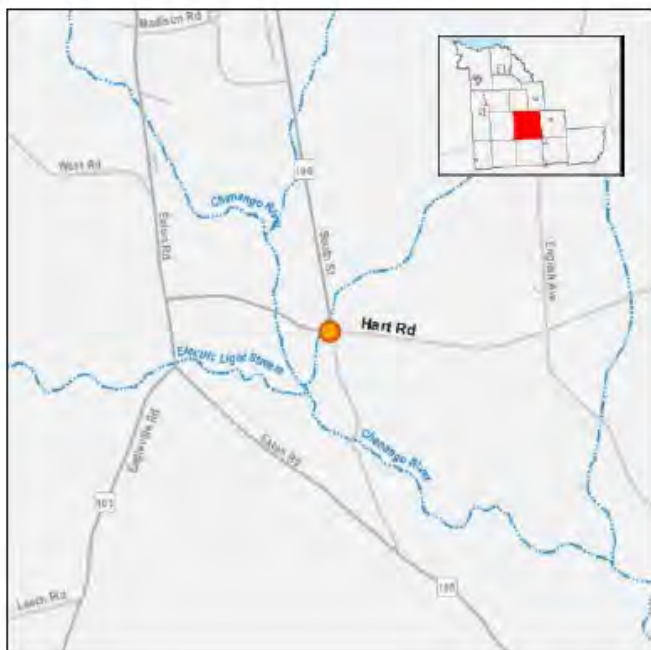
### Hart Road Culvert Repairs MADISON COUNTY

#### Project Description

The flooding resulted in damages to the culvert on Hart Road (County Route 106), just west of South Road. The damaged existing 2' corrugated metal pipe will be replaced with a 48" HDPE pipe with steel end sections, 70 feet in length.

#### Project Location

Hart Road (County Route 106) in the Town of Eaton



#### Estimated Cost

Engineering/Design:	\$5,200
Construction:	\$1,040
Total:	\$6,240 (Funding)

#### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Madison County



Photo Credit: Madison County Planning



**P10**

## Reservoir Road Culvert Repairs MADISON COUNTY

### Project Description

The flooding resulted in damages to the culvert at Reservoir Road (County Route 57). The damaged existing 2' corrugated metal pipe will be replaced with a 48" steel reinforced polyethylene (SRPE) pipe with steel end section, 48 feet in length.

### Project Location

Reservoir Road (County Route 57) in the Town of Cazenovia



### Estimated Cost

Engineering/Design:	\$1,000
Construction:	\$5,000
Total:	\$6,000 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Madison County



Photo Credit: NYS Digital Orthoimagery Program 2008



## P11 Skaneateles Turnpike Culvert Repair

MADISON COUNTY

### Project Description

The flooding resulted in damages to the culvert on Skaneateles Turnpike near York Road (County Route 80). The damaged existing 3' corrugated metal pipe will be replaced with a 12'-3" by 4'-5" aluminum box culvert, 49.5' in length.

### Project Location

Skaneateles Turnpike (County Route 80) east of York Road in the Town of Brookfield



### Estimated Cost

Engineering/Design:	\$8,600
Construction:	\$43,000
Total:	\$51,600 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Madison County



Photo Credit: NYS Digital Orthoimagery Program 2008



## P13

### South Hill Road Stabilization and Restoration

TOWN OF DERUYTER

#### Project Description

The flooding eroded roadside ditches resulting in damages to South Hill Road. The project will include the installation of four catch basins with grates, replacement of 400 feet of culvert pipe and repaving of 0.15 miles along South Hill Road creating an underground closed drainage system.

#### Project Location

South Hill Road the Town of DeRuyter



#### Estimated Cost

Engineering/Design:	\$6,212
Construction:	\$31,060
Total:	\$37,272 (Funding)

#### Project Benefits

Restoration of the road to a safe, operational condition; large reduction to the amount of sediment entering the Village’s storm sewer system; protection of the road from flooding and degradation; great reduction in maintenance and repair costs

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of DeRuyter



Photo Credit: Town of DeRuyter



## P14

### Carey Road Culvert Repair

TOWN OF DERUYTER

#### Project Description

Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in debris blocking culverts at Carey Road and damages to homes and the road. This project will replace the two, side by side 60" culverts with a bottomless arch culvert of greater capacity to handle peak flow making it less susceptible to debris blockage.

#### Project Location

Carey Road in the Town of DeRuyter



#### Estimated Cost

Engineering/Design:	\$24,000
Construction:	\$120,000
Total:	\$144,000 (Funding)

#### Project Benefits

Restoration of the culvert to a safe, operational condition; less susceptibility to debris build up; improved flow during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of DeRuyter



Photo Credit: Town of DeRuyter





## P15

### Tallett Road Culvert Repair

TOWN OF DERUYTER

#### Project Description

Flooding of the Middle Branch Tioughnioga Creek and an unnamed tributary resulted in damages to Tallett Road and a home. The project will replace two, side by side (24" and 30") culverts with a 71" by 47" galvanized squash pipe culvert, stabilize the channel and install grade stabilization structures.

#### Project Location

Tallett Road in the Town of DeRuyter



#### Estimated Cost

Engineering/Design:	\$2,773
<u>Construction:</u>	<u>\$13,867</u>
Total:	\$16,640 (Funding)

#### Project Benefits

Restoration of the culvert to a safe, operational condition; reduction of water velocity and erosion; improved flow during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of DeRuyter



Photo Credit: Town of DeRuyter



## P16

### Carey Road Streambank Stabilization and Restoration

TOWN OF DERUYTER

#### Project Description

Flooding of an unnamed tributary to the Middle Branch Troughnioga Creek resulted in damages to Carey Road and adjacent homes. The road was closed for five days. The project will include 200 linear feet of bank stabilization utilizing pinned rip-rap and replacement guide rails along Carey Road.

#### Project Location

Carey Road in the Town of DeRuyter



#### Estimated Cost

Engineering/Design:	\$18,280
Construction:	\$91,400
Total:	\$109,680 (Funding)

#### Project Benefits

Reestablishment of eroded and washed out areas of streambank; protection of residences and the road from flooding

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of DeRuyter



Photo Credit: Town of DeRuyter



## P17

### Williams Corners Road Culvert Repairs

TOWN OF EATON

#### Project Description

Flooding of the Electric Light Stream resulted in damages to Williams Corners Road including three culverts being washed out, taking the road with it. The road was closed for five weeks and made access to properties difficult. The project will include replacement with single arch culvert to handle flows.

#### Project Location

Williams Corners Road over Electric Light Stream in Eaton.



#### Estimated Cost

Engineering/Design:	\$40,000
Construction:	\$200,000
Total:	\$240,000 (Funding)

#### Project Benefits

Restoration of the road and culverts to safe, operational conditions; protection of residences and the road from flooding

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of Eaton



Photo Credit: NYS Digital Orthoimagery Program 2008



**P18**

## Route 20 Flooding Remediation

**TOWN OF EATON**

### **Project Description**

Flooding of an unnamed tributary to the Chenango River resulted in damages to eight homes and businesses and Route 20. Lane closures were needed on Route 20. The project will clean out and reshape approximately 300 linear feet of stream channel coming into Village of Morrisville to handle the flow of a 100-year storm.

### **Project Location**

W Main Street (US Route 20) over the Chenango River in the Town of Eaton



### **Estimated Cost**

Engineering/Design:	\$7,000
Construction:	\$35,000
<b>Total:</b>	<b>\$42,000 (Funding)</b>

### **Project Benefits**

Restoration of the stream, the adjacent road and surrounding area to safe, operational conditions; improved stream flow during storm events; protection of residences, businesses and roads from flooding

### **Implementation Timeframe**

Near Term – within 18 Months

### **Status of Project**

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### **Anticipated Project Lead(s)**

Town of Eaton



Photo Credit: NYS Digital Orthoimagery Program 2008



**P19**

## Roberts Road Culvert Repair

TOWN OF EATON

### Project Description

The flooding resulted in damages to the culvert at Roberts Road. The project will repair and upgrade the first culvert below Williams Corner Road to handle calculated flow levels.

### Project Location

Roberts Road in the Town of Eaton



### Estimated Cost

Engineering/Design:	\$40,000
Construction:	\$200,000
Total:	\$240,000 (Funding)

### Project Benefits

Restoration of the culvert to safe, operational conditions; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Eaton



Photo Credit: NYS Digital Orthoimagery Program 2008



**P20**

## Jones Road Repair

**TOWN OF GEORGETOWN**

### **Project Description**

Flooding of an unnamed tributary to the Middle Branch Tioughnioga Creek resulted in damages to Jones Road impeding access for residents. The project will include a culvert repair and improvement along the road. The Town Highway Department will perform the construction, keeping the costs low.

### **Project Location**

Jones Road in the Town of Georgetown



### **Estimated Cost**

Engineering/Design:	\$2,000
Construction:	\$10,000
Total:	\$12,000 (Funding)

### **Project Benefits**

Restoration of the culverts and road to a safe, operational condition; protection of residents and roads from flooding

### **Implementation Timeframe**

Near Term – within 18 Months

### **Status of Project**

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### **Anticipated Project Lead(s)**

Town of Georgetown



Photo Credit: NYS Digital Orthoimagery Program 2008



## P21 Bronder Hollow Road Bank Stabilization and Restoration

### TOWN OF GEORGETOWN

#### Project Description

Flooding of the adjacent Muller Brook resulted in damages to Bronder Hollow Road. The project will restore and improve eroded and washed out areas through stabilization of the bank of Muller Brook for approximately 100 linear feet.

#### Project Location

Bronder Hollow Road in the Town of Georgetown



#### Estimated Cost

Engineering/Design:	\$3,000
Construction:	\$15,000
Total:	\$18,000 (Funding)

#### Project Benefits

Reestablishment and improvement of eroded and washed out areas; stabilization of the bank; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of Georgetown



Photo Credit: NYS Digital Orthoimagery Program 2008-2009



## P22

### Bonney Road Culvert Repairs

TOWN OF GEORGETOWN

#### Project Description

Flooding of the Stone Mill Brook resulted in damages to the culvert on Bonney Road. The project will include the repair of this culvert.

#### Project Location

Bonney Road over Stone Mill Brooke in the Town of Georgetown



#### Estimated Cost

Engineering/Design:	\$3,000
Construction:	\$15,000
Total:	\$18,000 (Funding)

#### Project Benefits

Restoration of the culvert to a safe, operational condition; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of Georgetown



Photo Credit: NYS Digital Orthoimagery Program 2008





**P23**

## Williams Road Culvert Repair

TOWN OF HAMILTON

### Project Description

The flooding resulted in damages to the culvert at Williams Road and S. Hamilton Road. The project will replace the existing 10' by 30' culvert with a 14' box culvert and guide rail.

### Project Location

Williams Road over Pleasant Brook in the Town of Hamilton



### Estimated Cost

Engineering/Design:	\$60,000
Construction:	\$300,000
Total:	\$360,000 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Hamilton

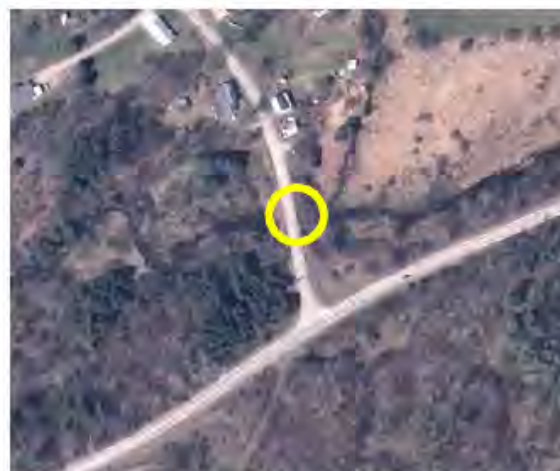


Photo Credit: NYS Digital Orthoimagery Program 2008



**P24**

## Harris Road Culvert Repair

TOWN OF HAMILTON

### Project Description

Flooding of an unnamed tributary to Beaver Creek resulted in damages to the culvert at Harris Road and Moscow Road. The project will replace the existing culvert with a 6' by 30' culvert.

### Project Location

Harris Road in the Town of Hamilton



### Estimated Cost

Engineering/Design:	\$15,000
Construction:	\$75,000
Total:	\$90,000 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Hamilton



Photo Credit: NYS Digital Orthoimagery Program 2008



**P25**

## Borden Road Culvert Repair

TOWN OF HAMILTON

### Project Description

Flooding of an unnamed tributary to the Sangerfield River resulted in damages to the culvert at Borden Road. The project will replace the existing, undersized 30" culvert with a new 4' culvert, 25' in length.

### Project Location

Borden Road in the Town of Hamilton



### Estimated Cost

Engineering/Design:	\$2,000
Construction:	\$10,000
Total:	\$12,000 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Hamilton



Photo Credit: NYS Digital Orthoimagery Program 2008



**P26**

## Carncross Road Bridge Repair

TOWN OF LEBANON

### Project Description

Flooding of the South Lebanon Brook resulted in damages to the bridge at Carncross Road/South Lebanon Road and adjacent residences. The project will replace the headwall pipe and poured square boxed culvert pipe with wings of 16 feet.

### Project Location

Carncross Road/South Lebanon Road over South Lebanon Brook in the Town of Lebanon



### Estimated Cost

Engineering/Design:	\$18,659
Construction:	\$93,294
Total:	\$111,953 (Funding)

### Project Benefits

Restoration of the bridge to a safe, operational condition; dramatic improvement to water movement and drainage; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Lebanon



Photo Credit: NYS Digital Orthoimagery Program 2008



**P27**

## Thompson Hill Road Repairs

TOWN OF LEBANON

### Project Description

The flooding damaged Thompson Hill Road. This project will include approximately 1,500 linear feet of road ditch reshaping and shoulder reestablishment to the bottom of ditch with medium rip rap to stabilize the slope. Medium rip rap will also be used to ensure better road stability.

### Project Location

Thompson Hill Road/River Road in the Town of Lebanon



### Estimated Cost

Engineering/Design:	\$13,160
Construction:	\$65,800
<b>Total:</b>	<b>\$78,960 (Funding)</b>

### Project Benefits

Restoration of the road to a safe, operational condition; reestablishment and stabilization of the slope; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Lebanon



Photo Credit: NYS Digital Orthoimagery Program 2008



**P28**

## Falin Road Culvert Repairs

TOWN OF MADISON

### Project Description

The flooding resulted in the blockage of culverts and the flooding of five homes at Falin Road. The project will include replacement of two 2-foot culverts with a single 5' by 7' squash culvert to handle greater capacity and prevent debris build up.

### Project Location

Falin Road in the Town of Madison



### Estimated Cost

Engineering/Design:	\$6,000
Construction:	\$30,000
<b>Total:</b>	<b>\$36,000 (Funding)</b>

### Project Benefits

Restoration of the culvert to a safe, operational condition; less susceptibility to debris build up; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Madison



Photo Credit: NYS Digital Orthoimagery Program 2008



**P29**

## Abbert Road Culvert Repairs

TOWN OF MADISON

### Project Description

Flooding of an unnamed tributary to the Sangerfield River resulted in the wash out of a single 4' by 5' culvert at Abbert Road causing severe damage to the road and adjacent residences and agricultural lands. The project will include replacement of the damaged culvert with a single 5' by 7' squash culvert to handle calculated flows.

### Project Location

Abbert Road in the Town of Madison



### Estimated Cost

Engineering/Design:	\$6,000
<u>Construction:</u>	<u>\$30,000</u>
Total:	\$36,000 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of road, residences and agricultural land from flooding

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Madison



Photo Credit: NYS Digital Orthoimagery Program 2008



## P30

### Jones Road Culvert Repairs

TOWN OF NELSON

#### Project Description

Runoff from forest land resulted in flooding damages to the culvert at Jones Road at the junction of Old State Road. The project will replace the existing 15" by 50' culvert with a 30" by 50' culvert and replace the existing 24" by 50' culvert with a 36" by 50' culvert.

#### Project Location

Jones Road over Electric Light Stream in the Town of Nelson



#### Estimated Cost

Engineering/Design:	\$3,200
Construction:	\$16,000
<b>Total:</b>	<b>\$19,200 (Funding)</b>

#### Project Benefits

Restoration of the culverts to a safe, operational condition; improved flows during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of Nelson



Photo Credit: NYS Digital Orthoimagery Program 2008





## P31

### Hughes Road Culvert Repair

TOWN OF NELSON

#### Project Description

Runoff from higher elevations resulted in flooding damages to the culvert at Hughes Road. The project will replace the existing 15" by 50' culvert with a 24" by 50' culvert.

#### Project Location

Hughes Road in the Town of Nelson



#### Estimated Cost

Engineering/Design:	\$1,000
Construction:	\$5,000
Total:	\$6,000 (Funding)

#### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of Nelson



Photo Credit: NYS Digital Orthoimagery Program 2008



**P32**

## Thomas Road Culvert Repair

TOWN OF NELSON

### Project Description

Runoff from higher elevations resulted in flooding damages to the culvert at Thomas Road. The project will replace the existing 18" by 40' culvert with a 30" by 50' culvert.

### Project Location

Thomas Road in the Town of Nelson



### Estimated Cost

Engineering/Design:	\$1,600
Construction:	\$8,000
Total:	\$9,600 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Nelson

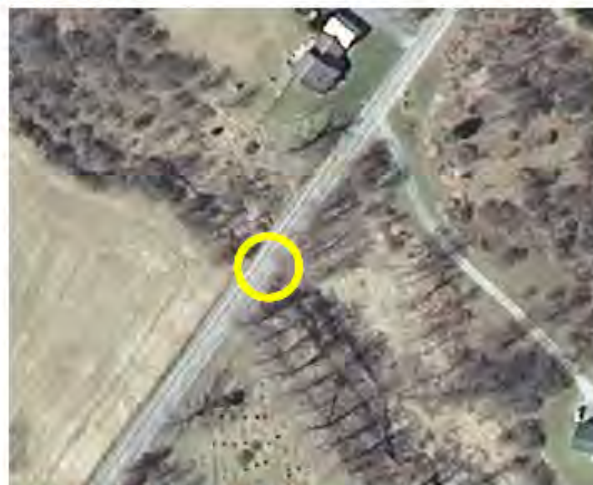


Photo Credit: NYS Digital Orthoimagery Program 2009



**P33**

## Sunrise Boulevard Reconstruction

TOWN OF NELSON

### Project Description

Runoff from higher elevations resulted in flooding damages to Sunrise Boulevard. The project will enlarge and line 200' of ditch and replace a 24" by 30' culvert with a 30" by 30' culvert.

### Project Location

Sunrise Boulevard in the Town of Nelson



### Estimated Cost

Engineering/Design:	\$2,000
Construction:	\$10,000
<b>Total:</b>	<b>\$12,000 (Funding)</b>

### Project Benefits

Restoration of the road to a safe, operation condition; improved drainage; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Nelson



Photo Credit: NYS Digital Orthoimagery Program 2008



**P34**

## North Lake Road Reconstruction

TOWN OF NELSON

### Project Description

Flooding resulted in damages to North Lake Road. The project will install 650' of 18" culvert with 6 drop basins, pave or rip rap bank shoulders, install two concrete headwalls, replace the existing 15" by 100' culvert with a 24" by 100' culvert, and install debris catchers.

### Project Location

North Lake Road in the Town of Nelson



### Estimated Cost

Engineering/Design:	\$18,600
Construction:	\$93,000
<b>Total:</b>	<b>\$111,600 (Funding)</b>

### Project Benefits

Restoration of the road to a safe, operational condition; improved drainage; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Nelson



Photo Credit: NYS Digital Orthoimagery Program 2008-2009



**P35**

## Greene Road Reconstruction

TOWN OF NELSON

### Project Description

Flooding resulted in damages to Greene Road. The project will replace the existing 40' by 30" culvert with an 80' by 30" culvert.

### Project Location

Greene Road over Eaton Brook in the Town of Nelson



### Estimated Cost

Engineering/Design:	\$2,000
Construction:	\$10,000
<b>Total:</b>	<b>\$12,000 (Funding)</b>

### Project Benefits

Restoration of the road to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Nelson

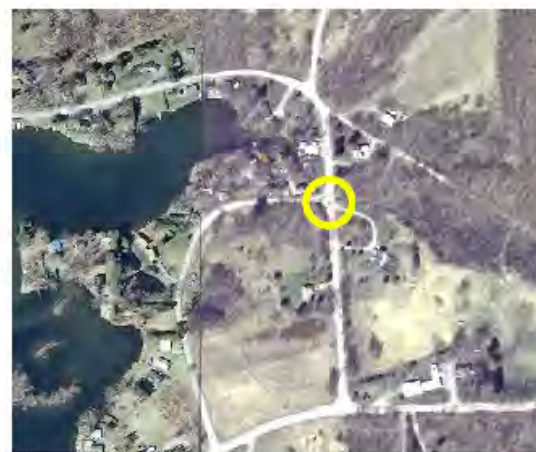


Photo Credit: NYS Digital Orthoimagery Program 2008



**P36**

## North Lake Road at Blue Canoe Reconstruction

**TOWN OF NELSON**

### **Project Description**

Flooding caused damages to North Lake Road as well as multiple homes and businesses. The project will replace the damaged culvert with a 5' by 7' squash culvert to handle calculated flows.

### **Project Location**

North Lake Road at Blue Canoe Grill in the Town of Nelson



### **Estimated Cost**

Engineering/Design:	\$10,000
Construction:	\$50,000
Total:	\$60,000 (Funding)

### **Project Benefits**

Restoration of the road to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### **Implementation Timeframe**

Near Term – within 18 Months

### **Status of Project**

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### **Anticipated Project Lead(s)**

Town of Nelson



Photo Credit: NYS Digital Orthoimagery Program 2009



**P43**

## Maxwell Field Streambank Stabilization and Restoration

**CITY OF ONEIDA**

### **Project Description**

Flooding of the Oneida Creek resulted in erosion, wash outs and damages to the Oneida Creek streambank. This project will repair, reestablish and stabilize approximately 485 linear feet of streambank through placement of riprap and geotextile.

### **Project Location**

Oneida Creek at Maxwell Field in the City of Oneida



### **Estimated Cost**

Engineering/Design:	\$8,000
Construction:	\$40,000
<b>Total:</b>	<b>\$48,000 (Funding)</b>

### **Project Benefits**

Restoration of the stream flow path and streambank; protection of adjacent recreation area from flooding

### **Implementation Timeframe**

Near Term – within 18 Months

### **Status of Project**

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### **Anticipated Project Lead(s)**

City of Oneida



Photo Credit: NYS Digital Orthoimagery Program 2008



# Maxwell Field Streambank Stabilization and Restoration (continued)

CITY OF ONEIDA

Figure 16-02 (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z)

Cross section  
Maxwell

NOTE: DUE TO SOIL TYPE AND PATRIMENT  
DAYS FULL LENGTH RIP RAP WILL BE INSTALLED TO TOP  
OF BANK. EXISTING CHANNEL BOTTOM IS GRAVEL, BANKS  
ARE Silt LOAM + SAND.

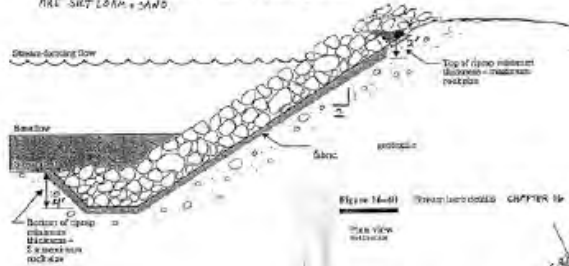
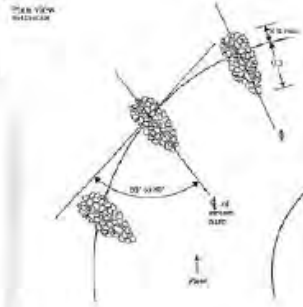


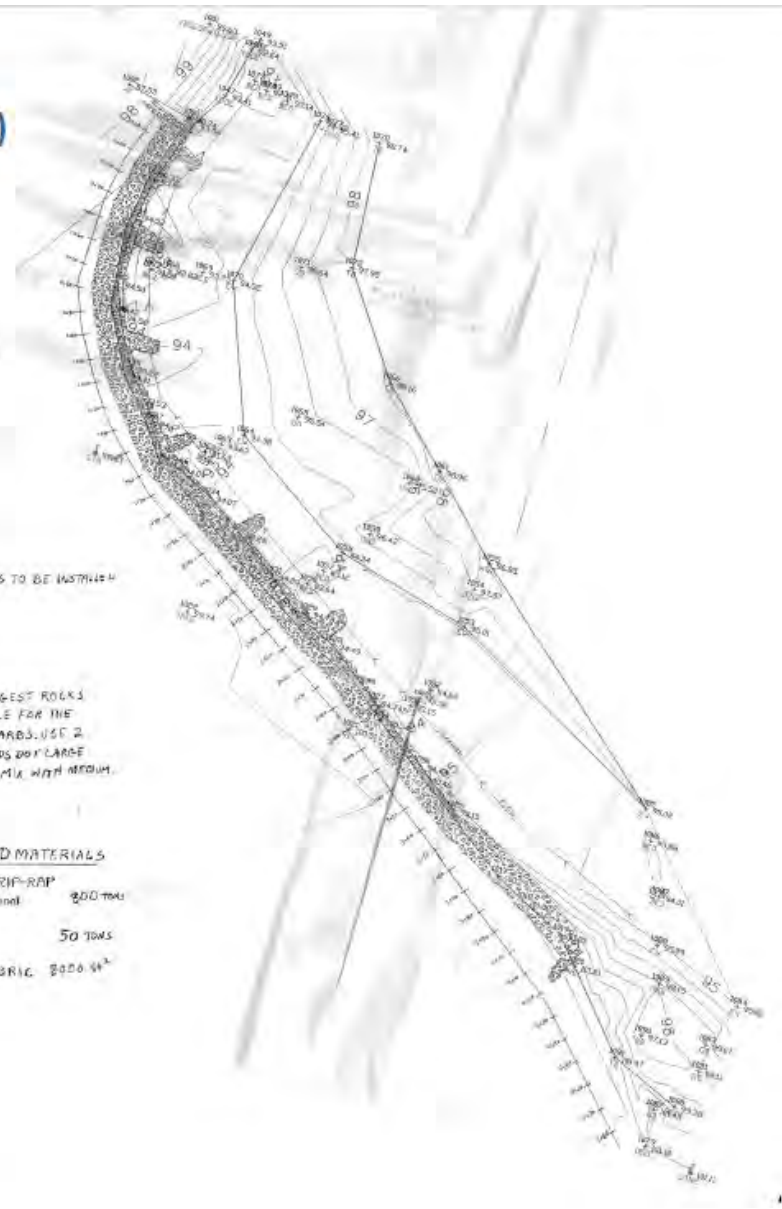
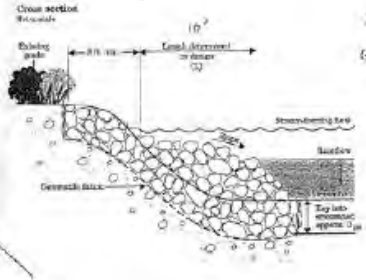
Figure 16-01 Streambank details CHAPTER 16 MAXWELL FIELD RAINBOW



6 STREAM BARS TO BE INSTALLED  
AT 0+10  
0+30  
1+05  
2+10  
2+25

NOTE: USE LARGEST ROCKS  
AVAILABLE FOR THE  
STREAM BARS. USE 2  
TRUCK LOADS DOT LARGE  
RIP RAP TO MIX WITH MEDIUM.

ESTIMATED MATERIALS  
DOT MEDIUM RIP-RAP 200 TONS  
DOT LARGE 50 TONS  
GEOTEXTILE FABRIC 8000 SQ'







**P44**

## Bishop Road Culvert Repair

TOWN OF STOCKBRIDGE

### Project Description

The flooding resulted in damages to Bishop Road. The project will replace the existing undersized 30" round culvert with a 42" round culvert.

### Project Location

Bishop Road in the Town of Stockbridge



### Estimated Cost

Engineering/Design:	\$610
Construction:	<u>\$3,052</u>
Total:	\$3,662 (Funding)

### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Stockbridge



Photo Credit: NYS Digital Orthoimagery Program 2008



## P45

### Quarry Road Culvert Repair

TOWN OF STOCKBRIDGE

#### Project Description

Flooding from an unnamed tributary to Blue and Oneida Creeks resulted in damage to the culvert at Quarry Road. The project will replace the existing undersized 24" by 36" rectangular culvert with a 48" round culvert.

#### Project Location

Quarry Road in the Town of Stockbridge



#### Estimated Cost

Engineering/Design:	\$675
Construction:	\$3,376
Total:	\$4,051 (Funding)

#### Project Benefits

Restoration of the culvert to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

#### Implementation Timeframe

Near Term – within 18 Months

#### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

#### Anticipated Project Lead(s)

Town of Stockbridge



Photo Credit: NYS Digital Orthoimagery Program 2008



**P46**

## Haslauer and Cook Road Culvert Repairs

**TOWN OF STOCKBRIDGE**

### Project Description

The flooding resulted in damages to three culverts on Haslauer and Cook Roads. The project will replace the existing undersized culverts with larger culverts to handle the calculated flows.

### Project Location

Haslauer and Cook Road in the Town of Stockbridge



### Estimated Cost

Engineering/Design:	\$50,000
Construction:	\$250,000
Total:	\$300,000 (Funding)

### Project Benefits

Restoration of the culverts to a safe, operational condition; improved flow during storm events; protection of the road from flooding and degradation

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Stockbridge



Photo Credit: NYS Digital Orthoimagery Program 2008



**P47**

## Logjam Clearings

TOWN OF SULLIVAN

### Project Description

Flooding carried and distributed woody debris causing jams along the Chittenango Creek corridor. The project will remove debris and jam from approximately 10 miles of the creek extending from south of Chittenango to Oneida Lake.

### Project Location

Chittenango Creek to Oneida Lake in the Town of Sullivan



### Estimated Cost

Engineering/Design:	\$6,000
Construction:	\$30,000
<b>Total:</b>	<b>\$36,000 (Funding)</b>

### Project Benefits

Restoration of clear flow path; protection of adjacent municipalities, residences, businesses, land and infrastructure

### Implementation Timeframe

Near Term – within 18 Months

### Status of Project

This project is in the conceptual/planning phase and would require engineering design and permit approvals.

### Anticipated Project Lead(s)

Town of Sullivan



Photo Credit: NYS Department of Environmental Conservation



## D. Potential Funding Sources

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### Regulatory Projects

Many regulatory updates can be carried out by the County Board of Legislators or the local Town Councils at little to no additional cost to the County or Town.

### Planning and Capital Improvement Projects

Local and County planning and capital improvement projects can be undertaken by the local community or County through a variety of funding mechanisms, including special tax districts, stormwater fees, and tax increment financing. However, a variety of State and Federal funding programs are also available. State funding programs that can be accessed through the Consolidated Funding Application (CFA)<sup>100</sup>, and under which project leads may find eligible funding sources for recovery and resiliency projects include:

- **Canalway Grants Program**, offering a maximum of \$150,000 grants for revitalization of canalways;
- **NYS Community Development Block Grant (CDBG) Program**, which provides grants of up to \$50,000 on a cost share basis of up to 95% for planning projects, such as community needs assessments and preliminary engineering reports for resilient housing, affordable housing, or infrastructure upgrades, as well as grants for economic development and infrastructure projects of up to \$750,000 on a cost share basis of up to 40%;
- **NYS Council on the Arts – Arts, Culture, and Heritage Projects**, offering awards of up to \$100,000 with a 50% match, for projects to promote tourism by supporting arts and cultural projects, including revitalization of neighborhoods and development of arts, cultural, and heritage tourism initiatives;
- **NYS DEC/Environmental Facility Corporation's (EFC's) Wastewater Infrastructure Engineering Planning Grant**, which offers grants of up to \$50,000 to municipalities to implement wastewater infrastructure planning/engineering activities;
- **NYS DOS Local Waterfront Revitalization Program**, which is a 50:50 matching grant reimbursement program for preparing or implementing Local Waterfront Revitalization Programs; redeveloping hamlets, downtowns, and urban waterfronts; planning or constructing land and water-based trails; and preparing or implementing a lakewide or watershed revitalization plan;
- **NYS DOS Local Government Efficiency Program**, which offers reimbursement grants of up to \$100,000 for planning activities with 50% match funds;
- **EFC's Green Innovation Grant Program**, which offers grants, with a 10% local match, to create and maintain green, wet-weather infrastructure;
- **Empire State Development (ESD) Strategic Planning and Feasibility Studies**, which offers grants of up to \$100,000 for strategic development plans and site/facility feasibility studies,



## NY Rising Madison County Resiliency Plan

with a matching funds requirement of at least 50% of total project cost;

- **ESD Grant Funds**, which provides grants to the Regional Economic Development Councils to carry out 5-year strategic plans, including projects for infrastructure investment and economic growth investment (requires at least a 10% applicant contribution);
- **NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants**, which offers \$25,000 to \$250,000 grants, with a 25% cost share, for sustainability planning projects such as comprehensive planning, zoning amendments, and predevelopment technical assistance for specific projects, and \$500,000 to \$5,000,000 grants, with a 25% cost share, for community-scale sustainability projects;
- **New York Main Street Technical Assistance**, which offers grants up to \$250,000 for building renovations and streetscape enhancements and up to \$20,000 for technical assistance for feasibility studies and design guidelines;
- **Market New York**, which provides capital grant funding, with a minimum of 10% applicant contribution, for tourism marketing and facilities; and
- **NYS Office of Parks, Recreation, & Historic Preservation – Environmental Protection Fund Municipal Grant Program**, providing grants for the acquisition, preservation, and planning of parks, historic properties, and heritage area systems.

Additional New York State funding programs include:

- **NYS DEC/EFC Clean Water State Revolving Fund (CWSRF)** provides low-interest rate financing to municipalities to construct water quality protection projects such as sewers and wastewater treatment facilities;
- **NYS DOS Community Services Block Grant (CSBG)** works with a network of Community Action Agencies (CAAs) and Community Action Programs to provide the services and activities that combat the central causes of poverty;
- **NYS Department of Transportation (DOT)** offers funding for roadway improvements and culvert and bridge replacements, as well as pedestrian and bicycle paths;
- **Office of Community Renewal (OCR) Urban Initiatives Program (UI)** provides financial assistance to eligible cities, towns, and villages with populations below 50,000 and counties with an area population under 200,000, to provide decent, affordable housing and expanded economic opportunities, principally for persons of low and moderate income; and
- **OCR Rural Area Revitalization Projects (RARP)** provides financial and technical resources to communities for the restoration and improvement of housing, commercial areas, and public/community facilities in rural areas of the state.

Federal funding programs that may be applied for include:

- **U.S. Army Corps of Engineers (USACE) Floodplain Management Services Program** provides guidance and assistance to communities, including “Special Studies” on all aspects of floodplain management;



- **USACE Planning Assistance to States Program** offers annual funding for planning studies on water quality and flood risk issues on a 50:50 Federal/non-Federal cost share basis;
- **U.S. Department of Transportation (USDOT) Transportation Investment Generating Economic Recovery (TIGER)** had \$600 million available in the 2014 cycle, with a required amount set aside for rural areas (the program pays 80% of costs although up to 100% may be funded in rural areas);
- **U.S. Environmental Protection Agency (EPA) Clean Water State Revolving Fund**, which provides watershed and stormwater management planning grants;
- **EPA Wetlands Funding**, which provides watershed and stormwater management planning grants;
- **EPA Clean Water Act Nonpoint Source Grant (Section 319 Grants)**, which provides funding to the NYS DEC annually that can be used to support education and training on stormwater runoff issues and green infrastructure;
- **Centers for Disease Control and Prevention's (CDC) Public Health Emergency Preparedness Cooperative Agreement Grant**, which is a source of funding available to state, local, tribal and territorial public health departments aimed to improve their ability to effectively respond to public health threats, including natural disasters;
- **FEMA's Hazard Mitigation Grant Program (HMGP)**, which provides reimbursement grants with a 25% cost share to communities to implement projects that permanently reduce risk from natural hazards<sup>101</sup>;
- **FEMA Hazard Mitigation Assistance**, which includes several cost-share grant programs for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages, including infrastructure upgrades, home elevations, land acquisition, and other measures; and
- **U.S. Housing and Urban Development Community Development Block Grant (CDBG) Program**, a cost-share program for up to 95% of total project costs, administered by the NYS Office of Community Renewal, that can be used for community development projects, including public facilities, particularly if the project benefits low-income residents.

### Capacity Building

Funding to support local municipal staff for compliance efforts—such as a floodplain manager, building inspectors, and water resource engineers—would typically be sourced at the local level. However, there may be funding opportunities for workshops and training of local staff.

Programs nationwide offer free training and educational materials on emergency management and flood issues that could be used by school districts as well as governmental and non-governmental organizations to develop school curricula, employee trainings, and public workshops. Examples include:

- **FEMA Independent Study Program (ISP)**<sup>102</sup> offers free, self-paced online courses for people engaged in emergency management and the general public; and
- **EPA's Green infrastructure**<sup>103</sup> website offers a variety of online resources and materials types, benefits, and implementation of green infrastructure with examples from around the country.



## E. Glossary

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### *Acronyms*

- ADA** – Americans with Disabilities Act
- CBA** – Cost-benefit analysis
- CDBG** – Community Development Block Grant
- CDC** – Centers for Disease Control and Prevention
- CFA** – Consolidated Funding Application
- CNSE** – SUNYIT College of Nanoscale Science and Engineering
- CRS** – FEMA Community Rating System
- CWSRF** – Clean Water State Revolving Fund
- DOH** – Department of Health
- EDGE** – Mohawk Valley Economic Development and Growth Enterprise
- EFC** – Environmental Facilities Corporation
- ESD** – Empire State Development
- EPA** – U.S. Environmental Protection Agency
- FEMA** – Federal Emergency Management Agency
- FIRM** – FEMA Flood Insurance Rate Map
- FTE** – Full-time equivalent
- GIGP** – Green Innovation Grant Program
- GIS** – Geographic Information Systems
- HMGP** – FEMA’s Hazard Mitigation Grant Program
- HMP** – Hazard Mitigation Plan
- HOOAD** – Herkimer-Oneida Voluntary Organizations Active in Disaster
- HUD** – U.S. Department of Housing and Urban Development
- ICO** – Intermunicipal Coordinating Organization
- ISP** – FEMA’s Independent Study Program
- LOMR** – FEMA Letter of Map Revision
- MVRCR** – Mohawk Valley Resource Center for Refugees
- MVREDC** – Mohawk Valley Regional Economic Development Council
- MVWA** – Mohawk Valley Water Authority
- NFIP** – National Flood Insurance Program
- NGO** – Non-governmental organization
- NOAA** – National Oceanic and Atmospheric Administration
- NOCCOG** – Northern Oneida County Council of Governments
- NRCC** – Northeast Regional Climate Center
- NYRCR** – NY Rising Community Reconstruction
- NYS DEC** – New York State Department of Environmental Conservation
- NYS DOS** – New York State Department of State





**NYS DOT** – New York State Department of Transportation  
**NYS ERDA** – New York State Energy Research and Development Authority  
**NYS HCR** – New York State Homes and Community Renewal  
**NYS OPRHP** – New York State Office of Parks, Recreation, and Historic Preservation  
**RARP** – Rural Area Revitalization Program  
**RSF** – Recovery Support Function  
**SCBIC** – Sauquoit Creek Basin Intermunicipal Commission  
**SOCCOG** – Southern Oneida County Council of Governments  
**SUNYIT** – State University of New York Institute of Technology  
**SWOT** – Analysis of strengths, weaknesses, opportunities, and threats  
**TIGER** – Transportation Investment Generating Economic Recovery  
**UI** – Urban Initiatives Program  
**USACE** – U.S. Army Corps of Engineers  
**USDOT** – U.S. Department of Transportation  
**USFWS** – U.S. Fish and Wildlife Service  
**VOAD** – Voluntary Organizations Active in Disaster  
**WWTP** – Wastewater Treatment Plant

## *Terms*

**Asset** - Places or entities where economic, environmental and social functions of the Community occur.

**Asset Inventory** - Completing an inventory of the Community's social, economic, and natural resource assets that have been, or will be, affected by coastal or riverine hazards.

**Community Vision** - The overall goal of the Community throughout the NYRCR planning process.

**Exposure** - Local landscape characteristics that tend to increase or decrease storm effects

**Geographic scope** - The planning area identified by the Community and State guidelines where assets are most at risk; where future construction or reconstruction of existing development should be encouraged or discouraged; or where key investment to improve the local economy can be instituted.

**Hazard** - The likelihood and magnitude of anticipated hazard events.

**Need** - Infrastructure and services that were damaged or rendered inoperable by Superstorm Sandy as well as methods and operations that failed to work during the storm event or experienced insufficient capacity to respond effectively.

**Needs and Opportunities Assessment** - Determining needs and opportunities to improve local economic growth and enhance resilience to future storms.

**Opportunity** - Additional resiliency benefits, whether economic, environmental, social or cultural, that may be achieved through the integration of new methods, procedures and materials into the normal course of rebuilding.



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**Public Engagement** - Offering opportunities for public input and involvement at key milestones in the planning process.

**Resilience** - The ability of a system to absorb impacts while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt.

**Risk** - The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes.

**Risk Area** - Geographic areas at risk from coastal hazards according to differences in the exposure of the landscape.

**Risk Assessment** - Assessing risk to key Community assets based on the three factors contributing to risk: hazard, exposure, and vulnerability.

**Risk Assessment Tool** - Evaluation of risk based on the formula: Hazard x Exposure x Vulnerability.

**Risk Score** - The result of the risk assessment tool evaluation.

**Strategy** - A specific way or ways to address the needs and realize opportunities presented by the committee.

**Vulnerability** - The capacity of an asset to return to service after an event.



## F. End Notes

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- **Minor (2):** service **loss for up to 1 week**/longer-term reduction in service
- **Moderate (3):** service loss of **more than 1 week up to 1 month**
- **Significant (4):** service loss for **more than 1 month**/permanent reduction in capacity
- **Major (5): permanent loss** of service/asset

<sup>100</sup> Several NYS programs have committed to awarding additional points in the CFA competitive process to projects that originate from NY Rising Countywide Resiliency Plans. In addition, the Governor's Office of Storm Recovery is developing a Resilience Fund to provide low-cost financing to NY Rising Communities to help in bridge the gap of cost shares and grant matches.





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