



NY Rising Countywide Resiliency Plan HERKIMER COUNTY



July 31, 2014



Herkimer County NY Rising Countywide Resiliency Plan

This document was developed by NYRCR Herkimer County Planning Committee as part of the NYRCR Program and is supported by the NYS Department of State. The document was prepared by the following consultant firms:

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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.

In Herkimer, Oneida, and Montgomery Counties, consultants were retained by the NYS Department of Transportation in consultation with the NYS Department of Environmental Conservation to assess 13 watersheds that ultimately empty into the Mohawk River. The completed engineering assessment provided the Counties with a better understanding of the way water moves across the landscape, enabling the NYRCR Planning Committees to better understand critical areas subject to flood risk. The counties and communities along these creeks were provided recommendations on how to address problems incrementally and begin to mitigate severe flooding. Each NYRCR County Planning Committee has incorporated recommendations into their plan and proposed projects, making sure short term recovery actions are compatible with the actions needed to implement long-term resiliency recommendations.

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, and provide 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.

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



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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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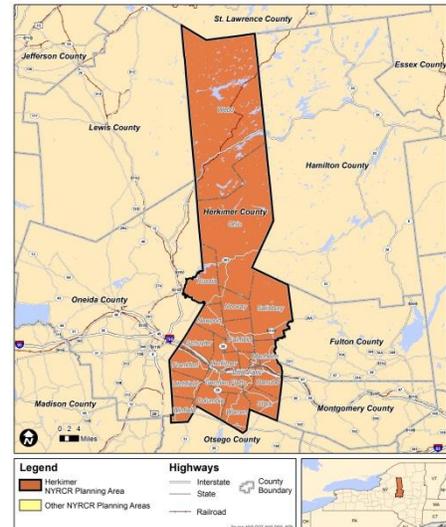
Executive Summary

Overview of NY Rising Community Reconstruction Community: Herkimer County

Herkimer County is one of five counties participating in the New York Rising Community Reconstruction Program (NYRCR) in Central New York. The county is bordered by Lawrence County to the north, Hamilton, Fulton and Montgomery Counties to the east, Otsego County to the south, and Oneida and Lewis Counties to the west.

From June 26 to July 4, 2013, severe rainstorms hit many upstate New York counties, causing massive flooding, erosion, property damage, and long-term power outages for more than 13,000 residents, long-term unavailability of potable water, and even loss of life. The affected counties included Broome, Chenango, Clinton, Essex, Delaware, Franklin, Herkimer, Madison, Montgomery, Oneida, Otsego, Schoharie, St. Lawrence, Tioga, and Warren. The federal government, seven of these counties (including Herkimer County), and 15 municipalities declared states of emergency.

Governor Andrew M. Cuomo issued a Disaster Declaration in response to the devastating floods and announced the creation of the Mohawk Valley and 2013 Upstate Flood Recovery Program. This Recovery Program was created to provide assistance to homeowners, small business owners, and farmers who were victims of the floods, to provide immediate recovery assistance to victims, and to address gaps in disaster-related coverage, such as insurance. Herkimer County and four other impacted counties were also designated as NYRCR areas. This Countywide Resiliency Plan represents the planning efforts carried out by the Herkimer County NYRCR Planning Committee (Committee) and the Herkimer County community at large (Community) to identify needed projects to help the County to recover from the summer 2013 storms and to prepare for a more resilient future.



Herkimer County



Road Flooding in Herkimer



The impact of these 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, homes, senior living facilities, schools, and municipal buildings. Flooding from the storm was primarily caused by the rapid overflowing of the creeks and tributaries that flow into the Mohawk River. The creek and tributary systems that caused the most significant amount of damage from flooding included but were not limited to the Fulmer, Steele, Moyer, East Canada, West Canada, Nowadaga, Maltanner, and Otsquago Creeks and Bellinger Brook. The storms' impacts were exacerbated by the area's incomplete recovery from the catastrophic damage caused by Hurricane Irene (August 2011), Tropical Storm Lee (September 2011), Winter Storm Nemo (February 2013), and continuous rain throughout the month of June 2013.



Fulmer Creek, Village of Mohawk

These documented effects, 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:

- Providing a more natural floodplain for the numerous streams and creeks that run through the County;
- Stabilizing streambanks and repairing the severe erosion that has occurred;
- Providing regular sediment and debris removal in high risk streams;
- Strengthening the land use regulations for development in the floodplain;
- Improving and strengthening communication systems before, during and after disasters;
- Improving coordination with state and federal agencies in regards to information sharing;
- 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 creating redundancy in the electrical power supply;
- Managing stormwater and water flow through the streams, creeks, and tributaries within the County; and
- Upgrading aging infrastructure.



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These issues served to define needs, opportunities, strategies, and eventually projects that would help make the Community more resilient and sustainable. Up to \$3 million has been allocated through the NYRCR Program for recovery and resiliency projects within NYRCR Herkimer County.

NYRCR Program: A Community-Driven Process

A critical goal of the Herkimer County NYRCR Resiliency Plan is to ensure that the Community's social, economic, and natural resource assets and systems that were affected by the summer 2013 flooding are more resilient against future storms. The NYRCR Committee developed the following Vision Statement to guide the entire planning process and ensure that the recommended actions included in the Herkimer County NYRCR Resiliency Plan address the critical issues they identified:

The communities of Herkimer County, working together, will build an economically vibrant and safe future for all of our residents and ensure a high quality of life. We embrace our waterways as a vital component of our history, culture, and economy, while recognizing the challenges associated with flooding and natural disasters. By promoting sound growth, green infrastructure and open space, mitigating future damage, and transforming our communities through a comprehensive and sustainable approach, Herkimer County will reach its full potential for resiliency.

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

Residents from across the County were 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.



NYRCR Countywide Resiliency Plan: A Blueprint for Resiliency

The NYRCR Countywide Resiliency Plan utilizes a three-pronged approach to helping Herkimer County rebound from the summer 2013 flood events and preparing the County 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; and
3. **Build resiliency** – looking to the future, beyond damages from the summer 2013 flooding, identify needs and opportunities to reduce flood risks to communities while bolstering the local economy.

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 using 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 Committee and Herkimer 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 local employment opportunities. These include actions and investments that capitalize on Herkimer County’s natural, cultural, and historic resources along the Mohawk River and canal; improve stormwater infrastructure in historic downtowns to spur revitalization; increase housing options for young professionals, families, and the elderly outside of the flood zones and near downtowns; and ensure suitable and sustainable infrastructure for emerging industries.

The process of identifying post-storm needs and opportunities informed the 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 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 investment programs. Strategies may include conservation of natural protective features, regulatory changes and building



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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 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 meets the following criteria:

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

Projects are the path to executing the strategies and meeting the Community's need for resiliency. Table 1 presents all proposed projects organized by resiliency strategy.

Table 1. NYRCR Herkimer County Recovery and Resiliency Projects

Strategy	Project ID	Project Name
Recovery Projects		
Invest in key infrastructure facilities and systems to promote economic and ecological sustainability	RC 1	Poland Washout Water Transmission Line Repair
	RC 2	Newport-Gray Road and Stream Bank Protection
	RC 4	Culvert Repair for Access to Road to Water Holding Tank
	RC 5	East German Street Extension Repair
	RC 7	Substation Repairs and Hardening
	RC 13	Timmerman Road Ditch Repair
	RC 14	Creek Road Stream Bank Stabilization
Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses	RC 15	Gulf Road Bank Repairs and Stabilization
	RC 3	Lehman Park Embankment Repair
	RC 6	Bellinger Creek Repairs
	RC 8	Fulmer Creek Rehabilitation
	RC 9	Slip Bank Repair near former Wilkerson Property
Increase the resiliency of the housing stock by increasing housing in downtowns and outside of flood zones and acquiring at-risk properties to reduce flood losses and spur revitalization	RC 10	Left Bank Stabilization near Creekside Trailer Park Property
	RC 12	Debris Removal and Stabilization of Cemetery Creek Headwaters
	RC 11	Leatherstocking Trailer Park Recovery Project



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Strategy	Project ID	Project Name
Resiliency Projects		
	RS 1	Watershed Planning, Regulation, and Compliance
Develop appropriate zoning and land use policies at the local level to manage the use of land in floodplains to reduce risk and susceptibility to flood damages	RS 1-a	Develop Comprehensive Master Plans
	RS 1 –b	Develop Uniform Floodplain & Land Use Regulations
	RS 1 –c	NFIP Community Rating System
Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses	RS 1-d	Establish Inter-municipal Drainage Districts
	RS 2	Education and Communications
Develop appropriate zoning and land use policies at the local level to manage the use of land in floodplains to reduce risk and susceptibility to flood damages	RS 2-a	Enhance Educational Programs for Local Officials
Develop a multi-tiered system to alert emergency personnel and residents of flood events and to manage and communicate emergency-related info and resources	RS 2-b	Install Stream Gauges & High Water Markers
	RS 2-c	Enhance Mohawk River Monitoring System
	RS 2 -d	Utilize Integrated Public Alert Warning System
	RS 2-e	Enhance Emergency Services website
Centralize flood preparation and response efforts to foster regional cooperation in approaching flooding and related issues	RS 2-f	Implement Outreach Campaign
Expand educational efforts geared towards residential and business property owners	RS 2-h	Circulate Pre-Disaster Information
	RS 2-i	Public Workshops & Information Sessions
	RS 3	Capacity Building
Centralize flood preparation and response efforts to foster regional cooperation in approaching flooding and related issues	RS 3-a	Shared Recovery Manager
	RS 3-b	Create a Flood Recovery Office
	RS 3-c	Enhance Herkimer GIS Capacity
Invest in key infrastructure facilities and systems to promote economic and ecological sustainability	RS 3-d	GIS Infrastructure Mapping
Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses	RS 3-e	GIS Inventory of Open Space
	RS 4	Business Retention and Incentives
Support efforts and investments that encourage an employer’s ability to retain jobs or attract new businesses	RS 4-a	Develop Industrial and Business Parks
	RS 4-b	Build an Event Center and Business Park at HCCC
	RS 4-c	Develop Route 167 Retail Park in Little Falls



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Strategy	Project ID	Project Name
	RS 4-d	Improve Access to Industrial Park
	RS 4-e	Expand Healthcare Initiative at HCCC
	RS 4-f	Create Pop-up Store Incentive Program
Reduce overlapping municipal jurisdictions and governmental fragmentation that contributes to governmental inefficiency	RS 4-g	Shared Services
	RS 4-h	State Efficiency Grants
Enhance the resiliency and visual character of downtowns	RS 4-i	Build a Regional Snowmobile Center
	RS 4-j	Protect Main Street Business Areas
Preserve and build upon abundant natural, cultural and geographical resources	RS 4-k	Develop Herkimer County Tourist Map
	RS 4-l	Develop Marketing Plan
	RS 5	Community Development
Support efforts and investments that encourage an employer's ability to retain jobs or attract new businesses	RS 5-a	Redevelop the Village of Frankfort Brownfield
	RS 5-b	New Sewer and Water Lines to Support Housing Development
Enhance the resiliency and visual character of downtowns	RS 5-c	Integrate Smart Growth Infrastructure
	RS 5-d	West Mill/Elizabeth Street Redevelopment Project
Preserve and build upon abundant natural, cultural and geographical resources	RS 5-e	Implement Marina Project in the Village of Frankfort
	RS 5-f	Preserve Historic Structures
	RS 6	Protection of Vulnerable Populations and Enhancing Social Service Facilities
Develop a plan to ensure emergency services for vulnerable populations, including provision of medical supplies and temporary housing	RS 6-a	Enhance Vulnerable Population Registry
	RS 6-b	Emergency Preparedness Plans for Vulnerable Population Housing Facilities
	RS 6-c	Develop Outreach Materials to Vulnerable Populations
	RS 6-d	Support Volunteer and Non-profit Organizations
	RS 7	Improving Shelter Capacity
Work with Town of German Flatts and Herkimer County Community College to increase shelter capacity	RS 7-a	Utilize Town of German Flatts Emergency Shelter
	RS 7-b	Register Shelters
	RS 7-c	Develop Plan to Use HCCC as an Emergency Shelter
	RS 8	Flood Protection for Health and Social Service Facilities
Evaluate feasibility of elevating or re-aligning roads prone to flooding	RS 8-a	Flood Evaluation for Critical Roadways
	RS 8-b	Identify & Map Areas Isolated by Flooding
	RS 9	Resilient Housing
Increase the resiliency of the housing stock by increasing housing in downtowns and outside of flood zones and acquiring at-risk properties to reduce flood losses and spur revitalization	RS 9-a	Acquire Condemned or Foreclosed Homes Outside of Floodplain
	RS 9-b	NFIP Enforcement
	RS 9-c	Coordinate Housing Assistance



Herkimer County NY Rising Countywide Resiliency Plan

Strategy	Project ID	Project Name
	RS 9-d	Provide Diverse Housing Options
	RS 9-e	Improve Buy-out Programs
	RS 10	Improve Power and Telecommunication Systems
Invest in key infrastructure facilities and systems to promote economic and ecological sustainability	RS 10 - a	Investigate Utility Infrastructure at Highest Risk of Flooding
	RS 10 - b	Back-up Power Generation
	RS 10 - c	Evaluate Opportunities to Expand Hydropower Generation
	RS 10 - d	Investigate Opportunities for Renewable Energy
	RS 10 - e	Investigate Opportunities for Solar Photovoltaic Systems
	RS 10 - f	Expand Northland Communication Project
	RS 11	Resilient Water, Wastewater, Stormwater, and Green Infrastructure Systems
Invest in key infrastructure facilities and systems to promote economic and ecological sustainability	RS 11 - a	Increase Resilience of Village of Mohawk Drinking Water Supply
	RS 11-b	Repair Drainage System in the City of Little Falls Industrial Park
	RS 11-c	Upgrade East Herkimer Wastewater Treatment Facility
	RS 11-d	Improve Acme Road Drainage
	RS 11-e	Repair Culverts in the City of Little Falls
	RS 11 - f	Lou Ambers Drive Stormwater Improvement
Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses	RS 11 - g	Green Infrastructure Pilot Project at HCCC
	RS 11 - h	Promote Green Infrastructure
	RS 11 - i	Improve Water Management from Hinckley Reservoir
	RS 12	Enhance Transportation Systems
Invest in key infrastructure facilities and systems to promote economic and ecological sustainability	RS 12 - a	Maple Avenue Bridge Removal
	RS 12 - b	Replace Undersized Bridges
	RS 12 - c	Replace Fairfield Bridge
	RS 12 - d	Replace Route 28 Bridge
	RS 12 - e	Evaluate Bridge Replacement in the Village of Ilion
	RS 12 - f	Dockey Road Bridge Replacement
	RS 13	Creek Restoration and Capacity Improvements
Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses	RS 13 - a	Steele Creek Comprehensive Flood Mitigation Study
	RS 13 - b	Develop Maintenance Dredging Guidelines that Includes Streambank Stabilization
	RS 13 - c	Remove Sediment from East Canada Creek



Herkimer County NY Rising Countywide Resiliency Plan

Strategy	Project ID	Project Name
	RS 13 - d	Evaluate Sediment Control Dam along Maltanner Creek
	RS 13 - e	Develop Maintenance Program for West Canada and Maltanner Creeks
	RS 13 - f	Remove Cobble Bar, West Canada Creek
	RS 13 - g	Construct Low Flow Channels
	RS 13 - h	Repair Stream Bank Erosion, Fulmer Creek
	RS 13 - i	Stabilize Retaining Wall, Town of Frankfort
	RS 13 - j	Stabilize Nowadaga Creek Bank
	RS 13 - k	Relocate Town of Danube DPW Facility
	RS 13 - l	Modify Operations at the Daniel Green Company Dam
	RS 13 - m	Modify Operations at the Dolgeville Hydroelectric Dam
	RS 14	Natural Resource Enhancements
Preserve and build upon abundant natural, cultural and geographical resources	RS 14 - a	Develop Greenway Trail
	RS 14 - b	Develop Waterfront Trail
	RS 14 - c	Complete Canal Recreationway Trail
	RS 14 - d	Develop Bike and Pedestrian Trail Spurs from the Canal Recreationway Trail
Identify, enhance and expand open space and recreational opportunities, such as walking/biking trails and fishing access points along streams and rivers	RS 14 - e	Acquire Land near Frankfort Harbor
	RS 14 - f	Acquire Land near Confluence of Steele Creek and Mohawk River

In the months and years to follow, many of the projects and actions outlined in this Countywide Resiliency Plan will become a reality, helping Herkimer County not only to rebuild, but also to build back better.



Section 1. County Overview



Village of Newport¹



A. PLANNING AREA

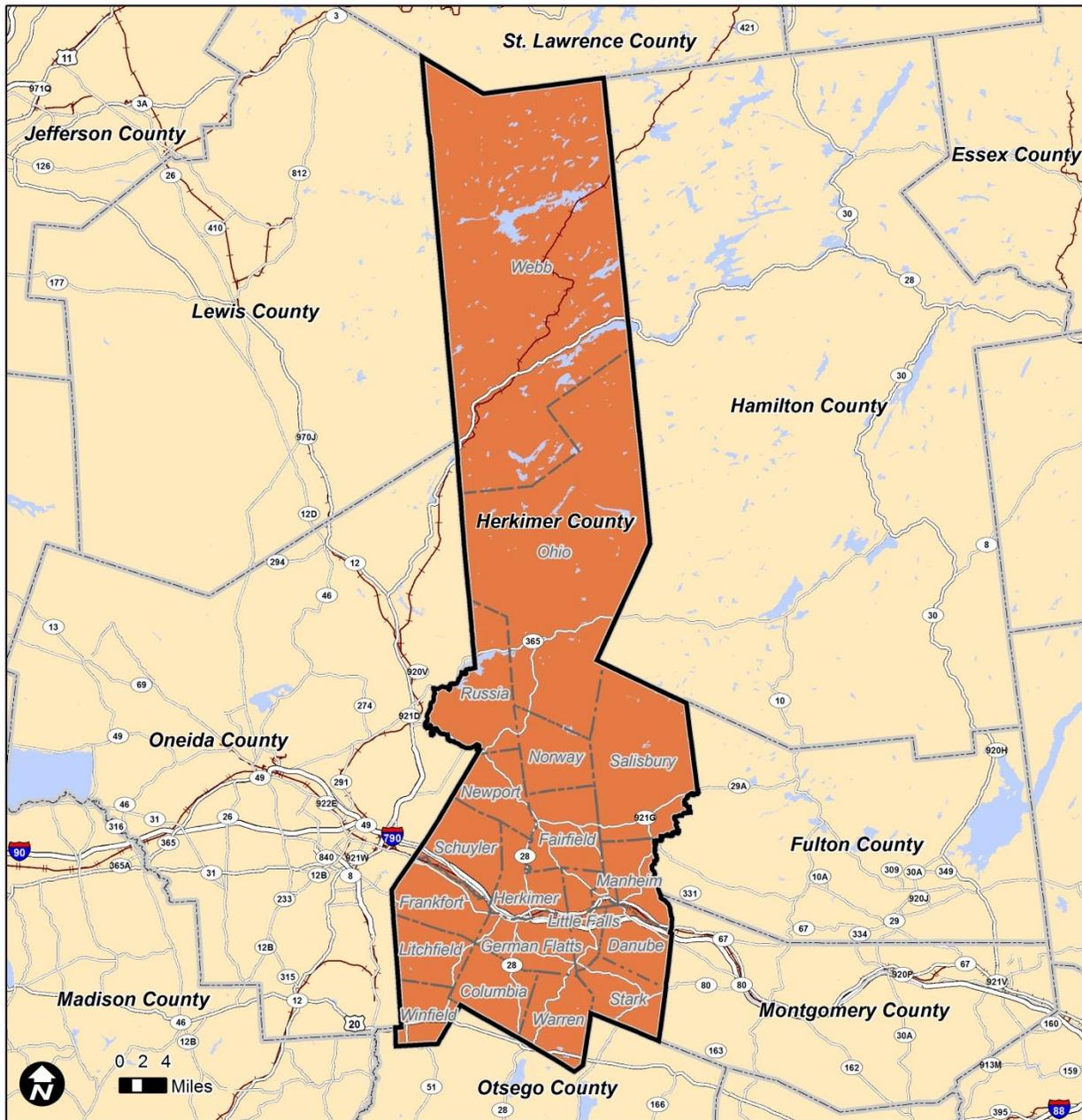
Herkimer County is a 1,458-square mile area that includes 47 square miles of water bodies. A majority of the population resides in the communities that surround the Mohawk River, which flows through the southern part of the County. This area is referred to as the Mohawk Valley Corridor.² The northern portion of Herkimer County is in the Adirondack State Park. Major watersheds prone to flooding in the County include Fulmer Creek, Moyer Creek, Steele Creek, West and East Canada Creeks, Nowadaga Creek, Maltanner Creek, Otsuago Creek, and Bellinger Brook.

Herkimer County is the longest county in the State of New York and comprises the City of Little Falls; ten (10) Villages [Cold Brook, Dolgeville, Frankfort, Herkimer, Ilion, Middleville, Mohawk, Newport, Poland, and West Winfield]; and nineteen (19) Towns [Columbia, Danube, Fairfield, Frankfort, German Flatts, Herkimer, Litchfield, Little Falls, Manheim, Newport, Norway, Ohio, Russia, Salisbury, Schuyler, Stark, Warren, Webb, and Winfield].

The geographic scope of the Countywide Resiliency Plan is the entirety of Herkimer County, however, there is a more intense focus on areas within the County that are frequently flooded, and experienced damage during the June 2013 floods. The recovery projects outlined in this NYRCR Plan aim to fix damage caused by the June 2013 floods, while the resiliency projects are countywide in focus. Municipalities where extensive damage occurred during the summer 2013 floods include the City of Little Falls; the Towns of Newport, Little Falls, Winfield, Herkimer, Schuyler, Danube, Columbia, German Flatts, Fairfield, Stark, Norway, Manheim and Frankfort; and the Villages of Mohawk, Herkimer, Frankfort, Dolgeville, Ilion and Middleville. The northern portion of Herkimer County, which is primarily composed of the Adirondack State Park, is also at risk of flooding but due to the limited amount of development and the localized nature of the summer 2013 rain events, this area of the County did not experience extensive damage. See Figure 1 below for an overall location map of Herkimer County.



Figure 1. Location Map



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

Source: NYS DOT, NYS DOS, MTA





Climate

The average annual temperature in Herkimer County ranges from 39 degrees Fahrenheit (°F) to 47°F, with an average annual minimum ranging from 1°F to 11°F and the average annual maximum ranging from 75°F to 83°F. Average annual precipitation in Herkimer County ranges from 43” to 57”. To provide perspective, during the summer 2013 storm event, Herkimer County experienced three to five inches of rainfall in one day. These temperature and precipitation averages are based on data from 1971 to 2000.³

Land Use/Land Cover

A majority of Herkimer County (close to 60%) is located within the Adirondack Park, which is dominated by forest with little agriculture or development. South of the park, Herkimer County is predominantly rural with farmland comprising 41% of all land cover outside of the Adirondack Park. The table below demonstrates the overall lack of development in Herkimer County, with only three percent of all land defined as developed.

Table 2. Land Cover in Herkimer County⁴

Land Cover Type	% of Total Land Cover
Water	4%
Developed	3%
Barren Land	0%
Forest	65%
Shrubland	6%
Herbaceous	1%
Cultivated	15%
Wetlands	6%

Hydrology

Herkimer County is part of five large watersheds, including the Black River, Oswegatchie, and the Raquette River in the northern region of the County; and the Upper Susquehanna and Mohawk River Watersheds in the southern region of the County.

It is in the southern portion of the County, where a number of tributaries within the Mohawk River watershed experience the most frequent flooding, and cause damage due to severe precipitation and high flow events. Tributaries from the north include the West Canada Creek, which flows into the Mohawk River just east of the Village of Herkimer and the East Canada Creek, whose confluence with the Mohawk River is between Little Falls and St. Johnsville. Bellinger Brook flows through the Village of Herkimer; Maltanner Creek is located in the Town of Fairfield and the Village of Middleville; and the Nowadaga Creek, which drains portions of the Towns of Danube, Stark, and Little Falls, and a small portion of the Town of Warren. Tributaries to the south of the Mohawk River include Fulmer Creek, which is primarily located in the Town of German Flatts and the Village of Mohawk; Steele Creek,



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primarily located in the Towns of Litchfield, German Flatts, and Columbia, and the Village of Ilion; Moyer Creek, which flows through the Towns of Litchfield and Frankfort, and the Village of Frankfort; and Otsquago Creek, which flows through the Town of Stark.⁵ See Figure 2 for a map of the Mohawk River and its tributaries and Figure 3 for a map of the watersheds located in Herkimer County.

Figure 2. The Mohawk River and its Tributaries, Southern Portion of Herkimer

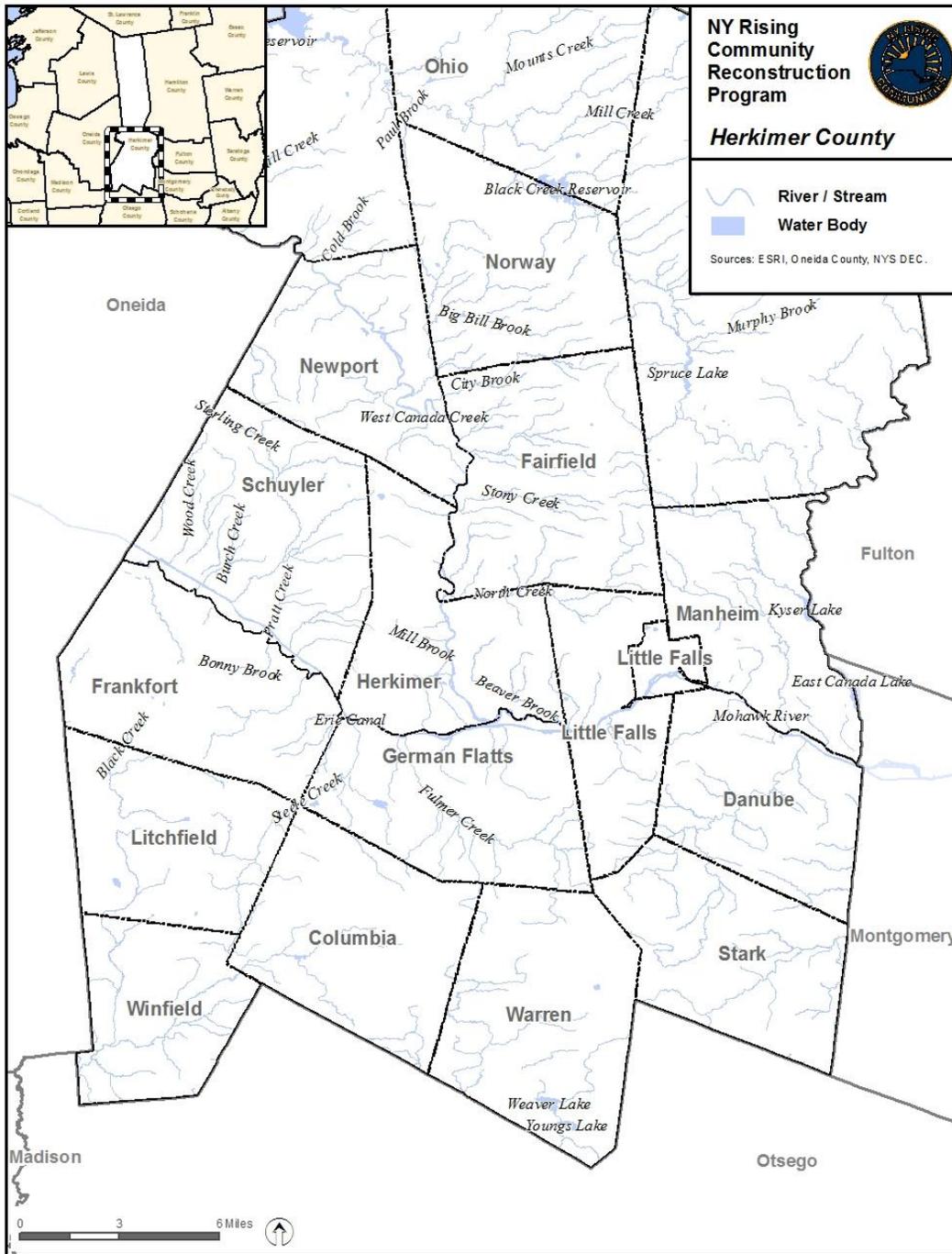
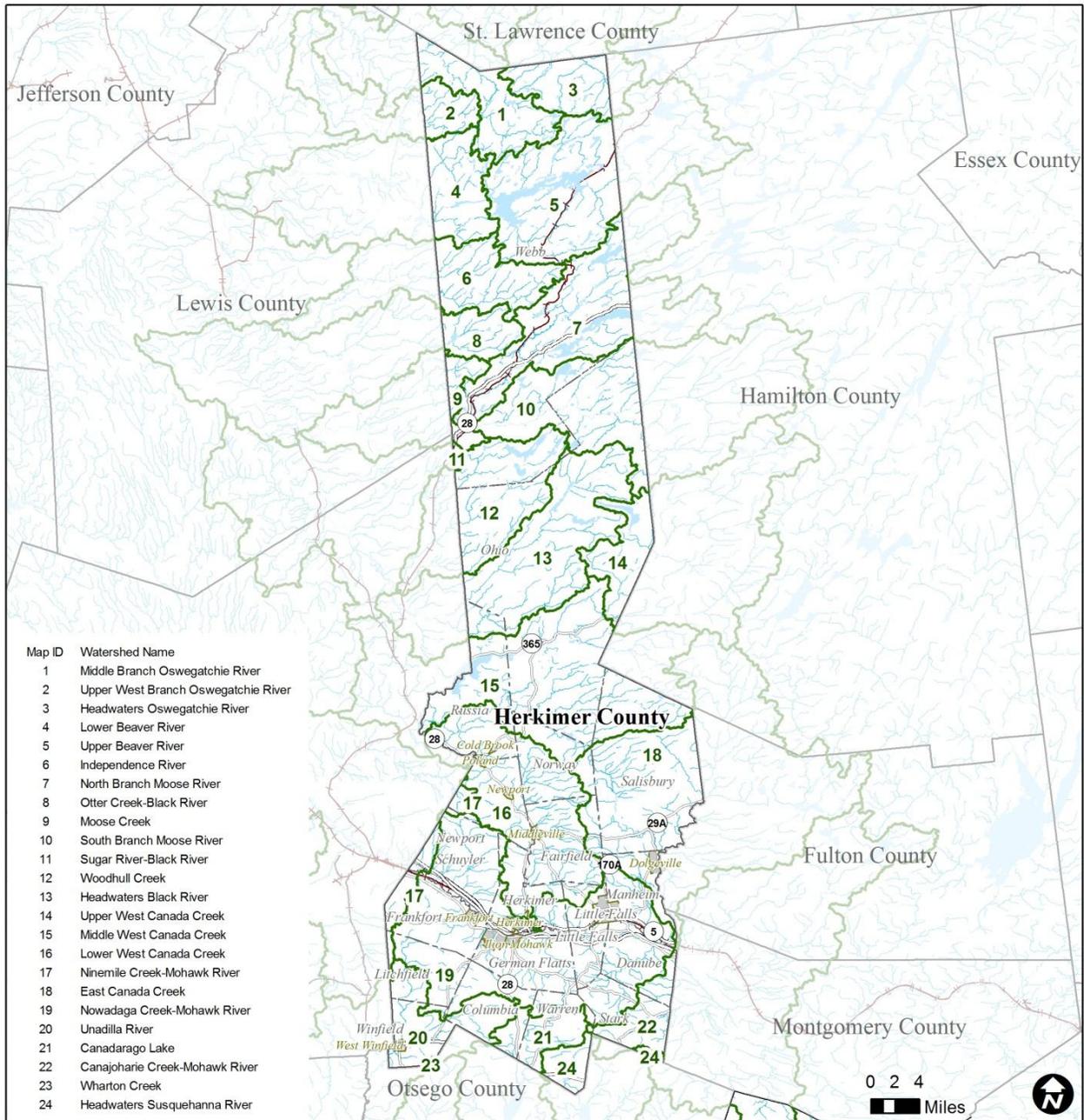




Figure 3. Watersheds in Herkimer County



Herkimer County	
NYRCR Planning Area	
	Watershed
	10-Digit Hydrologic Unit
Source: NYS DOT, NYS DOS, USGS	
Highways	
	Interstate
	State
	Railroad
	City / Village





Economy and Tourism

Herkimer County is relatively rural, distinguished in large part by its year-round and seasonal attractions. The northern portion of the County is within the Adirondack Park, which is a year-round destination for both summer and winter recreational activities. In the southern portion of the County, the Mohawk Valley boasts a tourism industry rich in historical significance, evidenced by the nearly 50 locations on the National Register of Historic Places as of 2011. While there are few tourist destinations or historic structures that are at direct risk of flooding, many of the roads and bridges connecting these important assets and several drinking water wells that serve rural campgrounds are at risk of flooding, which affects the viability and sustainability of the tourism industry in Herkimer County.

Winter Recreation revolves around the snow and the mountains, with cross country skiing, downhill skiing, snowmobiling, snowboarding, and snowshoeing. Herkimer County has hundreds of miles of groomed and maintained snowmobile trails, plus miles of groomed and “make-your-own” trails for cross country skiing. McCauley Mountain in Old Forge is known as a challenging downhill skiing destination. There are also trails open for three- and four-wheel vehicles.



Snow Mobile Trail Marker in Newport Village

Summer Recreation includes a host of activities. Golf is well represented, with more than 46 courses and driving ranges, and approximately 15 miniature golf courses. There are miles of hiking trails and a variety of terrain types, with one trail bypassing Erie Canal System Lock 17. Opportunities for boating, canoeing, kayaking, and rafting abound with dozens of miles of lake travel. Fishing for brook and lake trout, bullheads, whitefish, large and small bass, perch, and sun fish is a very popular recreational activity in the County. West Canada Creek is considered by many to be one of the best trout fishing streams in New York State.

Notable year-round points of interest include⁶:

- Herkimer Diamond Mines Resort, which allows the public to mine their own Herkimer diamonds
- Enchanted Forest/Water Safari, located in Old Forge: the State’s largest water theme park
- Canal Place, Little Falls: destination shopping with cultural/recreational activities including hiking, boating, and canoeing
- Erie Canal Cruises: dock is located at Gems Along the Mohawk



“Discover Herkimer County” logo



- Remington Arms Gun Museum, located in Ilion: one of, if not the, foremost collection of Remington guns
- Adirondack Park/Southern Adirondack Trail: A 112-mile trail (partially in Herkimer County) that provides road and mountain biking, along with scenic lakeside views

The County seat is the Village of Herkimer, which is home to the County’s only community college. Herkimer County Community College is a two-year community college that offers more than 40 Associate Degree and Certificate Programs. Herkimer County Community College is unique for a Community College in that it offers exceptional on-campus housing opportunities for students and is one of the largest residential community colleges.⁷ Herkimer County Community College also contributes in a profound way to the economy of Herkimer County. Based on an economic study performed in 2010, Herkimer College’s total economic impact is estimated at \$75 million in added income to Herkimer County each year.⁸

Demographic Overview

Herkimer County General Demographics

The 2010 Census shows 64,519 people living in Herkimer County, a 0.1% growth over the last 10 years (2000). The population breaks down by age as follows:

Table 3. Herkimer 2010 Population Breakdown by Age and Gender

Age Category	Total (Both Sexes)	Male	Female
Under 18 years	14,298	7,224	7,074
18 to 24 years	5,936	2,968	2,968
25 to 34 years	6,646	3,338	3,308
35 to 44 years	7,786	3,872	3,914
45 to 54 years	10,100	5,039	5,061
55 to 64 years	8,897	4,412	4,485
65 to 74 years	5,535	2,670	2,865
75 to 84 years	3,584	1,497	2,087
85 years and over	1,737	559	1,178
Total population	64,519	31,579	32,940

The age distribution is trending higher since 2000. The current median age in Herkimer County is 42.1, whereas in 2000 the median age was 39.

More than one in six Herkimer County residents (16.8%) is a senior citizen (age 65 and up), an increase of 60% compared to their numbers in 1950. Those under five make up only 5.6% of residents (approximately one in twenty), a decrease of 42.7% in the same 60-year period.⁹



Income and Poverty

The median household income in Herkimer County is \$42,318 per year. Adjusted for inflation, this is actually a decrease since 2000, a similar condition to the rest of New York State. As shown in Table 4, with respect to the percentage of households whose per capita income falls below \$10,000, the breakdown is fairly equal between Herkimer County and New York State as a whole. The percentage of households with income levels below \$25,000 has improved since 2000, but remains significantly higher in Herkimer County than the State as a whole. While the “above \$100,000” bracket is smaller in Herkimer County compared to the rest of New York State, it has seen an increase of nearly 7% from 2000 to 2010.

Table 4. Herkimer County-New York State Income Levels

	Herkimer County		New York State	
	2000*	2010	2000*	2010
Median Household Income	\$43,092	\$42,318	\$56,795	\$55,603
Per capita Income	\$21,126	\$21,908	\$30,613	\$30,948
< \$10,000	11.4%	7.7%	11.5%	8.1%
< \$25,000	38.2%	28.3%	29.6%	23.4%
> \$100,000	3.7%	10.4%	15.3%	13.2%
Income below the poverty level**	(2009) 12.5%		(2009) 14.6%	
Income below 50% of the poverty level	(2009) 4.8%		(2009) 7.4%	

* 2000 income levels were adjusted for inflation

** Poverty level in Herkimer County is approximately \$930/month (\$11,160/year)⁹

Employment and Journey to Work

Understanding the general character of the County’s workforce helped to identify needs, opportunities, and projects to maintain, restore, and enhance the economic vitality of Herkimer County. Herkimer County unemployment levels have historically been similar to though often slightly higher than the overall unemployment rate in New York State. The County saw a dramatic increase in unemployment between 2007 and 2009, which followed the general trend of the entire country with the recession.

While workers in the County are employed in a number of industries, the manufacturing and health care and social assistance sectors are the largest employers in the County. The third greatest employment sector is retail trade, followed by accommodation and food services.¹⁰ The majority of County residents (58.6%) work within the County, compared to 41.4% who commute outside Herkimer County. The mean travel time to work is 21.9 minutes for Herkimer County residents.¹¹

Housing⁹

The majority of the County’s population resides in the towns, villages, and the city that surround the Mohawk River. In 2010 there were 33,314 housing units in Herkimer County, with the majority 56% classified as rural, 42% in urban clusters such as villages and suburbs, and 2% urban (City of Little Falls).



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The median age of Herkimer County homes is 62 years old (built in 1952), just three years older than the average home in New York State. Nearly four in five housing units (79.5%) are occupied:

- 56.9% (or 71.6% of the occupied homes) are owner-occupied
- 22.6% (or 28.4% of the occupied homes) have renters

There are fewer homes in Herkimer County with a mortgage (55% of the owner-occupied units) than in New York State (65.3%). This is a logical outcome of the aging population described above; senior citizens have typically lived in the same home for longer than 30 years, and have thus had time to pay off their mortgages. According to the Herkimer Committee, many homes have been in the same family for generations and no longer need to pay a mortgage. Without a mortgage, the homeowners are no longer required to pay for flood insurance, which has presented complications in past flood events. Generally, Herkimer County residents can afford their homes, based on their needing to spend less than 35% of their income on housing expenses.

Rental housing tends to be owned by people who live outside the county, and the presence of “absentee landlords” has been identified as a growing local issue by the 2012 Herkimer Risk Assessment profile.

Guidance and Insight from Demographic Analysis

An aging population trend tends to indicate that once younger people leave the area (e.g. for college), they do not return, opting to live and raise families elsewhere. Often, this is due to a less-than-optimal economic outlook; young people typically look to settle in a locale where they can financially support themselves and their families. The economic data appears to confirm this in several ways:

- A larger-than-average percentage of Herkimer County residents could not find employment within the county and had to travel elsewhere
- There has been an overall reduction in the number of firms located in Herkimer County, plus a reduction in the typical annual salary of occupations found within the types of industries that have seen measurable increase since 2006
- Young people tend to rent more often than own, and renters in Herkimer County are spending larger percentages of their income on housing than most homeowners in Herkimer County

These conditions can make it harder for Herkimer County residents to prepare and bounce back from flood and storm damage:

- People who spend 35% or more of their income on housing expenses, may not be able to afford to fix storm damage.
- Older persons may not be physically able to do damage repairs on their own, forcing them to pay for repairs.
- Additionally, those without mortgages may not carry flood insurance and are forced to pay for the full cost of any damages caused by flooding.



B. HISTORY OF FLOODING IN HERKIMER COUNTY

With its landscape hewn by many winding creeks and rivers and an industrial history that was shaped by siting development within easy access to rivers and canals, flooding is not a new occurrence in Herkimer County. The Mohawk River, originally known as Tenonanatche (“the river flowing through the mountains”) by the original Mohawk peoples, has served as a critical economic and cultural asset even before European settlers first came to New York. The history of flooding from the Mohawk River and its tributaries has been well documented – the Herkimer County Flood Insurance Study documents major flooding that occurred in the Village of Herkimer as early as 1910.¹² Flooding throughout the County typically occurs in the late winter and early spring months from ice blockages, spring rainfall, and snowmelt. The worst of the historical and regular flooding occurs along the Mohawk River and its primary tributaries, which most severely affects the towns, villages, and city located in the Mohawk Valley corridor. These areas also suffered the most extensive damage from the 2013 summer flooding.

The New York State Multi-Hazard Mitigation Plan underscores this history with telling statistics. From 1960 to 2012, Herkimer County experienced 85 flood events that resulted in one fatality, 12 injuries, \$24,592,482 in property damage, and \$1,175,304 in crop damage. Table 5 lists all major flood disaster events, both federally declared disasters and a few other significant but undeclared events, in Herkimer County from 1972 to 2013. There is a distinct increasing trend in the number of federally declared disasters in the County starting around year 2000.¹³

Table 5. Major Flood Disaster Events for Herkimer County (1972-2013)

Disaster Number	Declaration Date	Type of Assistance	Damage Type
DR-4129	7/12/2013	Public Assistance	Severe storms and flooding
EM-3341 DR-4031	9/13/2011	Public Assistance and Individual Assistance	Tropical Storm Lee
EM-3328 DR-4020	8/31/2011	Public Assistance and Individual Assistance	Hurricane Irene
DR-1993	6/10/2011	Public Assistance	Severe storms, flooding, tornadoes, and straight-line winds
DR-1670	12/12/2006	Public Assistance	Severe storms and flooding
DR-1650	7/1/2006	Individual Assistance	Severe storms and flooding
DR-1534	8/3/2004	Public Assistance	Severe storms and flooding
Undeclared	February 2004		Ice jam flood
DR-1335	7/21/2000	Public Assistance	Severe storms
DR-1095	1/24/1996	Public Assistance	Severe storms and flooding
DR-515	7/21/1976	Public Assistance and Individual Assistance	Severe storms and flooding
DR-447	7/23/1974	Public Assistance and Individual Assistance	Severe storms and flooding
Undeclared	July 1974		
Undeclared	May 1972		



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Herkimer County has 1,334 residential properties in the 100-year flood zone, 568 of which have National Flood Insurance Program (NFIP) policies, or only 43%. Many homes in Herkimer County have been owned by the same family for multiple generations, and therefore do not require flood insurance. The number of homeowners without flood insurance policies was cited as an important issue by the NYRCR Herkimer Committee, who noted that many homeowners have to pay for all flood-related damages out of pocket, which represents an overall drain on the local economy.

The 568 policy holders in Herkimer County pay \$463,024 annually for NFIP coverage of \$73,711,200. According to the State's repetitive flood loss property data in a 10-year period ending in 2013, Herkimer County recorded 57 repetitive losses on 26 properties. Repetitive loss properties are defined as properties that have received two or more flood claim payments of more than \$1,000 from the NFIP within any 10- year period. Only one municipality in Herkimer County, the Village of Ilion, is a participant in the NFIP Community Rating System program, which is a voluntary incentive program that encourages communities to exceed the minimum floodplain management guidelines established by the NFIP.



Photo of storm damage



C. DESCRIPTION OF SUMMER 2013 STORM DAMAGE

The impact of the summer 2013 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, homes, senior living facilities, schools, and municipal buildings. There was at least \$12 million in damage to infrastructure including sewage and water treatment plant damage in all the impacted counties. In Herkimer County, flooding from the storm was primarily caused by the overwhelming rate of heavy precipitation that resulted in the rapid overflowing of the creeks and tributaries that flow into the Mohawk River. The creek and tributary systems that caused the most significant amount of damage from flooding included but were not limited to the Fulmer, Steele, Moyer, East Canada, West Canada, Nowadaga, Maltanner, and Otsquago Creeks and Bellinger Brook. Municipalities where extensive damage occurred include the City of Little Falls; the Towns of Newport, Little Falls, Winfield, Herkimer, Schuyler, Danube, Columbia, German Flatts, Fairfield, Stark, Norway, Manheim and Frankfort; and the Villages of Mohawk, Herkimer, Frankfort, Dolgeville, Ilion and Middleville. The storms' impacts were exacerbated by the area's incomplete recovery from the catastrophic damage caused by Hurricane Irene (August 2011), Tropical Storm Lee (September 2011), Winter Storm Nemo (February 2013), and continuous rain throughout the month of June 2013.

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 Herkimer NYRCR Planning Committee.

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

- The entire County was under a County state of emergency.
- Hundreds of buildings and homes were flooded with several feet of water – 107 homes suffered major damage, 20 of which were assessed as “destroyed.”
- 485 people were evacuated and displaced during the storm, including residents of senior living facilities.
- Approximately 600 homes had their cellars pumped of flood waters and 300 homes had water exceeding three feet.
- Storm water collection systems failed and caused a backflow of water into commercial districts in the Village of Herkimer.
- 20 roads were closed.
- Bridges were flooded out, or their supports were compromised by debris that was powered by fast-moving flood water.



Photo of storm flooding



Herkimer County NY Rising Countywide Resiliency Plan

- Overall, more than 100 miles of the New York State Canal System were closed for days, and subsequently impacted by debris and flooding. In Herkimer County, this included Canal System locks E-18 and E-19 and the intervening sections of the system.
- Flood waters and standing water after the storms led to County public health fears over two specific mosquito-borne illnesses – West Nile Virus and Eastern Equine Encephalitis – because post-storm standing water provided optimal breeding conditions for mosquitos.
- There were multiple stream bank, wall, and structure failures adjacent to creeks.
- The Village of Mohawk had no potable drinking water for days due to damage sustained by the Village’s water system, resulting in the necessary evacuation of a senior assisted living facility and residents. The electric substation in the Village was under 10 feet of water, leaving 3,500 people in the Village without power for days.
- The Town of Herkimer experienced several mudslides along Route 28 between the Village of Herkimer and the Village of Middleville, which jeopardized the road and residents who depended on the road for emergency access.
- In the Village of Herkimer flash flooding occurring between North Bellinger and Prospect Streets and along Graham Street, and evacuations were necessary. NY Route 5S closed due to flash flooding from Route 169 to County Route 213.
- The Village of Ilion experienced flash flooding with multiple road closures.
- The Village of Frankfort experienced flash flooding with multiple road closures, which led to necessary evacuations.
- The Town of Fairfield experienced flash flooding along Davis Road and Route 169.¹⁴



D. CRITICAL ISSUES

The Planning Committee (Committee) expressed concerns about a variety of resiliency issues relating to protection of the life and safety of community members in the face of storm events and the preservation of the unique character of the County. Some of the most significant and critical issues facing the County include:

Natural Environment: Herkimer County and the surrounding counties contain a complex web of streams, creeks, and rivers that comprise a number of watershed basins that drain the Adirondack Mountains. The Mohawk River, originally known as Tenonanatche, the river flowing through the mountains, by the Native Americans, has served as a critical economic and cultural asset even before European settlers first came to New York. The history of flooding from the Mohawk River and its tributaries has been well documented – the Herkimer County Flood Insurance Study documents major flooding that occurred in the Village of Herkimer as early as 1910.¹⁵ Flooding throughout the County typically occurs in the late winter and early spring months resulting from ice blockages, spring rainfall, and snowmelt. However, as indicated by the summer 2013 events, flooding can also occur during heavy rain events in the summer months. 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 Mohawk Valley corridor has suffered from a decline in manufacturing and the loss of a major military base following the end of the Cold War, which has led to steep job losses and a decline in population throughout the six counties that make up the Mohawk Valley. Some of the major challenges to economic growth in the area, as outlined in the Mohawk Valley Regional Economic Development Council Strategic Plan, include aging sewer and water infrastructure systems, high overall state and local taxes, a fragmented system of local government, an aging population and shrinking workforce, aging housing stock, a lack of vibrancy in downtowns and central business districts, and inadequate incentives to support new economic development and businesses.¹⁶ Despite these challenges, the Mohawk Valley Regional Economic Development Council has established an aggressive agenda and strategic action plan to diversify and re-invigorate the Mohawk Valley economy over the next decade in order to return the economic promise and success of this area.

Utilities: Affordable electricity generation and the vulnerability of the power grid are both national and regional issues of concern. The summer 2013 flooding demonstrated the vulnerability of and risk to critical infrastructure systems, such as electricity, gas, and water supply, particularly in the Village of Mohawk. Herkimer Planning Committee members also expressed concern over the cost of electricity in the area and identified the need to pursue alternative forms of energy that could be locally generated. Mohawk Valley's Regional Economic Development Council (REDC) Strategic Plan has similarly stressed the importance of addressing the aging utility vulnerabilities that currently exist across the Mohawk Valley.¹⁷



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 Team¹⁸ 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 as a result of climate change. These changing climate conditions have local repercussions, such as uncertainty of water resources, ecosystems degradation, agricultural impacts on food security, vulnerability of energy infrastructure and telecommunications networks, and exacerbation of public health issues especially for vulnerable populations, and all corresponding economic impacts. The negative effects on water supplies could prove very difficult for Herkimer County in terms of energy generation, since there are several hydroelectric dam operations within the County. If water levels were to drop substantially, the County would need to employ other methods of electricity generation. Additionally, increased costs of farming could be debilitating to the economy, since dairy farming plays a sizable role in the local economy.

Specific issues identified by the Committee members and the public include:

- Providing a more natural floodplain for the numerous streams and creeks that run through the County;
- Stabilizing and repairing streambanks that experienced severe erosion;
- Providing regular sediment and debris removal in high risk streams;
- Strengthening the land use regulations for development in the floodplain;
- Improving and strengthening communication systems before, during and after disasters;
- Improving coordination of information sharing among local, state, and federal agencies;
- 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; and
- Upgrading aging infrastructure.



E. COMMUNITY VISION

With Community input, the Planning Committee developed the following vision statement to guide the planning process and ensure that the recommended actions – included in the NYRCR Herkimer County Resiliency Plan – address the critical issues they identified.

Vision Statement

The communities of Herkimer County, working together, will build an economically vibrant and safe future for all of our residents and ensure a high quality of life. We embrace our waterways as a vital component of our history, culture, and economy, while recognizing the challenges associated with flooding and natural disasters. By promoting sound growth, green infrastructure and open space, mitigating future damage, and transforming our communities through a comprehensive and sustainable approach, Herkimer County will reach its full potential for resiliency.



F. RELATIONSHIP TO REGIONAL PLANS

Due to the geography of the Mohawk Valley, many towns and villages share similar challenges as well as opportunities related to the natural environment, physical infrastructure, social assets, economic development, and other built systems.

Review of Existing Plans and Studies

To understand the planning environment and the work performed to date within Herkimer County and at the regional level, an effort was undertaken to review pertinent plans, studies, and reports. Despite a lack of existing local comprehensive land use plans or vision plans for Herkimer County, there are numerous plans and studies by the state and federal government as well as the Herkimer-Oneida Comprehensive Planning Department that address issues within Herkimer County.

The following plans were identified and reviewed:

- *Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives (May 2014)*
- *Mohawk Valley Regional Economic Development Council Strategic Plan (November 2011)*
- *Mohawk Valley Regional Economic Development Council 2012 Action Plan (2012)*
- *Mohawk Valley Regional Economic Development Council 2013 Action Plan (2013)*
- *Floodplain Risk Assessment of the Mohawk River (September 2012)*
- *Herkimer County Soil & Water Conservation District Watershed Assessments (2012)*
- *Herkimer County 2012 Risk Assessment Profile (2012)*
- *Mohawk River Basin Action Agenda 2012-2016 (2012)*
- *Flood Insurance Study, Herkimer County, NY (September 2011)*
- *US Army Corps of Engineers Flood Feasibility Studies for the Fulmer, Moyer and Steele creeks (2005)*
- *Multi-Community Flood Hazard Mitigation Plans for the Fulmer Creek Basin, the Moyer Creek Basin and the Steel Creek Basin (May 2004)*
- *Watershed Protection of the Mohawk River Watershed – Phase I (September 2003)*
- *Canalway Trail Gap Segment Assessment Report, Frankfort-Ilion-Mohawk-German Flatts, Herkimer County, New York (November 1998)*
- *New York State Canal Recreationway Plan (August 1995)*

Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives (May 2014)

- Bellinger Brook (2014)¹⁹
- East Canada Creek (2014)²⁰
- Fulmer Creek (2014)²¹
- Maltanner Creek (2014)²²



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- Moyer Creek (2014)²³
- Nowadaga Creek (2014)²⁴
- Steele Creek (2014)²⁵
- West Canada Creek (2014)²⁶

Following the summer 2013 floods, Governor Cuomo announced \$500,000 would be allocated to undertake comprehensive watershed assessments of several high flood risk streams, including Fulmer, Steele, Moyer, East Canada, West Canada, Nowadaga, Maltanner, and Otsquago Creeks, and Bellinger Brook. To complete these assessments, the New York State Department of Transportation (DOT), in cooperation with the New York State Department of Environmental Conservation (DEC), contracted with an engineering firm to prepare a detailed report for each of these sub-basins that identified the cause(s) of flooding and include specific recommended projects for reducing flood water elevations in the communities most affected by flooding. Project recommendations were based on sound stream science and hydraulic engineering to ensure that the most effective projects were identified. These reports, titled Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives, were released in May 2014 and serve as a basis for some of the recommendations in this NYRCR Herkimer County Resiliency Plan.

Mohawk Valley Regional Economic Development Council (MV REDC) Strategic Plan (November 2011)

This Plan, released in 2011, was initiated by New York State as a means to help develop the regional economy. The plan contains five major strategies that cover a broad spectrum of economic and quality of life issues:

- Enhance regional concentrations;
- Workforce alignment and education;
- Innovation enabling infrastructure;
- Increase spatial efficiency; and
- Strengthen government and civic effectiveness.

The MV REDC Plan highlights many of the regional concerns important to the communities of Herkimer County, such as the need to reinvigorate downtowns and central businesses, developing IT infrastructure, replacing aging utility infrastructure, insufficient and substandard housing stock, and the alignment of education and training resources with industry needs. Projects recommended by the 2011 MV REDC Plan that are specific to Herkimer County have been incorporated herein.

MV REDC 2012 Action Plan

The MV REDC 2012 Action Plan reviewed the progress made in 2011 and set out strategies for the years ahead. The 2011 recap identified \$60.2 million in MV REDC funding for 59 projects. The Action Plan divided economic development strategies into the five categories: 1) **Grow** Business, 2) **Build** Workforce Alignment and Education, 3) **Create** Pathways to Innovation, 4) **Revive** Infrastructure, and 5) **Forge** Partnerships.



Strategy One - Grow. Enhancing regional concentrations means to leverage the “high growth potential of the region’s business, industry, and employment assets” by targeting business attraction and retention efforts around a few key regional economic activities. Goals for 2012 were to enhance regional concentrations including business investment projects, develop academic/economic development partnerships to create new and emerging businesses and leverage the County’s key research and development assets. The Action Plan identified the following *Key Targeted (Business) Concentrations*: agriculture & food processing, financial services, insurance, tourism, healthcare, cybersecurity/IT, semiconductors/nanotechnology, clean technology, advanced manufacturing, and distribution.

Strategy Two – Build. The Action Plan set out goals for 2012 to align the workforce with business needs, specifically: expanding collaborations in healthcare and cybersecurity/IT, and improving workforce training programs by utilizing regional educational assets.

Strategy Three – Create. The 2012 goals included: strengthen the region’s research and development capacity, increase technology transfer from research to industry, increase small business lending through micro-enterprise programs, and establish entrepreneurial networks.

Strategy Four – Revive. The 2012 focus was revitalization of the downtowns and the waterfront by identifying brownfields for remediation, promoting commercial core and downtown investments, promoting environmentally sound natural resource use, and assisting communities with planning, zoning, and strategic investments.

Strategy Five – Forge. Partnerships were identified as a way to strengthen the effectiveness and efficiency of local governance. The strategy includes exploring consolidation, shared services, and revenue or tax base sharing opportunities.

Projects recommended by the 2012 MV REDC Action Plan specific to Herkimer County have been incorporated herein.

MV REDC 2013 Action Plan

The MV REDC 2013 Action Plan reviewed the progress made in 2012, set out goals for the following year and summarized the Mohawk Valley Regional Sustainability Plan initiative that began in 2013 and was adopted in 2013. The Plan, part of the State’s Cleaner, Greener Communities initiative: 1) estimated greenhouse gas emissions and energy use and evaluated natural resources, economic assets, liabilities, and opportunities; 2) established sustainability targets for energy supplies, transportation, waste management, water conservation, land use, housing, agriculture, economic development, and open space; and 3) outlined short- and long-term actions to achieve the targets and goals.

The 2013 recap is organized around the five economic development strategies described more fully in the 2012 Action Plan: 1) Grow Business, 2) Build Workforce Alignment and Education, 3) Create Pathways to Innovation, 4) Revive Infrastructure, and 5) Forge Partnerships. The 2013 Action Plan updates community members and municipal officials on CFA projects, regional initiatives, and economic development strategies outlined in the MV REDC’s 5-Year Strategic Plan. The Action Plan describes the



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status of the five strategies and their relationship to the sustainability goals. It summarizes the priority projects for each strategy in text and graphics. There is also a section for each of the five strategies that contains project award amounts, an estimated timeline for completion, economic impacts, and status. Projects recommended by the 2013 MV REDC Action Plan specific to Herkimer County have been incorporated herein.

Floodplain Risk Assessment of the Mohawk River (September 2012)

In 2011-2012, the NYS Department of Environmental Conservation (DEC), Bureau of Flood Protection and Dam Safety partnered with a private firm to complete a floodplain assessment for a section of the Mohawk River Valley stretching from Utica in Oneida County, through Herkimer County, Montgomery County, and Schenectady County. The assessment utilized the Hazards US software (HAZUS), a standardized methodology to estimate potential losses from earthquakes, floods, and hurricanes, to estimate the extent of potential damage to structures within the study area based on different four future flooding scenarios (10, 50, 100, and 500-year flood events). As part of the assessment, critical facilities and structures within the study area were geographically identified and assigned a flood risk. Cost estimates for potential damage for each flooding scenario along the study area were calculated and mapped. The NYRCR Plan builds upon the risk assessment and mapping done by the DEC Floodplain Risk Assessment by expanding the risk assessment process to the entire County.

Herkimer County Soil and Water Conservation District Watershed Assessments (2012)

In 2012, the Herkimer County Soil and Water Conservation District completed watershed assessments for all of the major creeks and brooks (22 in total) in Herkimer County. The watershed assessments score various components of the watershed to assess the overall water quality based on existing land use, wildlife habitat, percentage of groundwater recharge, and other factors. The assessments also provide a summary of the watershed score and recommendations for improving water quality and watershed health that were important in the development of strategies and projects for this NYRCR Plan.

Herkimer County 2012 Risk Assessment Profile

In 1998, Herkimer County Integrated County Planning partnered with Herkimer County HealthNET, Inc. and various agencies to form the Comprehensive Assessment Task Force in order to develop a comprehensive assessment of health and human services in Herkimer County. The Task Force released the first Herkimer County Risk Assessment Profile in 2000 and published updates in 2003, 2006, 2009, and 2012. The Risk Assessment uses data collected from a variety of sources to assess key indicators within six "life areas" including community, citizenship, physical and emotional health, family, economic security, and education. The 2012 Risk Assessment provided a useful summary of key public health and socioeconomic considerations that provided a basis for understanding Herkimer County in relation to this NYRCR Plan.



Mohawk River Basin Program and the Mohawk River Basin Action Agenda 2012-2016

In April 2009, a report was issued to the Governor and the New York State Legislature that outlined a set of recommendations to help New York State better manage its natural resources and human activities in order to protect and enhance its waterways. The Mohawk River Basin Program and Action Agenda were created as a result of one of the recommendations in the 2009 report. The program and Action Agenda seeks to “promote the integrated and coordinated management of the many environmental and cultural resources of the river and its watershed.” The goals of the Action Agenda include:

1. Conserve and protect fish, wildlife and their habitats in the Mohawk River watershed while communicating to the public about their value to human communities and natural processes so that people can enjoy the unique natural character of the watershed and its living ecosystem.
2. Protect and improve water quality in the Mohawk River watershed and communicate the issues so that people are protected from health hazards, drinking water supplies are conserved, aquatic communities flourish and natural processes are sustained.
3. Promote flood hazard risk reduction and enhanced flood resiliency by providing the tools to ensure that communities are prepared for climate change and important cultural, recreational, economic and environmental assets protected.
4. Revitalize Mohawk River Basin communities utilizing sustainable development principles, integrating environmental, social, historic, cultural, recreational and economic factors, in order to shape the region as a vibrant, healthy, desirable place to live, work and visit.
5. Maintain and encourage those land uses within the Mohawk River Watershed that support working landscapes such as well-managed farms and forests that help sustain the regional economy, protect and enhance open space and rural development patterns, and provide for the sustainable use and protection of resources.

This NYRCR Plan relates to the Mohawk River Basin Program and Action Agenda in that the recovery and resiliency projects recommended herein help achieve the five stated goals of the Action Agenda.

Flood Insurance Study, Herkimer County, NY (September 2011)

Completed in September 2011, the Herkimer County Flood Insurance Study (FIS) was performed by FEMA to assess the existence and severity of flood hazards in Herkimer County. The FIS provides a history of flooding throughout the County as well as hydrologic and hydraulic analyses for the primary creeks and rivers that result in flooding within the County. This FIS revised and updated previous Flood Insurance Rate Maps (FIRMS) based on recent flood events, particularly a major flood event that occurred in 2006. The Herkimer County Flood Insurance Study provided a comprehensive assessment of the locations at most risk of flooding in Herkimer County as well as updated flood risk data that was necessary in the risk assessment component of the NYRCR Plan.



US Army Corps of Engineers Flood Damage Reduction Studies for the Fulmer, Moyer, and Steele Creeks (2005)

In May 2005, the U.S. Army Corps of Engineers published draft flood control feasibility studies for the Steele, Moyer and Fulmer Creeks in Herkimer County. Prior to these studies, the Army Corps had completed interim flood control feasibility studies in July 1996 as well as a Hydrologic and Hydraulic analysis, released in September 2003. The draft flood control feasibility studies of 2005 evaluated several different flood control and mitigation scenarios for each of the three creek watersheds with a focus on flood control measures intended to alleviate flooding in the more developed Villages. The feasibility studies included an economic and environmental analysis for the recommended flood control measures. Despite the large amount of time and effort that went into the Army Corps studies, no flood control actions or projects resulted from the assessment. The NYRCR Plan builds upon the US Army Corps of Engineers Flood Damage Reduction Studies by taking into account the extensive data collection and modeling that was performed for these studies.

Multi-Community Flood Hazard Mitigation Plans for the Fulmer Creek Basin, the Moyer Creek Basin and the Steele Creek Basin (May 2004)

In 2004, the Herkimer-Oneida Counties Comprehensive Planning Program developed multi-community flood hazard mitigation plans for the Fulmer Creek, Moyer Creek and Steele Creek watershed basins. The flood hazard mitigation plans reviewed and evaluated the risks and hazards of flooding to the communities within each basin and provided recommendations and strategies to alleviate flood-related impacts to the communities. The flood hazard mitigation plans provide a comprehensive analysis of the critical facilities most at risk of flooding within the three creek watershed basins and provide detailed recommendations that were used as a basis for some of the strategies and projects included within this NYRCR Plan.

Watershed Protection of the Mohawk River Watershed – Phase I (September 2003)

Completed in 2003, this study, funded by the U.S. Environmental Protection Agency, Office of Wetland Protection, performed aerial photo delineation of the wetlands within the Adirondack Park portion of the Mohawk River Watershed. The aerial photo delineation combined with other existing data layers provides a consistent and continuous representation of the wetlands in this geographic area. By delineating the wetlands, the overall goals are to “characterize, evaluate and protect the wetlands in the basin.”²⁷ The Watershed Protection of the Mohawk River Watershed report provides an important basis for information on watersheds in Herkimer County that has significantly contributed to the comprehensive understanding of the Mohawk River tributaries that are discussed in this report.



Canalway Trail Gap Segment Assessment Report, Frankfort-Ilion-Mohawk-German Flatts, Herkimer County, New York (1998)

Following the creation of the NYS Canal Recreationway Plan, the Canalway Trail Partnership Project was developed to provide technical assistance to communities along the Canal System to further the development of the Canalway Trail where gaps exist. This report provides an assessment of the gaps that exist in Herkimer County as the Canal passes through the Villages of Herkimer, Mohawk, Ilion and Frankfort. The assessment outlines the current landscape conditions of the proposed trail location, existing ownership of the land and necessary acquisitions, and the economic opportunities that would exist once the trail is complete. Lastly, the assessment identifies the critical needs and opportunities that should be followed to complete the trail, such as the construction of bridges and the delineation of wetlands. At the time of the writing of this report, this section of the Canalway trail has not been completed. This NYRCR Plan builds upon the Canal Recreationway Plan and the Canalway Trail Gap Segment Assessment Report by including key project recommendations for completing the trail through Herkimer County as part of an overall economic development strategy in the County.

New York State Canal Recreationway Plan (August 1995)

In 1991, the New York State Legislature enacted the “Thruway 2000” legislation that transferred the NY Canal System from the NYS Department of Transportation to the NYS Thruway Authority and established the Canal Recreationway Commission. The Commission was mandated to prepare a Recreationway Plan, which would include recommendations for the 524-mile navigable section of the Canal System. The Canal Recreationway Plan promotes three fundamental goals that are embodied in the Commission’s vision for the Canal System: (1) preserving the best of the past, (2) enhancing recreational opportunities, and (3) fostering appropriate and sustainable economic development. Since the Canal Recreationway Plan was released in 1995, 40 miles of Canal Trail have been developed, resulting in 230 miles of completed Canal Trail statewide.²⁸



Section 2. Assessment of Risk and Need



West Canada Creek, Town of Herkimer



A. ASSESSMENT OF NEEDS AND OPPORTUNITIES

The Committee identified needs and opportunities 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. Need is also used here to describe actions that could help rebuild and/or expand the local economy, and actions that can make the County more resilient in the future. 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, the Committee was provided with insights as to the inherent resiliency of structures, procedures, and operations. This assessment process led to a discussion of Community needs, which 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 throughout the course of rebuilding. The post-disaster environment also presents opportunities to rebuild 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 4).

The six Recovery Support Functions are:

- 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.
- 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.
- Health and Social Services: Restoring and potentially expanding public health programs, health care facilities and essential social services, especially for vulnerable populations.



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- **Housing:** Assessing local housing conditions and associated risk levels during the re-building process, rebuilding and improving the resiliency of housing.
- **Infrastructure:** Investing in infrastructure to rebuild resources destroyed during the storm and to reduce future risks to critical assets.
- **Natural and Cultural Resources:** The rehabilitation, management, and protection of the natural 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 for each RSF.

Community Planning and Capacity Building

The Community identified the need to develop and, in some cases, enhance local regulations for developing in the floodplain. Currently, there are few towns or villages in Herkimer County that have any type of comprehensive plan that restricts residential development within the floodplain. Existing plans within the villages have generally not been updated in several decades. In addition, increased communication and coordination among responding agencies is needed to give residents adequate warning to evacuate. Increased awareness and education of storm risks and the need for improved preparation, including evacuation plans, was identified as an opportunity to improve overall public safety. The Community identified the opportunity to address some of these needs through the NYS Canal Corporation stream gauge/early warning system to be implemented in the near future. The existing expertise and resources of the Oneida-Herkimer Comprehensive Planning Department was also identified as an opportunity to help develop comprehensive floodplain regulation. Below are the needs and opportunities identified by the Committee for Community Planning and Capacity Building:

Table 6. Herkimer County Community Planning and Capacity Building Needs and Opportunities

Community Planning and Capacity Building
<p>Need: Stronger regulation of development in the floodplain Opportunity: Identify and encourage communities to utilize available resources and expertise (such as the Herkimer-Oneida Counties Comprehensive Planning Program)</p>
<p>Need: Improved communication systems during and immediately after emergencies Opportunity: Obtain real-time information from the NYS Canal Corporation and National Weather Service as part of the Mohawk River Basin gauge program which will also include smaller creek systems Opportunity: Utilize communication technologies to inform citizens and enhance communications with neighboring municipalities Opportunity: Provide improved coordination among responding agencies and organizations following a disaster</p>
<p>Need: Provide more information to property owners to help them before, during and after floods Opportunity: Greater utilization of the existing social media and on-line resources such as the Herkimer County Flood Resources website (http://herkimerflood.org/)</p>



Economic Development

Herkimer County has a rich economic history. In the early years of the United States, Herkimer County was a highly productive agricultural area, helping to form the region that became known as the nation’s bread basket. Later, Herkimer County became a major transportation corridor with the construction of the Erie Canal. However, Herkimer County, and the Mohawk Valley region, has been in a slow state of economic decline for the past several decades. The Community identified the need to bolster the regional economy and reinvigorate existing downtown areas. The Committee referenced the implementation of the Mohawk Valley Economic Development Council Strategic Plan, released in 2011, as a great opportunity for the County to improve its economic resiliency. The table below shows the Economic Development needs and opportunities identified by the Committee.

Table 7. Herkimer County Economic Development Needs and Opportunities

Economic Development
<p>Need: Develop a more resilient regional economy Opportunity: Support existing programs and strategies outlined in the Mohawk Valley Regional Economic Development Council Strategic Plan</p>
<p>Need: Address stagnant downtowns and strengthen hamlet centers Opportunity: Capitalize on existing historical buildings and walkable downtown centers</p>
<p>Need: Increase number of year-round visitors to the region Opportunity: 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

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. One clear problem was the lack of shelters in close proximity to the populations most in need, i.e., the elderly and disabled. In addition, the most vulnerable populations did not have all the necessary information to adequately prepare for and respond during the disaster. 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 direct educational efforts towards those populations. The opportunity to enhance existing access routes to critical healthcare facilities and identify alternative routes was discussed. Lastly, the new emergency shelter being constructed in the Town of German Flatts was identified as an opportunity to increase shelter capacity, particularly for the most vulnerable populations in the County. Table 8 shows the Health and Social Services needs and opportunities identified for the County.



Table 8. Herkimer County Health and Social Services Needs and Opportunities

Health and Social Services
<p>Need: Ensure that the most vulnerable populations have the necessary information to adequately prepare for future disasters and available temporary housing in the event of an emergency</p> <p>Opportunity: Capitalize on existing institutional knowledge of vulnerable populations among local agencies and departments</p>
<p>Need: Ensure hospital and healthcare access during storm events</p> <p>Opportunity: Enhance and harden access roads to hospitals and healthcare facilities that are prone to flooding</p>

Housing

During the summer 2013 flood event, hundreds of homes throughout Herkimer County were flooded with several feet of water and twenty were assessed as destroyed. The housing stock in Herkimer County is relatively old, with the median year of construction being 1952, compared to 1955 in New York State.²⁹ Many of these older structures 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 current mortgage, and therefore are not required to buy flood insurance. There are also many mobile home parks within Herkimer County and in some cases the mobile home park areas are located within the floodplain. The Committee strongly supported efforts to relocate homes and structures outside of the floodplain to mitigate future damage and reduce risk for local residents. However, the Committee recognized that in many cases monetary incentives for residents and property owners to relocate are inadequate. Housing needs and opportunities for the County are outlined in the table below.

Table 9. Herkimer County Housing Needs and Opportunities

Housing
<p>Need: Protect existing housing stock from repetitive flooding</p> <p>Opportunity: Identify homes that are physically and economically feasible for elevation or other mitigation enhancements</p> <p>Opportunity: Ensure code-compliance with NFIP program and existing local building codes</p>
<p>Need: Provide diverse and affordable housing options</p> <p>Opportunity: Create incentives to encourage rehabilitation of existing housing stock and development of housing</p>

Infrastructure

The impact of the summer 2013 flooding on infrastructure was a significant focus of both the Committee and the residents of Herkimer County. The roads, drainage systems, electrical substations, and water supply facilities were extensively impacted, affecting both public safety and quality of life. The Community identified a clear need to harden and, in some cases, relocate critical infrastructure facilities, such as electrical and public water supply infrastructure. Additionally, the Community identified the need to upgrade key tributary systems to mitigate future storm events and frequent flooding conditions. Herkimer County infrastructure needs and opportunities are identified in Table 10.



Table 10. Herkimer County Infrastructure Needs and Opportunities

Infrastructure
<p>Need: Ensure uninterrupted power supply during storm</p> <p>Opportunity: Reinforce existing power infrastructure</p> <p>Opportunity: Investigate renewable power generation opportunities, such as solar, wind, hydropower, etc.</p>
<p>Need: Maintain and improve sanitary sewers, storm water sewers and water supply systems</p> <p>Opportunity: Replacement of subsurface infrastructure in conjunction with roadway repaving projects</p> <p>Opportunity: Use of GIS technology to improve management of infrastructure and response to disasters</p>
<p>Need: Ensure sufficient access into/out of villages during storm events</p> <p>Opportunity: High priority projects already identified by the Herkimer County Department of Highways and the DEC/DOT studies - Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives</p>

Natural and Cultural Resources

The Committee recognized the value of the natural environment by noting the importance of the Mohawk River and its tributaries to the identity, economy, and environment of the County. The Committee emphasized the importance of protecting and restoring the natural floodplain for the streams that pose the highest risk of flooding. Improving stream and storm water management was identified as the most critical need among both the Committee and the Community. The Committee also recognized the importance of using their natural resources to support recreational activities that can act as economic drivers and assets. Table 11 lists needs and opportunities associated with Natural and Cultural Resources.

Table 11. Herkimer County Natural and Cultural Resource Needs and Opportunities

Natural and Cultural Resources
<p>Need: Improve stream and storm water management</p> <p>Opportunity: Enhance stream capacity and restore natural floodplain</p> <p>Opportunity: Manage storm water runoff close to the source</p> <p>Opportunity: Increase strength of stream banks to be more resilient against future flooding</p>
<p>Need: Protect and enhance open space for better management of natural processes and improved recreational access</p> <p>Opportunity: Provide additional recreational opportunities</p>



B. DESCRIPTION OF COMMUNITY ASSETS AND ASSESSMENT OF RISK

A critical goal of the Herkimer County NYRCR Resiliency Plan is to ensure that the Community's social, economic, and natural-resource assets and systems are more resilient against future storms. To that end, assets that have been or may be affected by storms were identified to help determine whether reconstruction strategies and implementation projects effectively reduce risk to all aspects of the community.

Assets are places, services, or groups that fulfill the important community economic, environmental, and social functions. Examples of assets include critical facilities such as schools, hospitals, and medical facilities; emergency and public safety services, including fire and police protection; and natural, cultural, and recreational resources such as wetlands, beaches, and parks. Assets also include critical infrastructure such as transportation roadways, mass transit services, utility networks, and stormwater systems required to support those essential community functions.

The purpose of the asset inventory is to create a comprehensive description of the assets within Herkimer County whose loss or impairment due to flood events would compromise essential functions or critical facilities of the community. The inventory documents both the landscape features and vulnerabilities of the assets that contribute to flood risk. The inventory provides the basis for examining assets in more detailed risk mapping and assessment.

Assets were identified in three geographic areas at risk to storm inundation and flooding.³⁰

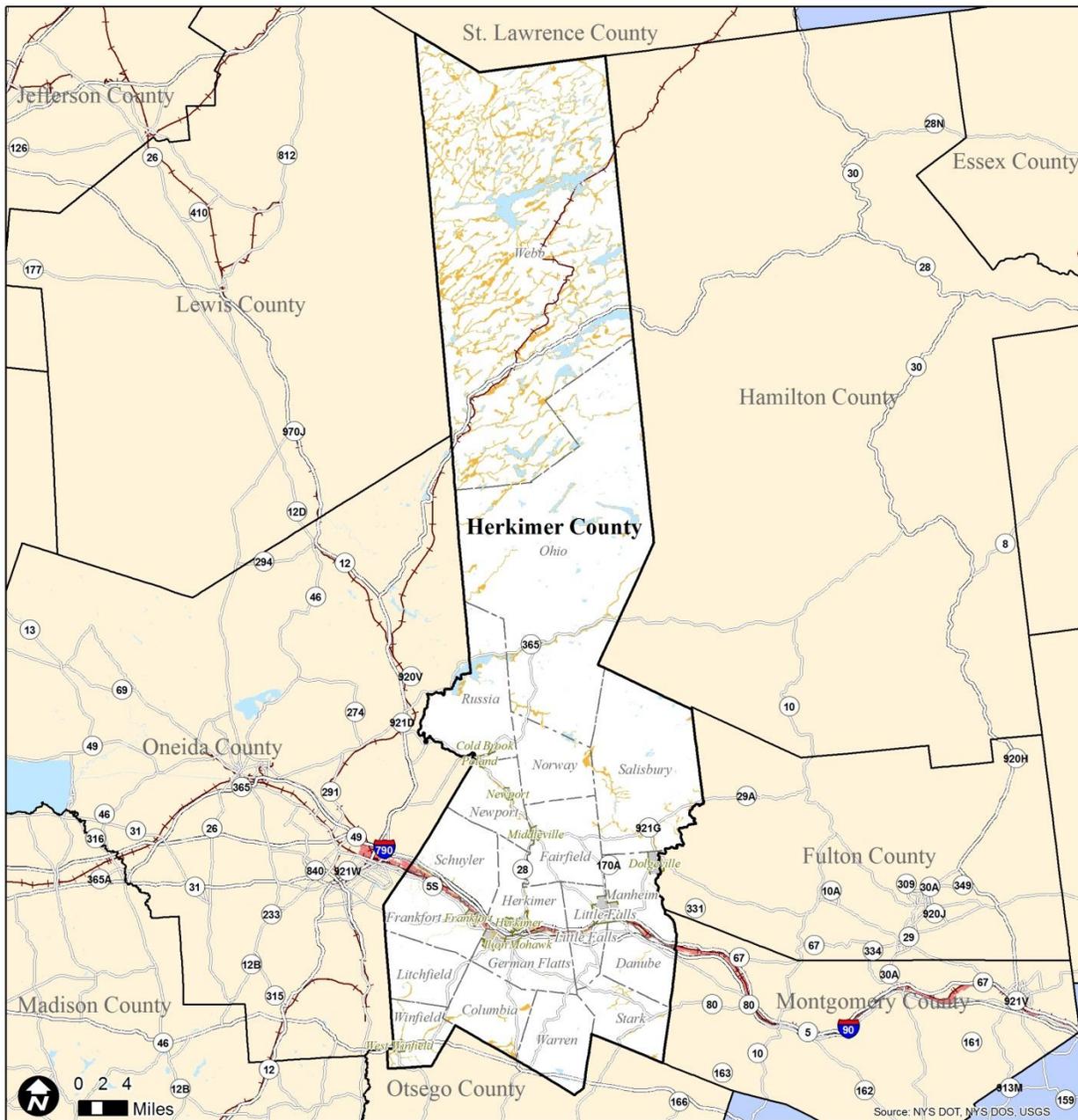
- **Extreme Risk Area:** Assets located in the extreme risk area are currently encompassed by the 10-year floodplain boundary and/or are locations known to flood relatively frequently;
- **High Risk Area:** Assets located outside of the Extreme Risk Area that are located within the 100-year floodplain; and
- **Moderate Risk Area:** Assets located within the boundary of the 500-year floodplain.

For most of the County, a 10-year floodplain boundary was not available. To identify locations known to frequently flood, the Committee performed an exercise in which they were asked to draw the areas of repetitive flooding on detailed maps from across the County. Based on this exercise, the Consultant team digitized this information as a GIS layer, which is reflected in the following maps as "Areas Reported to Repetitively Flood." When developing the asset inventory, assets located within these areas were characterized as being located in the Extreme Risk Zone.

The following figures illustrate the Extreme, High, and Moderate Risk Areas within NYRCR Herkimer County as a whole and in greater detail within the City of Little Falls and several Towns and Villages (Figures 4 and 4 –a to 4 - p).



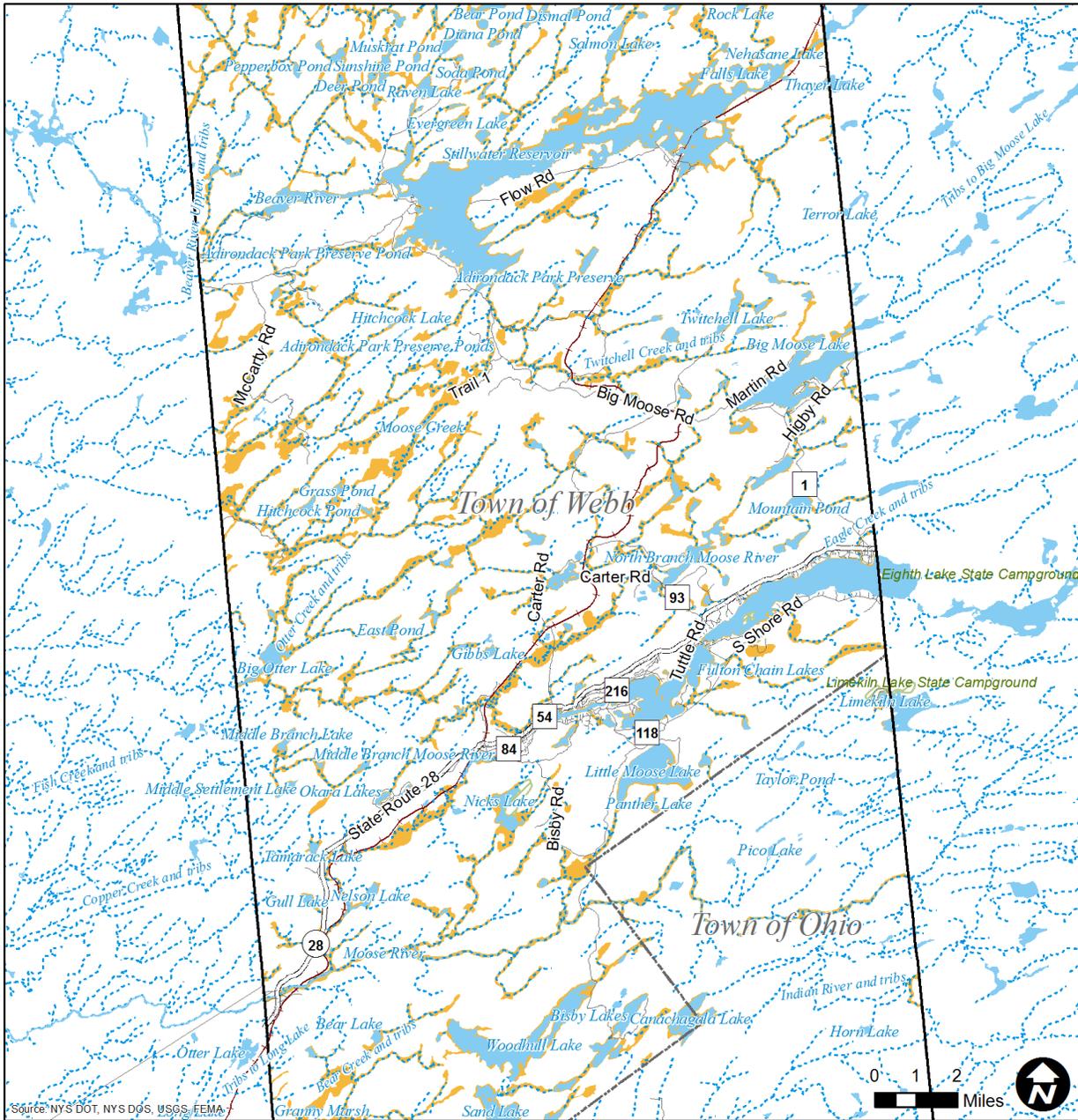
Figure 4. Risk Zones Countywide



Herkimer County NYRCR Planning Area	Highways Interstate State Railroad City / Village	Risk Area Extreme High Moderate	
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Figure 4 - a. Risk Zones in the Town of Webb



Town of Webb
Detail View - NYRCR Planning Area

¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

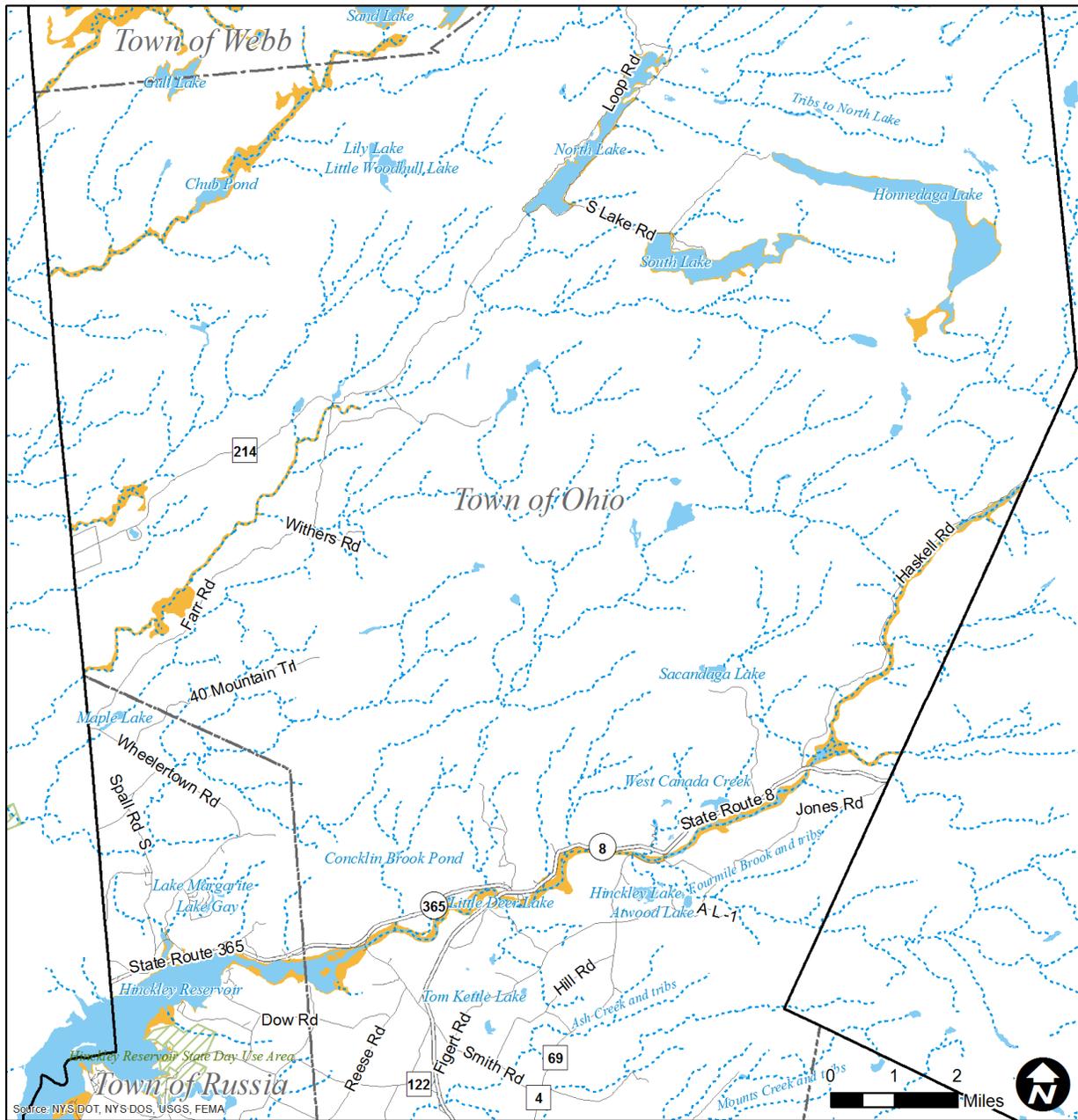
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - b. Risk Zones in the Town of Ohio



Town of Ohio
Detail View - NYRCR Planning Area

¹Risk Areas:
Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
Extreme - 10-year flood zone (FEMA)
High - 100-year flood zone (FEMA)
Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

Highways

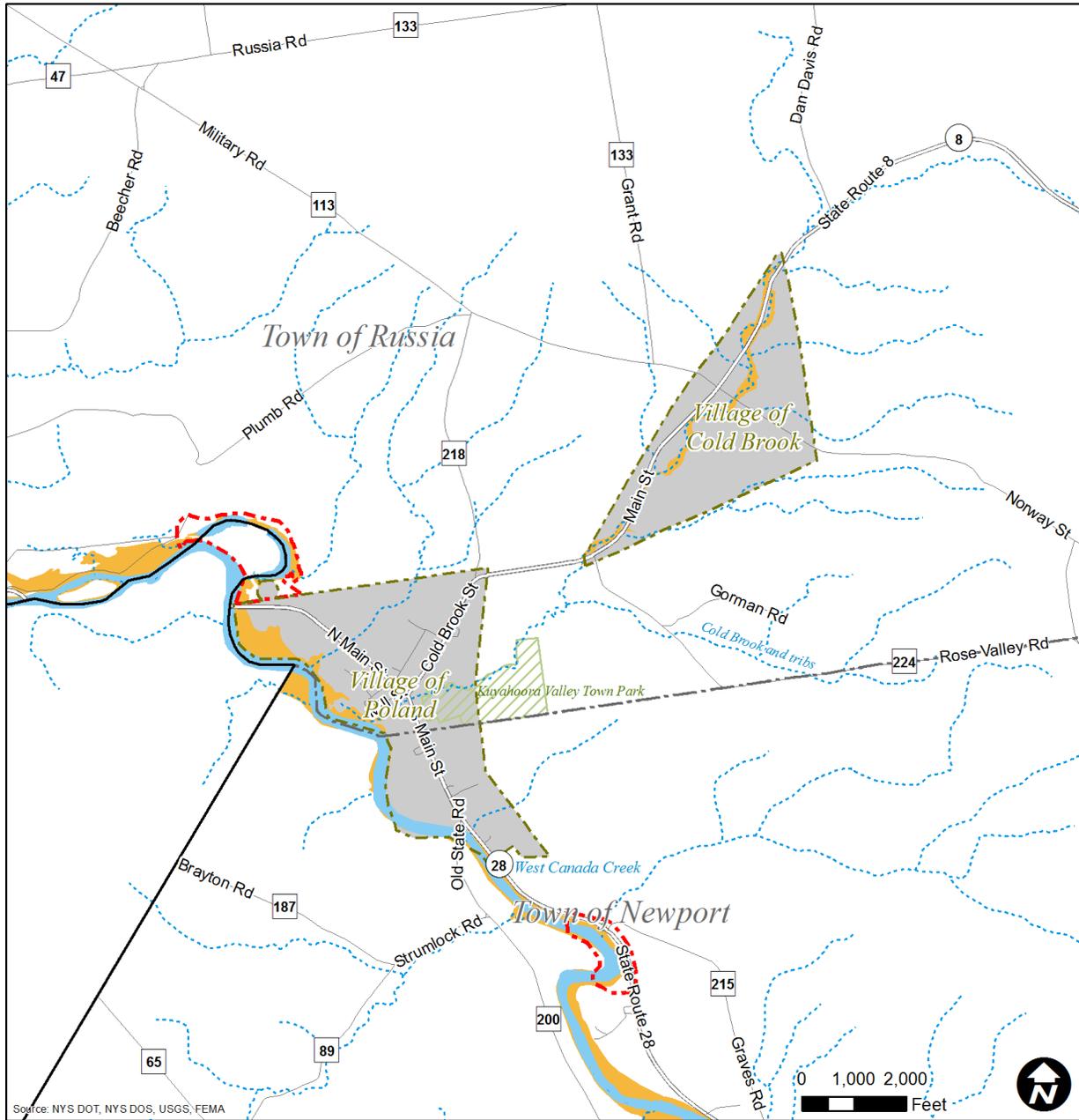
- Interstate
- State
- Railroad
- City/Village



Source: NYS DOT, NYS DOS, USGS, FEMA



Figure 4 - c. Risk Zones in the Villages of Cold Brook and Poland



Source: NYS DOT, NYS DOS, USGS, FEMA

Poland and Coldbrook
Detail View - NYRCR Planning Area

¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-year flood zone (FEMA)

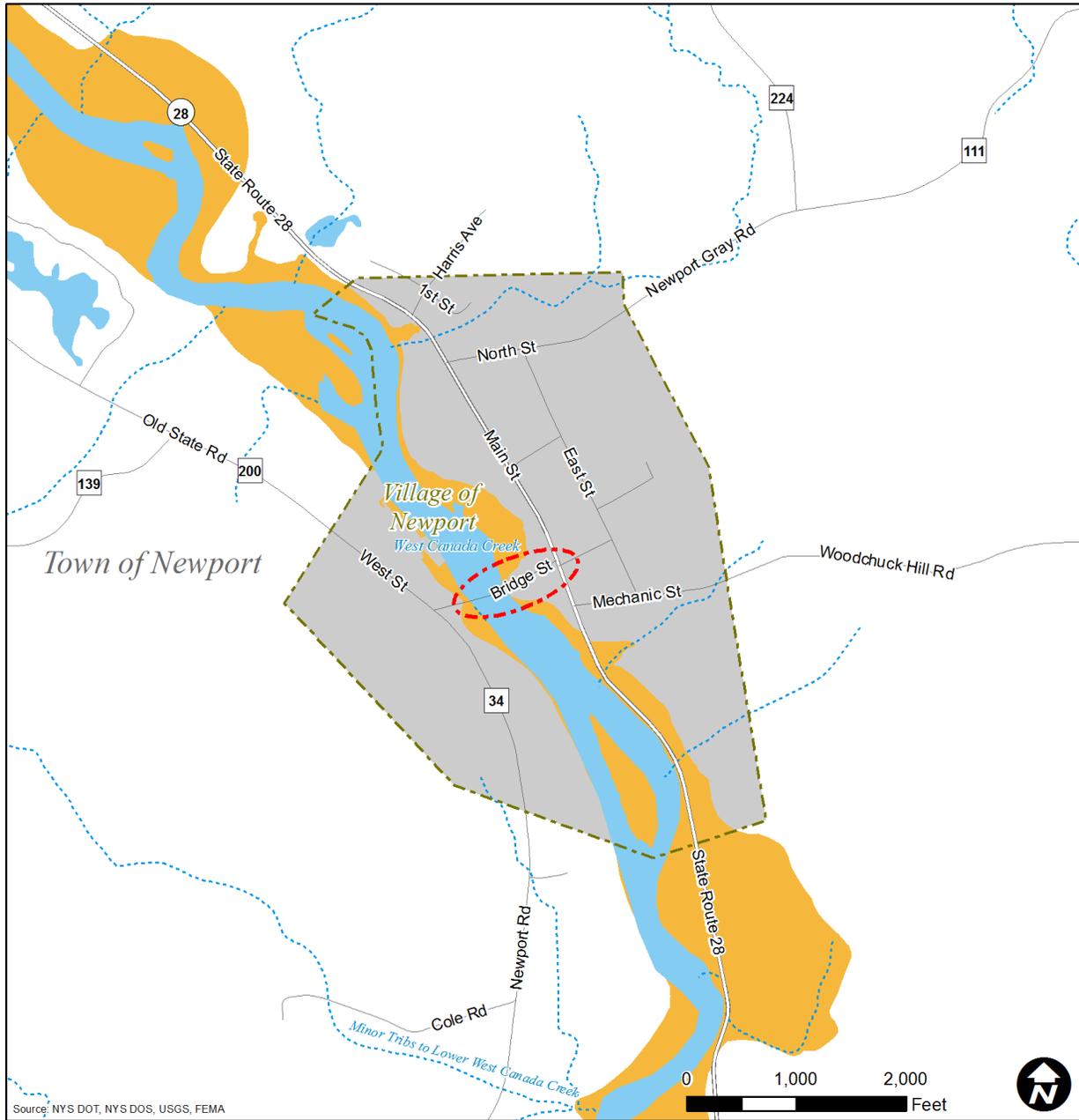
- Risk Area ¹**
- Extreme (Repetitive)
 - Extreme
 - High
 - Moderate

- Highways**
- Interstate
 - State
 - Railroad
 - City/Village





Figure 4 - d. Risk Zones in the Village of Newport



Source: NYS DOT, NYS DOS, USGS, FEMA

Newport

Detail View - NYRCR Planning Area

¹Risk Areas:

- Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
- Extreme - 10-year flood zone (FEMA)
- High - 100-year flood zone (FEMA)
- Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

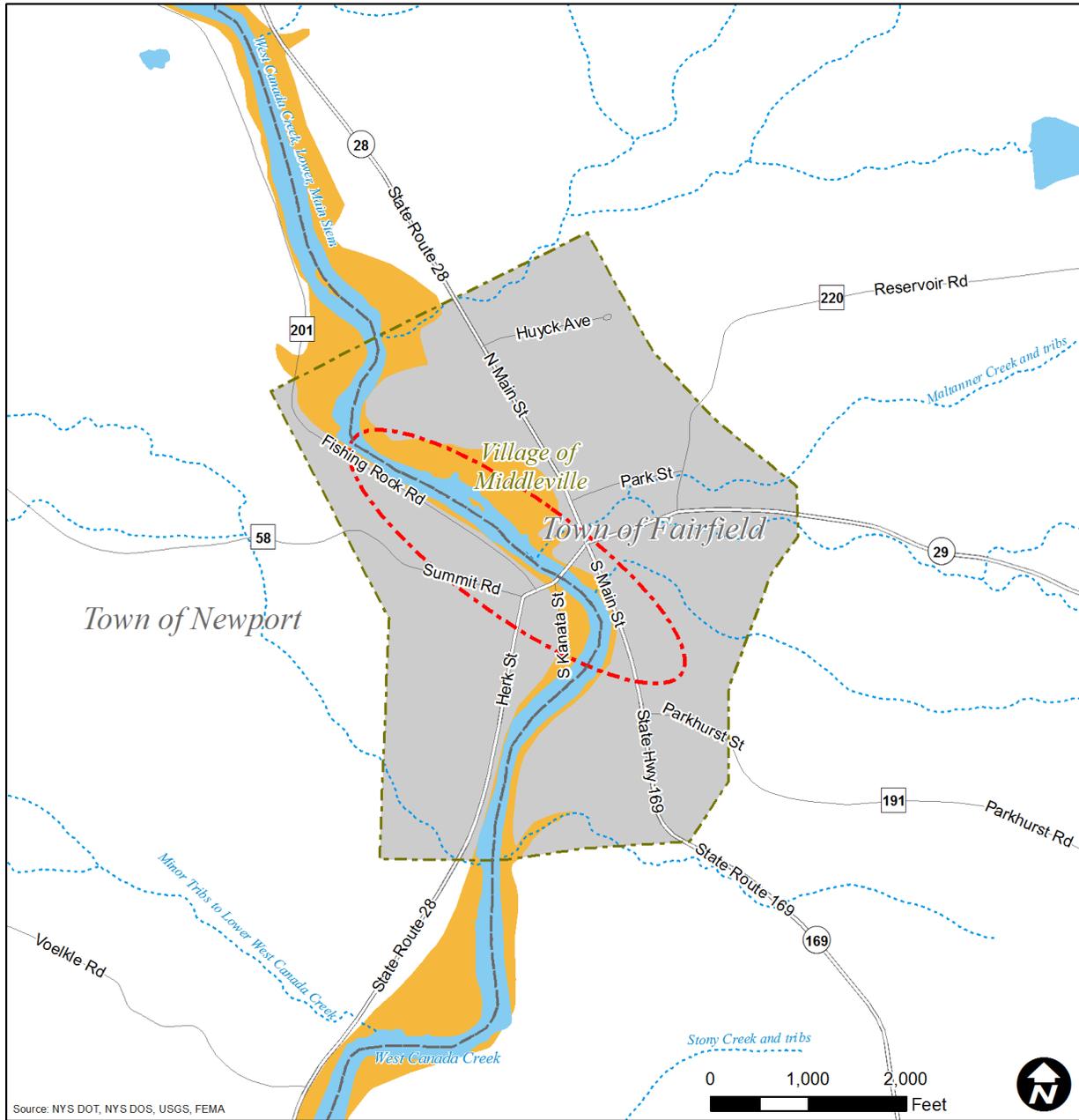
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - e. Risk Zones in the Village of Middleville



Source: NYS DOT, NYS DOS, USGS, FEMA

Middleville

Detail View - NYRCR Planning Area

¹Risk Areas:

- Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
- Extreme - 10-year flood zone (FEMA)
- High - 100-year flood zone (FEMA)
- Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

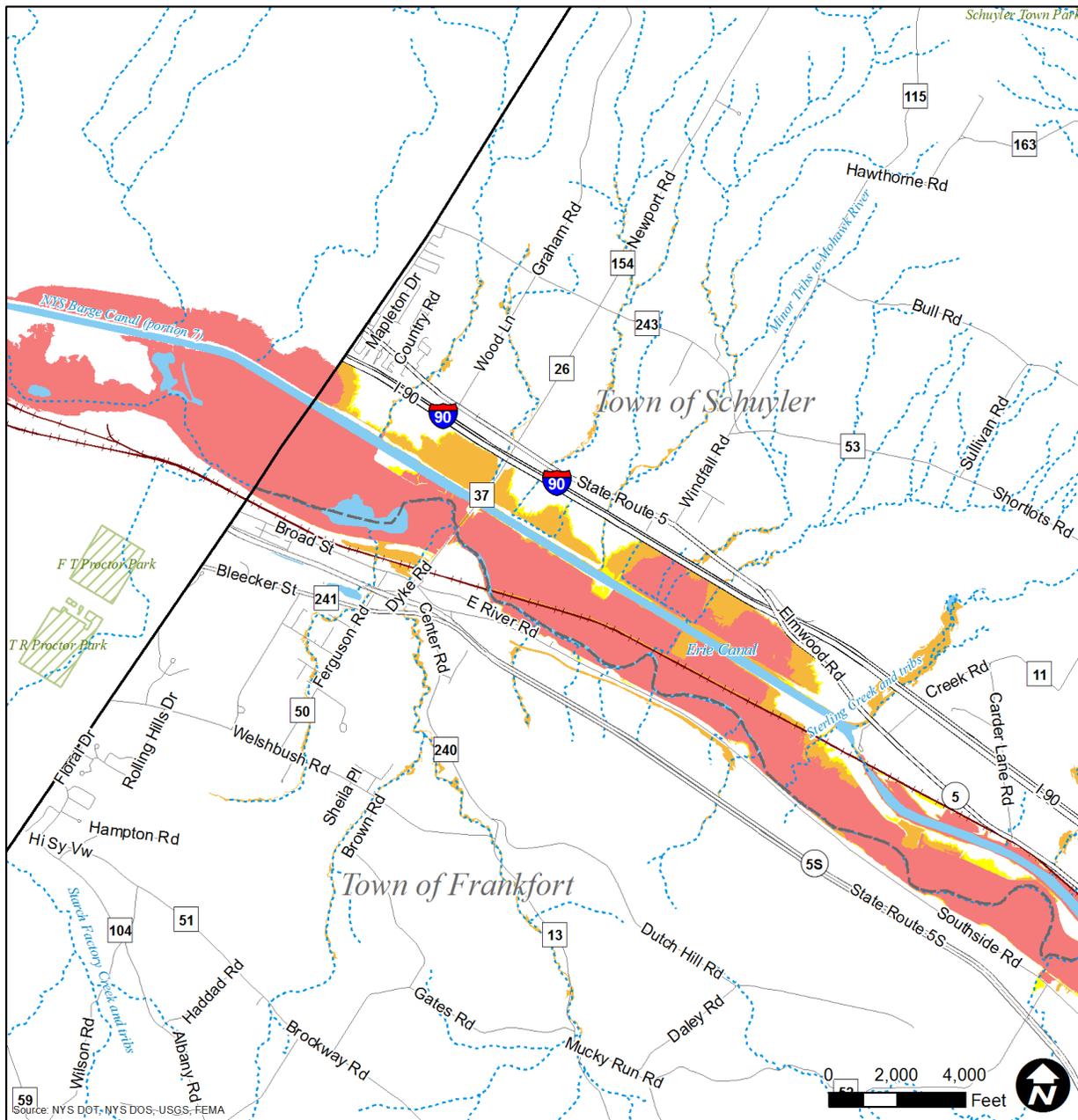
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - f. Risk Zones in the Towns of Frankfort and Schuyler



Towns of Schuyler and Frankfort
Detail View - NYRCR Planning Area

¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

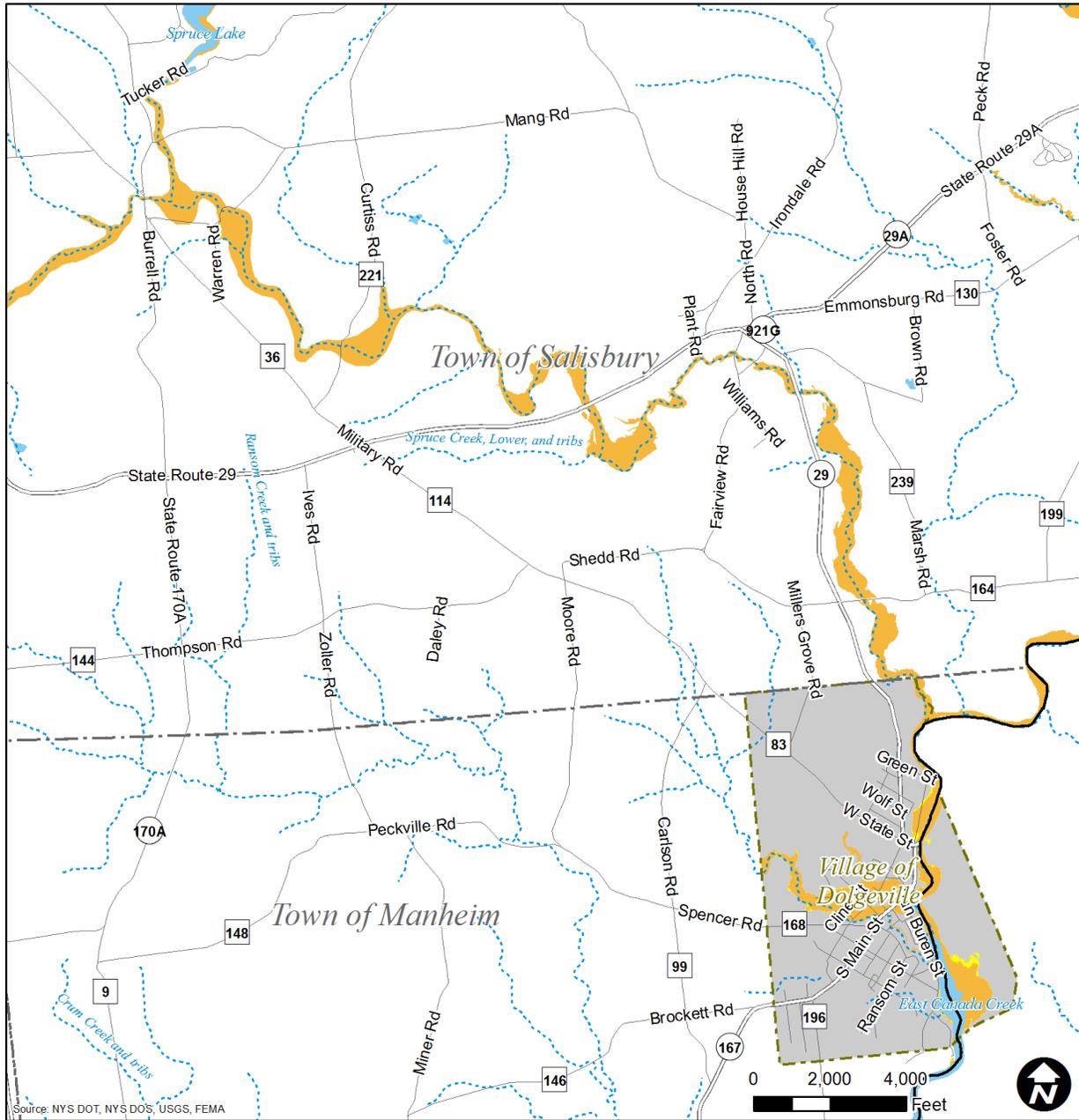
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - g. Risk Zones in the Village of Dolgeville and Town of Salisbury



Source: NYS DOT, NYS DOS, USGS, FEMA

Dolgeville

Detail View - NYRCR Planning Area

- ¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

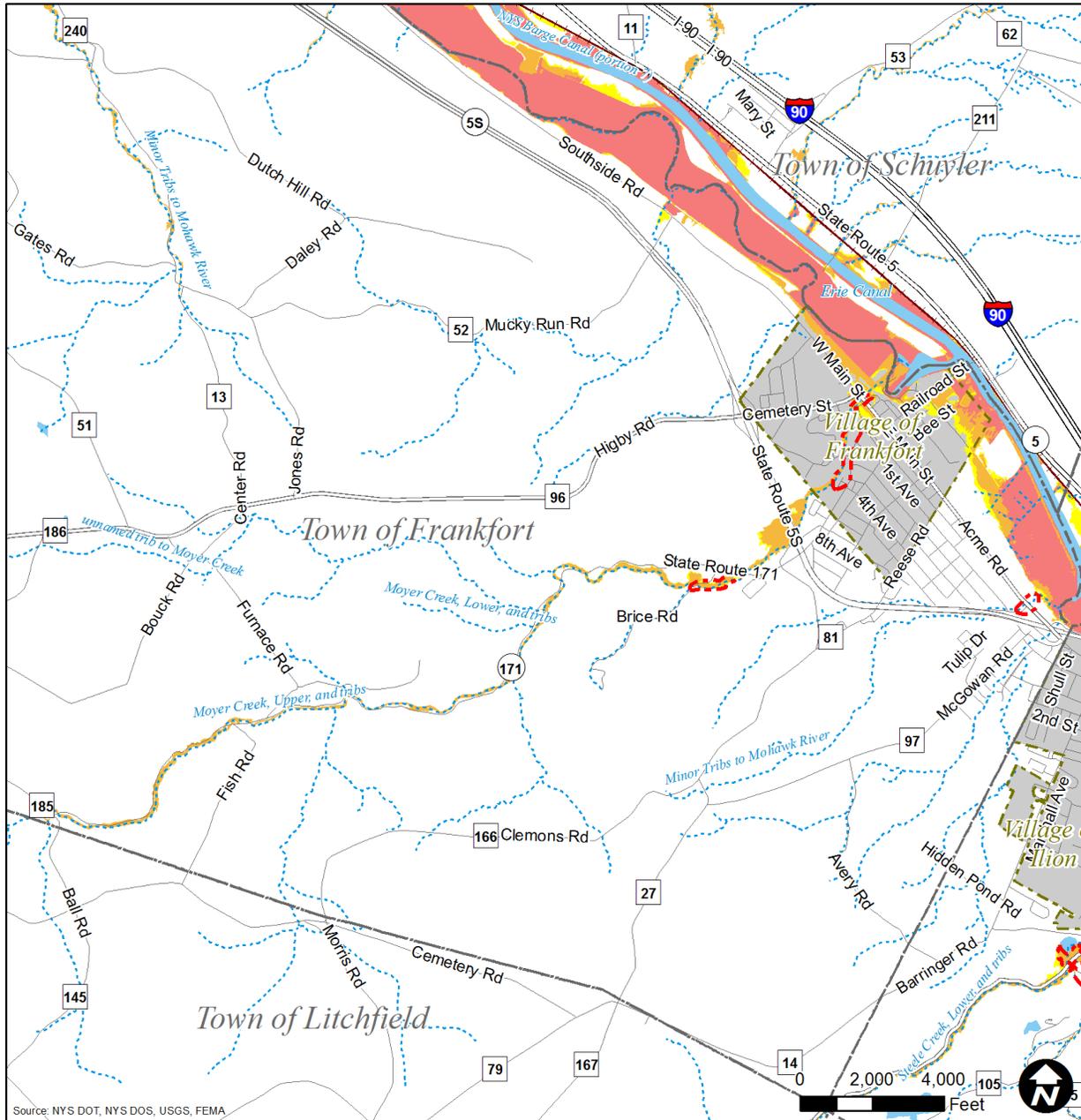
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - h. Risk Zones in the Town and Village of Frankfort



Source: NYS DOT, NYS DOS, USGS, FEMA

Frankfort

Detail View - NYRCR Planning Area

¹Risk Areas:

- Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
- Extreme - 10-year flood zone (FEMA)
- High - 100-year flood zone (FEMA)
- Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

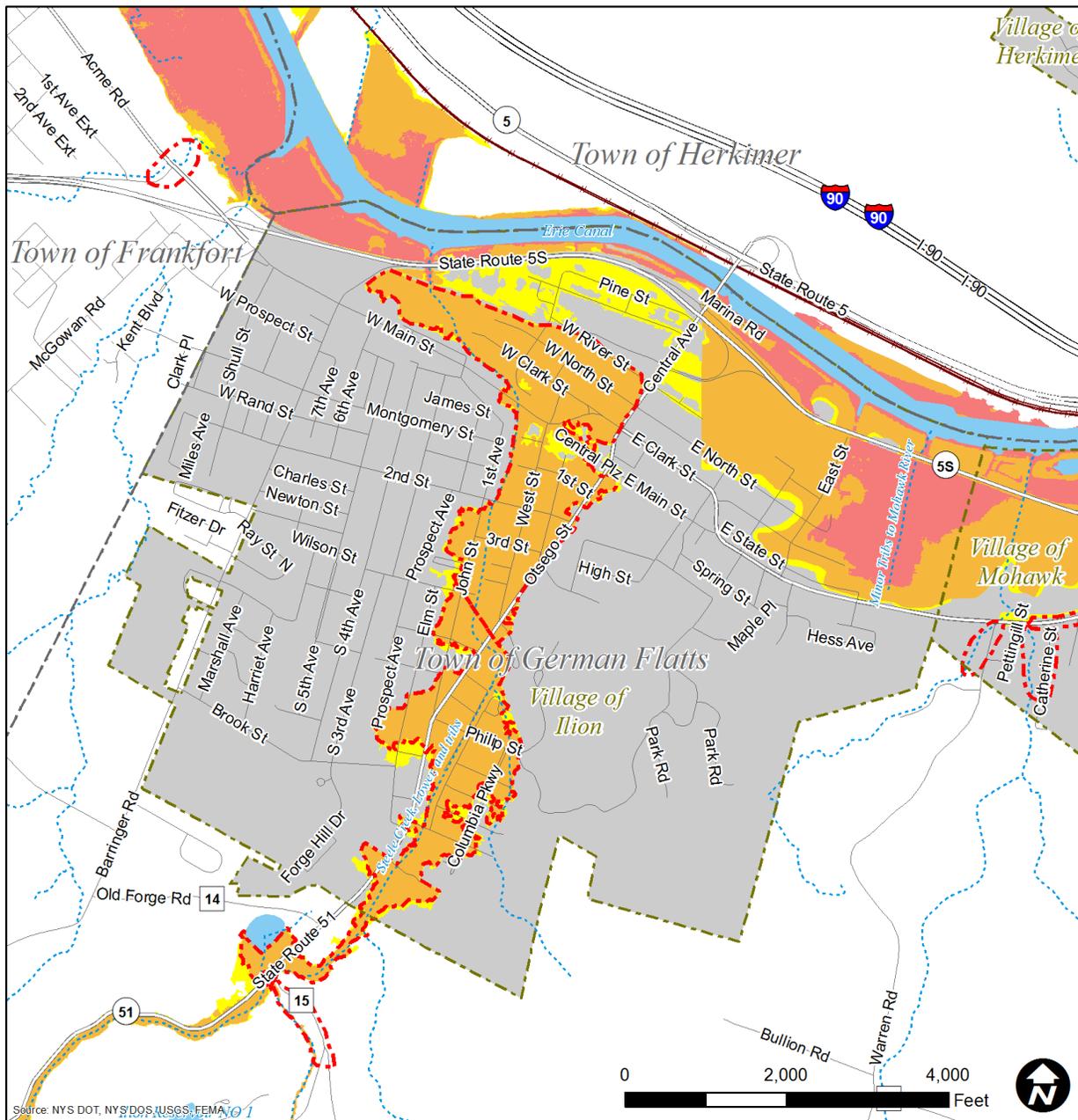
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - i. Risk Zones in the Village of Ilion



Ilion
 Detail View - NYRCR Planning Area

¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-year flood zone (FEMA)

Risk Area¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

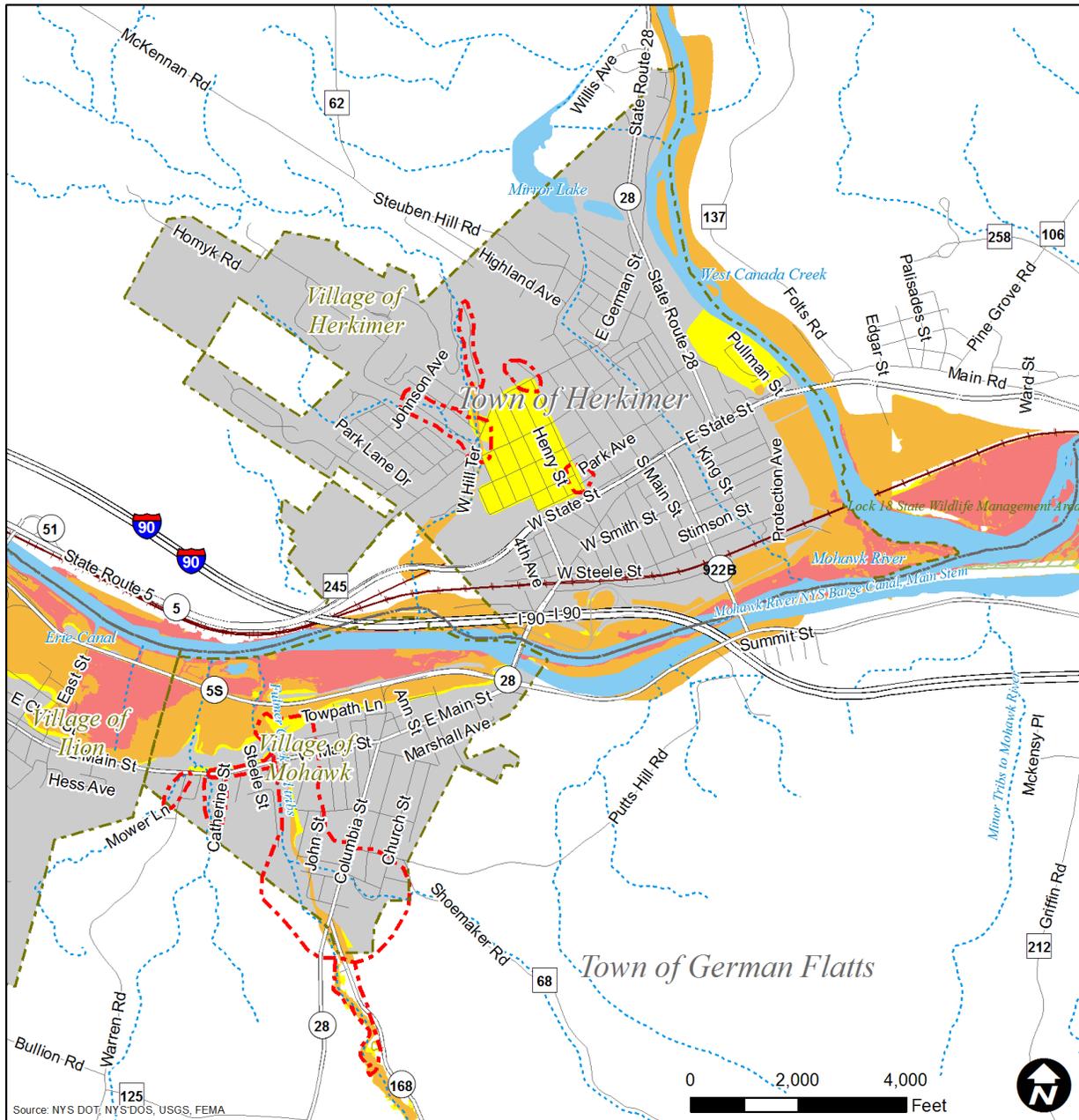
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - j. Risk Zones in the Villages of Herkimer and Mohawk



Mohawk & Herkimer
Detail View - NYRCR Planning Area

¹Risk Areas:
Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
Extreme - 10-year flood zone (FEMA)
High - 100-year flood zone (FEMA)
Moderate - 500-year flood zone (FEMA)

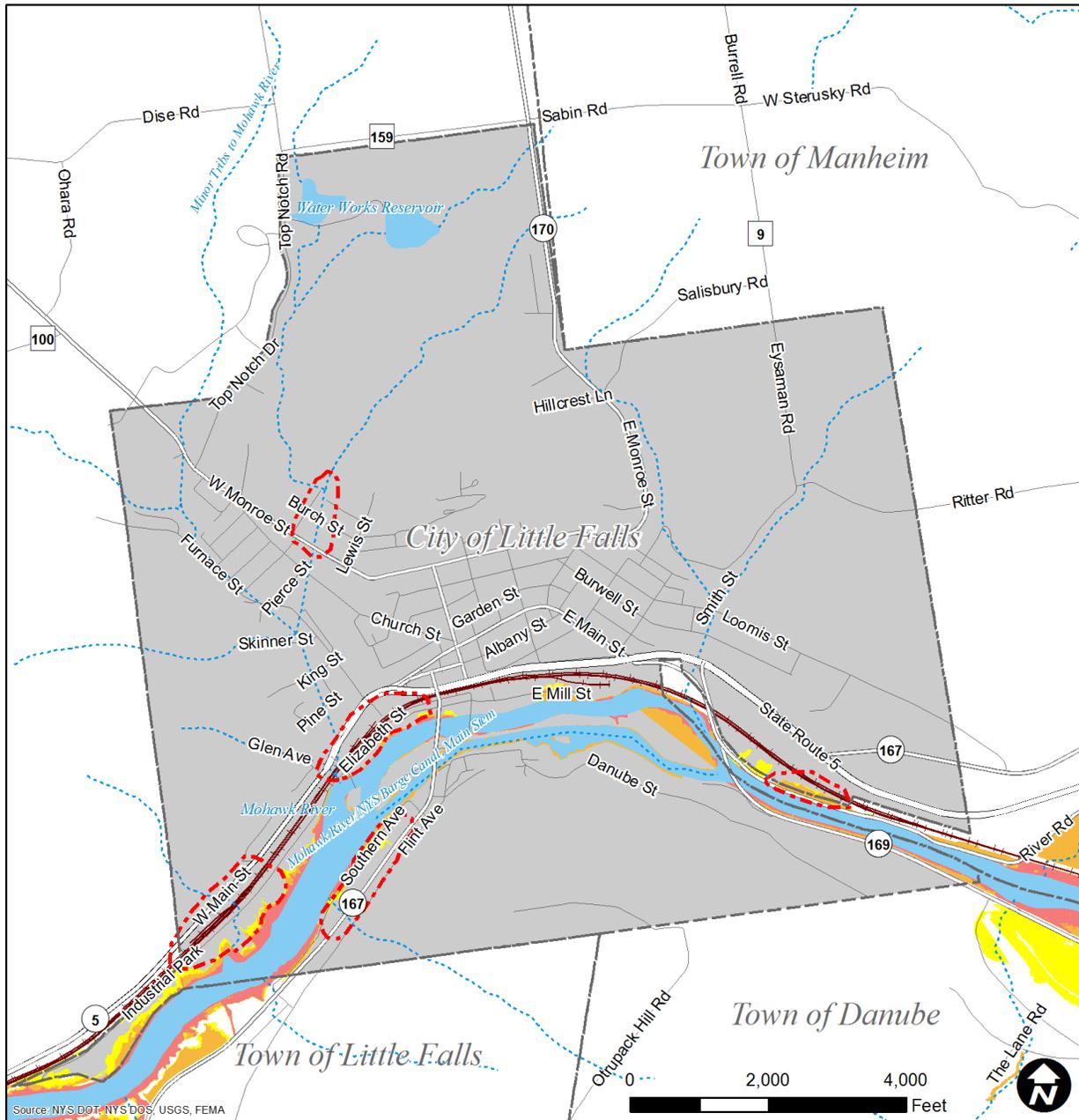
- Risk Area¹**
- Extreme (Repetitive)
 - Extreme
 - High
 - Moderate

- Highways**
- Interstate
 - State
 - Railroad
 - City/Village





Figure 4 - k. Risk Zones in the City of Little Falls



Little Falls

Detail View - NYRCR Planning Area

¹Risk Areas:

- Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
- Extreme - 10-year flood zone (FEMA)
- High - 100-year flood zone (FEMA)
- Moderate - 500-year flood zone (FEMA)

Risk Area¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

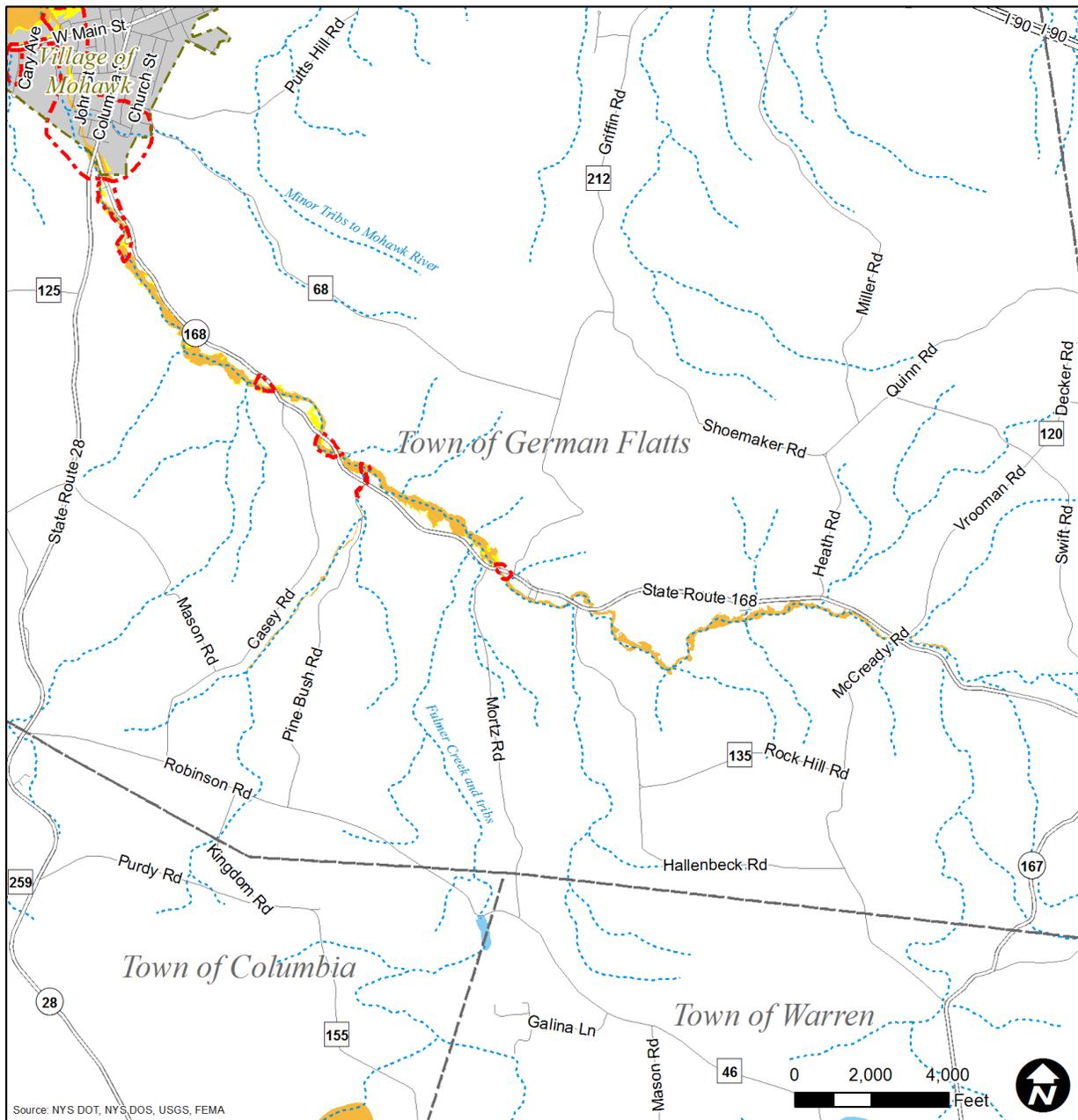
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - I. Risk Zones in the Town of German Flatts



Source: NYS DOT, NYS DOS, USGS, FEMA

Town of German Flatts
Detail View - NYRCR Planning Area

¹Risk Areas:
Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
Extreme - 10-year flood zone (FEMA)
High - 100-year flood zone (FEMA)
Moderate - 500-year flood zone (FEMA)

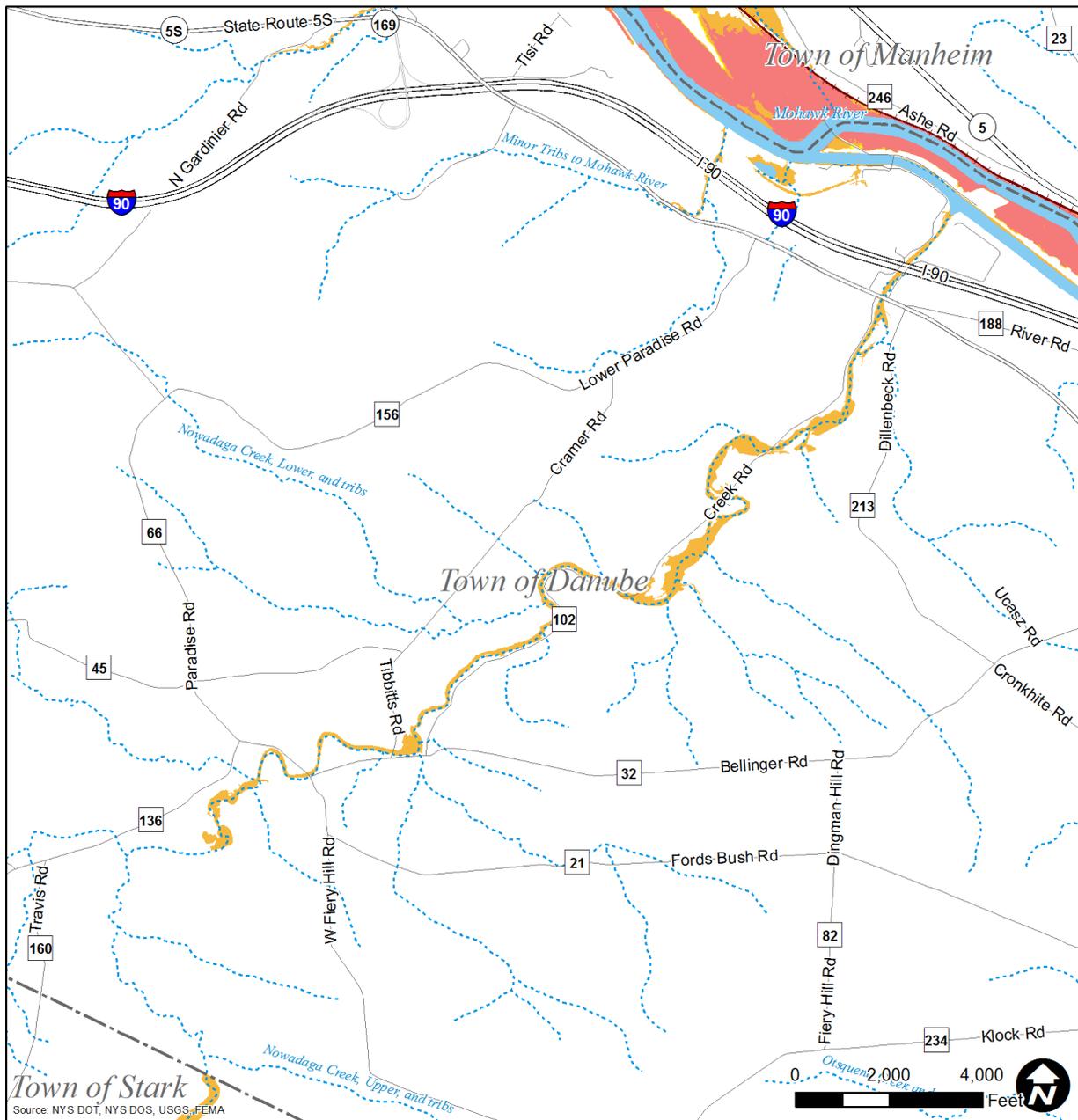
- Risk Area¹**
- Extreme (Repetitive)
 - Extreme
 - High
 - Moderate

- Highways**
- Interstate
 - State
 - Railroad
 - City/Village





Figure 4 - m. Risk Zones in the Town of Danube



Town of Danube
Detail View - NYRCR Planning Area

¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

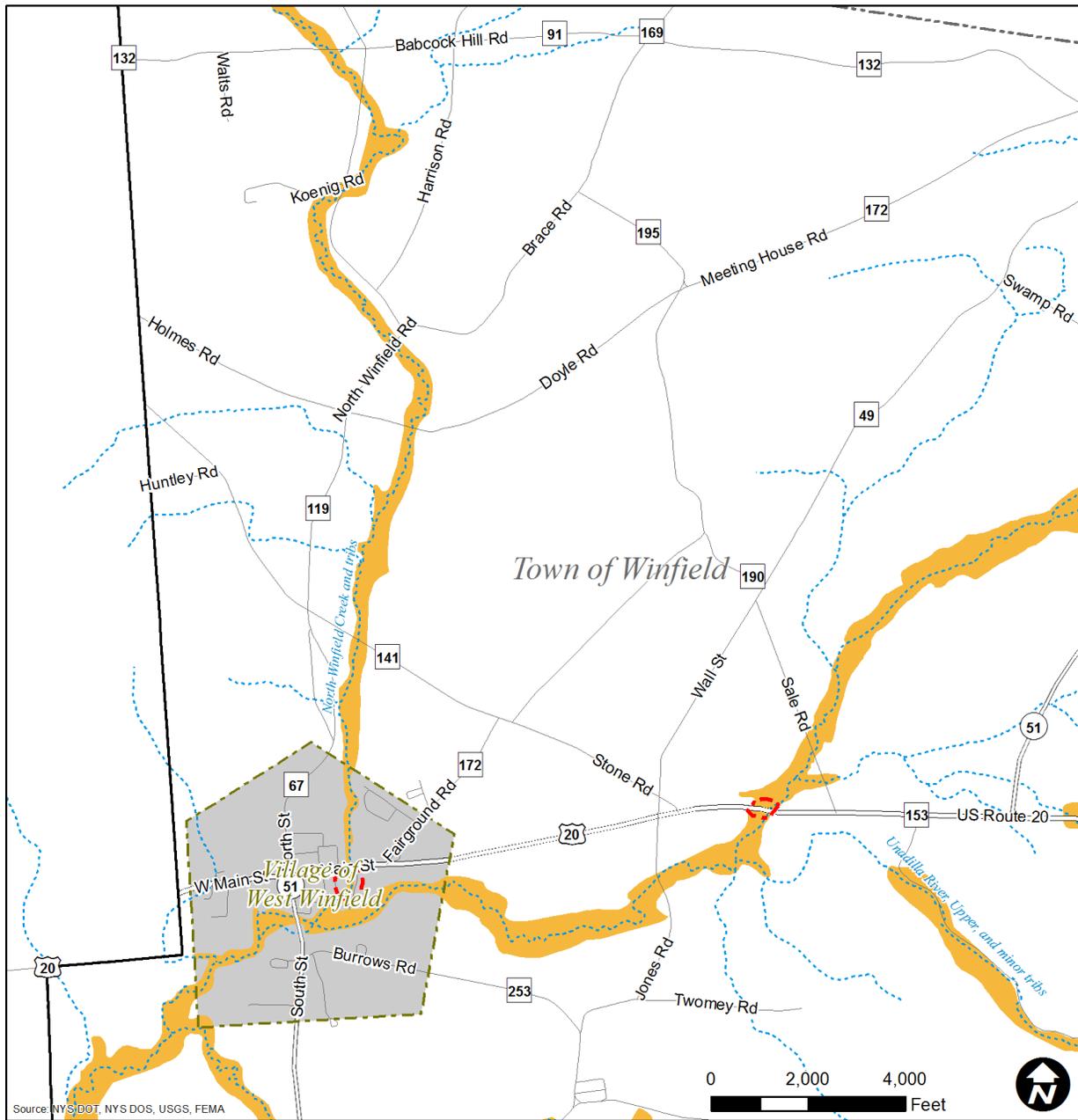
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - n. Risk Zones in the Town of Winfield and Village of West Winfield



Source: NYS DOT, NYS DOS, USGS, FEMA

West Winfield

Detail View - NYRCR Planning Area

¹Risk Areas:

- Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
- Extreme - 10-year flood zone (FEMA)
- High - 100-year flood zone (FEMA)
- Moderate - 500-year flood zone (FEMA)

Risk Area ¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

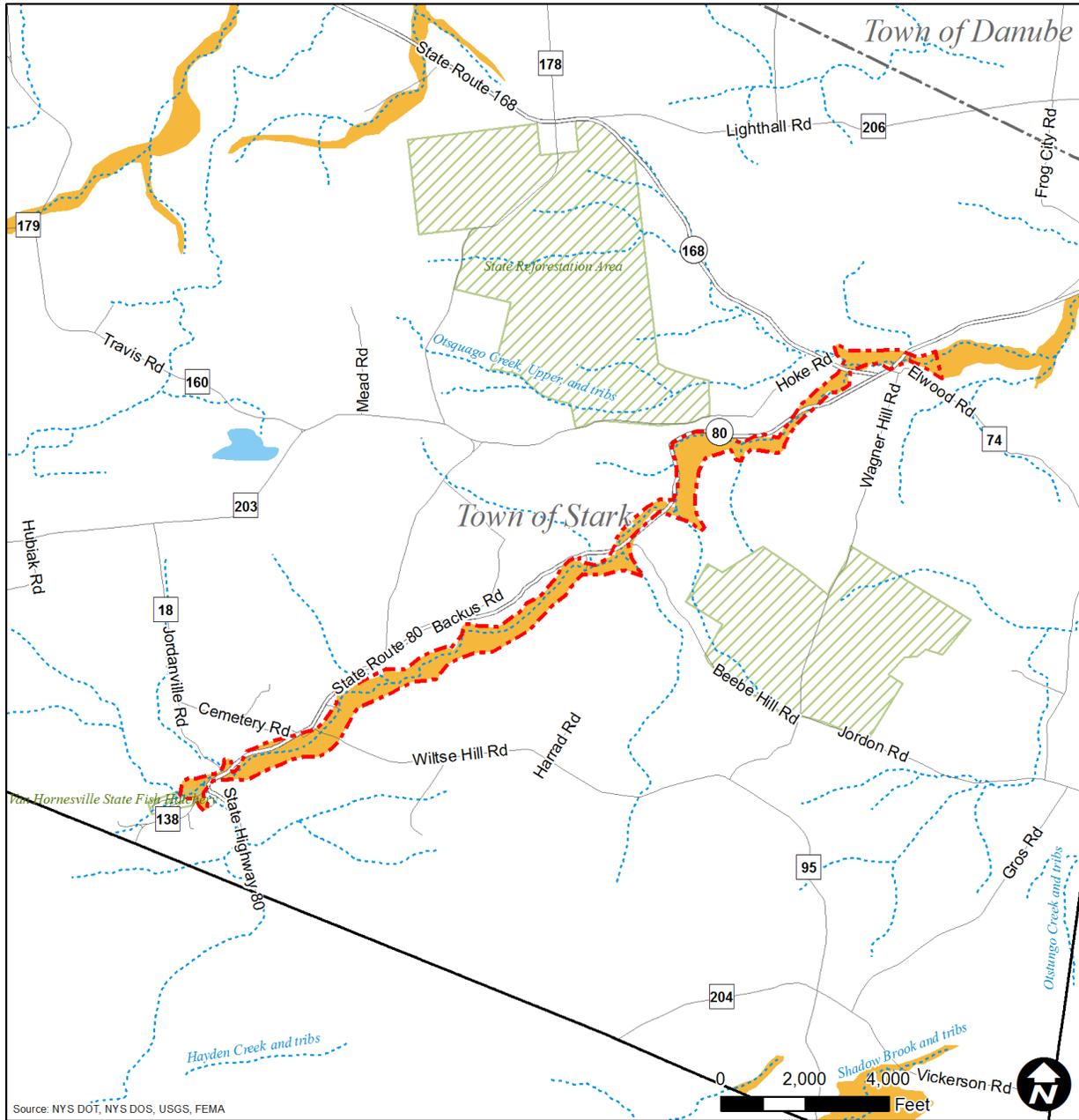
Highways

- Interstate
- State
- Railroad
- City/Village





Figure 4 - o. Risk Zones in Van Hornesville (Town of Stark)



Source: NYS DOT, NYS DOS, USGS, FEMA

Van Hornesville (Stark)
Detail View - NYRCR Planning Area

¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-year flood zone (FEMA)

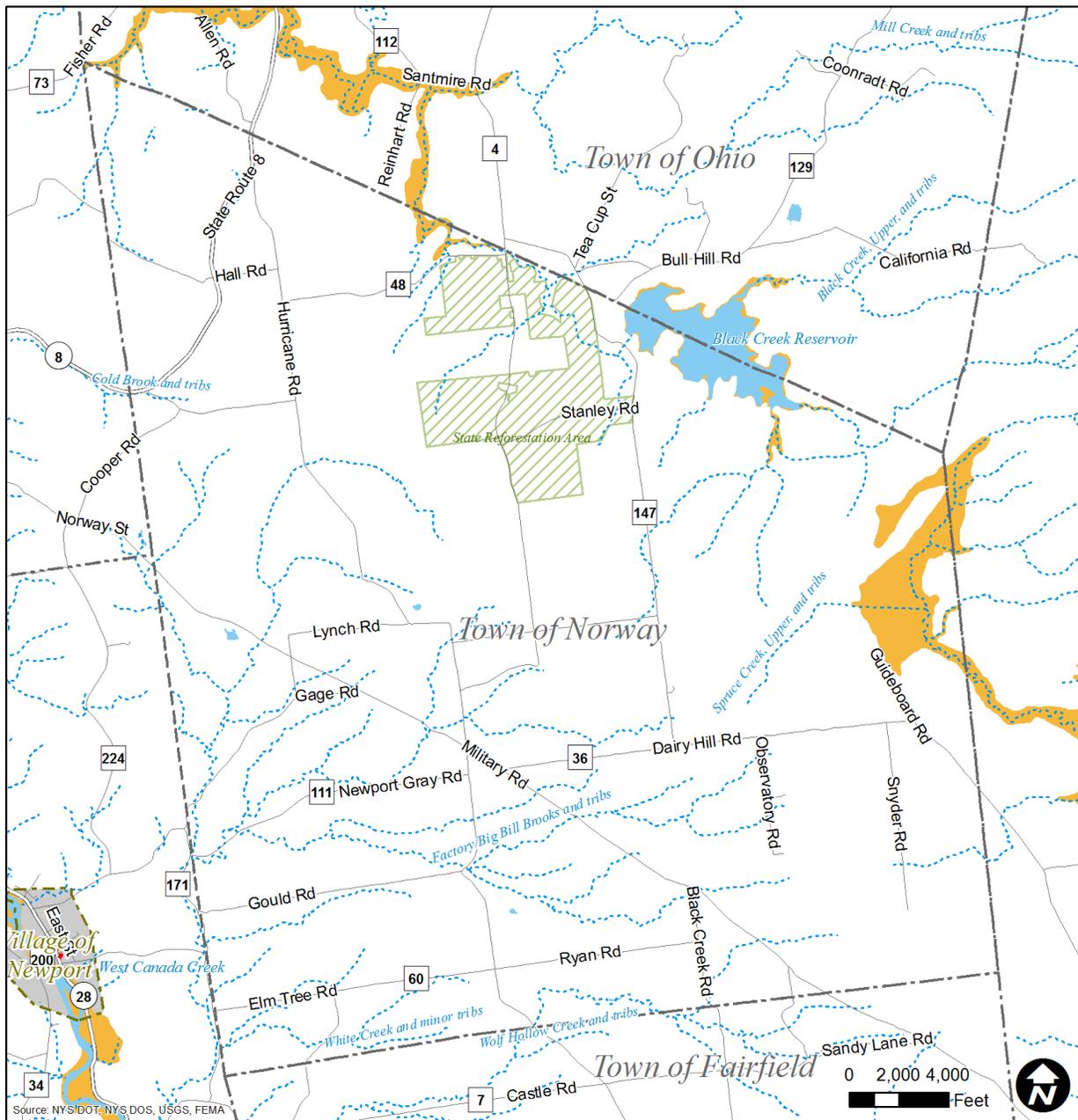
- Risk Area ¹**
- Extreme (Repetitive)
 - Extreme
 - High
 - Moderate

- Highways**
- Interstate
 - State
 - Railroad
 - City/Village





Figure 4 – p. Risk Zones in the Town of Norway



Town of Norway

Detail View - NYRCR Planning Area

¹Risk Areas:
 Repetitive - high frequency flood areas as identified by the NYRCR Herkimer Committee
 Extreme - 10-year flood zone (FEMA)
 High - 100-year flood zone (FEMA)
 Moderate - 500-flood zone (FEMA)

Risk Area¹

- Extreme (Repetitive)
- Extreme
- High
- Moderate

Highways

- Interstate
- State
- Railroad
- City/Village





Herkimer County NY Rising Countywide Resiliency Plan

The complete inventory (available in Section VI) provides more detail on each identified asset, such as its classification as a critical or non-critical facility; whether the asset serves a vulnerable population; and the relative value, or importance, of the asset to the Community's resiliency. The NYRCR Planning Committee identified the assets' value as high, medium, or low:

High: 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: 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: Asset(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. The asset's function can be started, replaced, or temporarily duplicated in a short-term time frame with limited burden to a Community's long-term health.

The NYRCR Consultant Team also categorized contributing landscape attributes and physical features of assets that affected the severity of storm impacts. For example, assets located at an elevation below base flood elevation and lack any defensive flood protection are at increased risk of flooding. Specific features of assets that are at risk (e.g., mechanical equipment below flood elevation) are also recorded in the inventory to help guide the selection of appropriate strategies and projects for risk reduction.

The Community assets and their corresponding risk areas, as well as each asset's value as identified by the Committee and Community at large, are presented in the following tables. The complete asset inventory is found in Section VI: Additional Materials.

Assets were identified through two methods: community engagement and technical mapping. The community engagement approach was undertaken by members of the Committee, who identified assets known to Community residents. In addition, public comment and insight on Community assets was sought and provided at two Public Engagement Events.

The technical mapping effort was undertaken using data supplied by New York State Department of State (NYS DOS) and other State and Federal agencies, including the Federal Emergency Management Agency (FEMA).

The technical mapping effort was intended to supplement the work of the Committee by identifying resources that may be inaccessible to the public but that are regulated by a public agency (such as undeveloped parklands and marshes), as well as those 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. The assets identified through the technical mapping effort were combined with the asset data provided by the Committee and Community residents during Committee Meetings and Public Engagement Events. The results provided a complete picture of not only the assets themselves, but also their value as perceived by the Community.

An overview of Community assets located in the extreme, high, or moderate risk areas, as well as those that were identified by the Committee or Community, is provided below. The asset classifications, which included facilities and/or specific places as well as systems (storm sewer, electric, etc.), are as follows:

- Natural and Cultural Resources;
- Health and Social Services;
- Infrastructure Systems;
- Housing; and
- Economic

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 rivers and creeks of Herkimer 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 Mohawk River watershed, are large in geographic area and span multiple municipalities. While the rivers and creeks have been altered considerably in the past in attempts to reduce flood risks, Herkimer 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 assets.

The northern half of Herkimer County is part of the NYS Adirondack Park, representing an important recreational, natural, and economic asset for the County. There are also smaller municipal parks located throughout the County that serve as important recreational resources to those areas. An exhaustive list of parks was not available for the County. However, parks specifically identified by the Committee are listed in Table 12 below.



Table 12. Parkland Assets

Asset/Resource	Risk Area(s)	Community Value
Adirondack Mountain State Park	High, Moderate	Low
Frankfort Municipal Park, Village of Frankfort	N/A*	Low
Brookwood Park, Village of Herkimer	High	Low

*Assets not in the extreme, high, and moderate risk assessment areas are noted as not applicable (N/A.)

Herkimer County has numerous rivers, creeks, and tributaries, including the Mohawk River, which has historically served as a primary east-west transportation route across the region. The other stream and creek systems and their tributaries north of the Mohawk River drain the snowpack from the Adirondack Mountains. The water bodies listed below (Table 13) represent the creeks and tributary systems that have been identified as high-risk watersheds by the NYS Department of Transportation and the NYS Department of Environmental Conservation.

Table 13. High Risk Watersheds

Asset/Resource	Risk Area(s)	Community Value
Mohawk River	Extreme	High
Bellinger Brook	Extreme	High
East Canada Creek	Extreme	High
Fulmer Creek	Extreme	High
Moyer Creek	Extreme	High
Maltanner Creek	Extreme	High
Nowadaga Creek	Extreme	High
West Canada Creek	Extreme	High

The Mohawk River Valley area is home to an abundance of historical sites that date back to early settlements from the pre-Revolutionary War era and includes the historic Erie Canal. According to the National Register of Historic Places, there are 42 registered historic buildings and six registered historic structures in Herkimer County.³¹ There are three historic buildings and two historic structures located in the flood zone (see Table 14).

Table 14. National Register Listed Historic Assets

Asset/Resource	Risk Area(s)	Community Value
US Post Office, Village of Ilion	High	Low
First United Methodist Church, Village of Ilion	High	Low
Big Moose Community Chapel, Town of Webb	High	Low
Salisbury Center Covered Bridge, Town of Salisbury	High	Low
Newport Stone Arch Bridge, Village of Newport	High	Low

A total of 39 religious institutions were identified within Herkimer County and seven were found to be located within the flood zone (see Table 15).



Table 15. Religious Institution Assets

Asset/Resource	Risk Area(s)	Community Value
Christian and Missionary Alliance Church, Village of Ilion	Extreme	Low
First Presbyterian Church, Village of Ilion	Extreme	Low
First Baptist Church, Village of Ilion	Extreme	Low
First Methodist Church, Village of Ilion	Extreme	Low
Church of the Annunciation, Village of Ilion	Extreme	Low
Saint Francis de Sales Roman Catholic Church, Village of Herkimer	Moderate	Low
Trinity Evangelical Lutheran Church, Village of Herkimer	Moderate	Low



Newport Stone Arch Bridge – A Historic Landmark in Herkimer



Health and Social Services: Life Safety

Health and Social Services: Life Safety includes fire protection, police services, hospitals, and emergency operations facilities. There is one emergency operations center located in Herkimer County - the Herkimer County Office of Emergency Management. However, this facility is not located within the flood zone. Within Herkimer County, there are twenty-four fire stations servicing the various Towns and Villages, five of which are located in the flood zone (see Table 16).

There is only one hospital located within the County - Little Falls Hospital, which is located outside of the flood zone. There are eleven ambulance companies located in Herkimer County; two are located within the flood zone (see Table 17).

Table 16. Fire Station Assets

Asset/Resource	Risk Area(s)	Community Value
Cedarville Fire Station - Columbia Litchfield Fire Department	High	High
Van Hornesville Fire Station - Stark Fire Department	High	High
Newport Fire Station 4 – Village of Newport	High	High
Dolgeville Fire Station – Village of Dolgeville	High	High
Ilion Fire Station – Village of Ilion	Moderate	High

Table 17. Ambulance Company Assets

Asset/Resource	Risk Area(s)	Community Value
Cedarville Ambulance, Inc., Town of Litchfield	High	High
Frankfort Fire Department Volunteer Ambulance, Village of Frankfort	Extreme	High

Health and Social Services: Administration and Education

Health and Social Services: Administration and Education assets serve a variety of public functions ranging from general-purpose shelters in public schools, to post offices and town halls. During a storm event, these facilities could potentially serve as critical disaster response and recovery centers, the identification of which is essential to future disaster management and preparedness. Seventeen post offices serve the County, with one in most of the Villages and one in the City of Little Falls (see Table 18). Only one post office, located in the Village of Ilion, is located in the high risk area.

Table 18. Post Office Assets

Asset/Resource	Risk Area(s)	Community Value
Ilion - 13357	Extreme	Medium



Herkimer County NY Rising Countywide Resiliency Plan

There are 26 identified schools and two institutions of higher education located in the NYRCR Community, five of which are located in risk areas (see Table 19). Twenty-one schools are identified by NYS Office of Emergency Management as emergency shelter facilities, two of which are located within the extreme-risk areas (see Table 20).

Table 19. School Assets

Asset/Resource	Risk Area(s)	Community Value
Harry M Fisher Elementary School, Village of Mohawk	Extreme	High
Remington Elementary School , Village of Ilion	High	High
Owen D. Young Central School , Town of Stark	Extreme	High
Saint Francis de Sales Regional Catholic School, Village of Herkimer	Moderate	High
Mohawk Valley Christian Academy	Extreme	High

Table 20. Shelter Assets

Asset/Resource	Risk Area(s)	Community Value
Owen D. Young Central School, Town of Stark	Extreme	High
Remington Elementary School, Village of Ilion	High	High
Ilion Municipal Building, Village of Ilion	Extreme	High

There are 32 New York State Office of People with Developmental Disabilities (OPWDD) facilities located throughout Herkimer County. Two of these facilities, a family care center and community residence are located within the flood zone (see Table 21).

Table 21. OPWDD Facility Assets

Asset/Resource	Risk Area(s)	Community Value
OPWDD Family Care Facility, Village of West Winfield	High	Medium
OPWDD Community Residence Facility, Village of Herkimer	Moderate	Medium

Twenty three daycare centers were identified in Herkimer County and two are located in the flood zone (see Table 22).

Table 22. Daycare Center Assets

Asset/Resource	Risk Area(s)	Community Value
Mohawk Valley Community Action, Village of Ilion	Extreme	Medium
A Little Mommy & Daddy Daycare, Village of Ilion	Extreme	Medium

The City of Little Falls and each Town and Village in Herkimer County have a municipal hall. Two municipal halls, in the Village of Newport and the Village of Ilion, are located within the flood zone (see Table 23).



Table 23. Town/Village Hall Assets

Asset/Resource	Risk Area(s)	Community Value
Village of Newport Municipal Hall	High	Medium
Village of Ilion Municipal Hall	High	Medium

Infrastructure: Transportation

Assets in this category include both transportation infrastructure, as well as transportation-related facilities. Major roadways extending through the NYRCR Community include the NYS Thruway (I-90), Interstate 20, and State Routes 5, 5S, 8, 20, 28, 29, 29A, 51, 80, 167, 168, 169, 170, 170A, 171, and 365. There is only one railroad passenger station located in Herkimer County, the Thendara Station, which is not located in the flood zone. Due to the large amount of creeks and streams, there is an equally large amount of bridges, many of which are located in the flood zone. There were 141 bridges identified as being at risk due to their location in the flood zone (see Table 24).

Table 24. Bridge Assets

Asset/Resource	Risk Area(s)	Community Value
City of Little Falls		
Bridge - William Street / Mohawk River / City	Extreme	Medium
Bridge - Hansen Avenue / Mohawk River / City	Extreme	Medium
Bridge - Route 167 / W. Mill St / NYSDOT	High	High
Bridge - Route 169 / River Road / NYSDOT	Extreme	High
Bridge - South Ann Street / Mohawk River / City	Extreme	Medium
Town of Columbia		
Bridge - Casler Road / Unadilla Lake Out / Town	High	Medium
Bridge - County Road 85 / Unadilla River / County	High	Medium
Town of Danube		
Bridge - 90I X Eastbound / Depot Rd / NYS Thruway Authority	High	Medium
Bridge - 90I X Westbound / Depot Rd / NYS Thruway Authority	High	Medium
Bridge - County Road 102 / Nowadaga Creek / County	High	Medium
Bridge - County Road 102 / Nowadaga Creek / County	High	Medium
Bridge - County Road 102 / Nowadaga Creek / County	High	Medium
Bridge - Newville Road / Nowadaga Creek / County	High	Medium
Bridge - Route 5S / Nowadaga Creek / NYSDOT	High	High
Bridge - Service Road / Erie Barge Canal / NYSDOT	High	Medium
Bridge - Tibbitts Road / Nowadaga Creek / Town	High	Medium
Town of Frankfort		
Bridge - Brice Road / Moyer Creek / Town	Extreme	Medium
Bridge - County Road 13 / Ferguson Creek / County	High	Medium
Bridge - County Road 13 / Ferguson Creek / County	High	Medium
Bridge - County Road 37 / Ferguson Creek / County	High	Medium



Herkimer County NY Rising Countywide Resiliency Plan

Asset/Resource	Risk Area(s)	Community Value
Bridge - County Road 37 / Mohawk River / County	Extreme	Medium
Bridge - Route 5S / Ferguson Creek / NYSDOT	High	High
Bridge - Route 5S / Moyer Creek / NYSDOT	High	High
Bridge - Route 171 / Moyer Creek / NYSDOT	High	High
Bridge - Route 171 / Moyer Creek / NYSDOT	High	High
Bridge - Route 171 / Moyer Creek / NYSDOT	High	High
Bridge - Route 171 / Moyer Creek / NYSDOT	High	High
Bridge - Route 171 / Moyer Creek / NYSDOT	High	High
Bridge - Route 171 / Moyer Creek / NYSDOT	High	High
Bridge - Route 171 / Moyer Creek / NYSDOT	High	High
Bridge - Route 5S / Moyer Creek / NYSDOT	High	High
Bridge -Old State Rte 5S / Ferguson Creek / Town	High	Medium
Town of German Flatts		
Bridge - 90I X Wb Mp219.2 / 5S / NYS Thruway Authority	High	Medium
Bridge - County Road 68 / Fulmer Creek / County	High	Medium
Bridge - Route 168 / Fulmer Creek / NYSDOT	Extreme	High
Bridge - Route 168 / Fulmer Creek / NYSDOT	Extreme	High
Bridge - Route 168 / Flatt Creek / NYSDOT	Moderate	High
Bridge - Route 168 / Fulmer Creek / NYSDOT	High	High
Bridge - Route 168 / Fulmer Creek / NYSDOT	Extreme	High
Bridge - Route 168 / Fulmer Creek / NYSDOT	High	High
Bridge - Route 168 / Fulmer Creek / NYSDOT	High	High
Bridge - Spinnerville Road / Steele Creek / County	Extreme	Medium
Bridge -Route 168 / Fulmer Creek / NYSDOT	Extreme	High
Town of Herkimer		
Bridge - Route 28 / Hydraulic Canal / NYSDOT	High	High
Bridge - Route 5 / Csx Transportation / NYSDOT	High	High
Bridge - Shells Bush Road / West Canada Creek / Town	High	Medium
Bridge - West End Road / West Canada Creek / County	High	Medium
Town of Litchfield		
Bridge - Route 51 / Steele Creek / NYSDOT	High	High
Bridge - Route 51 / Steele Creek / NYSDOT	High	High
Bridge - Route 51 / Steele Creek / NYSDOT	High	High
Bridge - Route 51 / Steele Creek / NYSDOT	High	High
Town of Manheim		
Bridge - County Road 246 / Crum Creek / County	High	Medium
Bridge - Route 5 / Crum Creek / NYSDOT	High	High
Town of Ohio		
Bridge - County Road 73 / Black Creek / County	High	Medium
Bridge - Farr Road / Black River / Town	High	Medium
Bridge - Gray Wilmurt Road / N Br Black Creek / County	High	Medium
Bridge - Gray Wilmurt Road / West Canada Creek / County	High	Medium



Herkimer County NY Rising Countywide Resiliency Plan

Asset/Resource	Risk Area(s)	Community Value
Bridge - Harvey Bridge Rd / West Canada Creek / Town	High	Medium
Bridge - Reinhardt Road / Black Cr / Town	High	Medium
Bridge - Route 8 / West Canada Creek / NYSDOT	High	High
Bridge - Route 8 / Black Creek / NYSDOT	High	High
Bridge - Route 8 / West Canada Creek / NYSDOT	High	High
Bridge - Gray Wilmurt Rd / Fourmile Brook / County	High	Medium
Town of Russia		
Bridge - County Road 113 / Prospect Pwr Chnl / County	High	Medium
Bridge - Stormy Hill Road / Black Creek / County	High	Medium
Town of Salisbury		
Bridge - 29 29 23011102 / Spruce Creek / NYSDOT	High	High
Bridge - Bingham Mill Road / Trammel Creek / Town	High	Medium
Bridge - County Road 164 / Spruce Creek / County	High	Medium
Bridge - County Road 221 / Spruce Creek / County	High	Medium
Bridge - Emmonsburg Road / East Canada Creek / County	High	Medium
Bridge - Fairview Road / Spruce Creek / Town	High	Medium
Bridge - Fairview Road / Spruce Creek / Town	High	Medium
Bridge - Military Road / Beaver Creek / County	High	Medium
Bridge - Red Mill Road / Spruce Creek / Town	High	Medium
Bridge - Route 29 / Spruce Creek / NYSDOT	High	High
Town of Schuyler		
Bridge - 90I X Md225.43 / Bridenbaker Creek / NYS Thruway Authority	High	Medium
Bridge - 90I X / Budlong Creek / NYS Thruway Authority	High	Medium
Bridge - 90I X / Burch Creek / NYS Thruway Authority	High	Medium
Bridge - 90I X / Knapp Creek / NYS Thruway Authority	High	Medium
Bridge - 90I X(Eb) / Sterling Creek / NYS Thruway Authority	High	Medium
Bridge - 90I X(Wb) / Sterling Creek / NYS Thruway Authority	High	Medium
Bridge - Cosby Manor Road / Wood Creek / County	High	Medium
Bridge - Csx Transportation / N Y S Barge Canal / Retired (Use To Be Conrail - Converted To 60)	Extreme	Medium
Bridge - Route 5 / Bridenbecker Crk / NYSDOT	High	High
Bridge - Route 5 / Budlong Creek / NYSDOT	High	High
Bridge - Route 5/ Sterling Creek / NYSDOT	High	High
Bridge - Route 5 / Knapp Brook / NYSDOT	High	High
Town of Stark		
Bridge - Moyer Road / Otsquago Creek / Town	High	Medium
Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	High
Bridge - Route 168 / Otsquago Crk / NYSDOT	Extreme	High
Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	High
Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	High
Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	High



Herkimer County NY Rising Countywide Resiliency Plan

Asset/Resource	Risk Area(s)	Community Value
Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	High
Town of Webb		
Bridge - Adirondack Scenic / Beaver River / NYSDOT	High	Medium
Bridge - Adirondack Scenic / Midd Br Moose Rvr / NYSDOT	High	Medium
Bridge - Adirondack Scenic / Midd Br Moose Rvr / NYSDOT	High	Medium
Bridge - Adirondack Scenic / Moose River / NYSDOT	High	Medium
Bridge - Adirondack Scenic / Twitchell Creek / NYSDOT	High	Medium
Bridge - Big Moose Road / No Br Moose River / County	High	Medium
Bridge - Bullock Road / Beaver River / Town	High	Medium
Bridge - Covey Road / Outlet South Bay / Town	High	Medium
Bridge - Greenbridge Road / Mid Br Moose Rvr / Town	High	Medium
Bridge - Rondaxe Road / No Br Moose River / Town	High	Medium
Bridge - Route 28 / Midd Br Moose Rvr / NYSDOT	High	High
Bridge - Route 28 / Moose River / NYSDOT	High	High
Bridge - Route 28 / Moose River / NYSDOT	High	High
Bridge - Snowmobile Trail / No Br Moose River / Town	High	Medium
Bridge - South Shore Road / Twin Pond Outlet / County	High	Medium
Town of Winfield		
Bridge - County Road 141 / No. Winfield Creek / County	High	Medium
Bridge - Doyle Road / North Winfield Cr / Town	High	Medium
Bridge - Jones Road / Unadilla River / Town	High	Medium
Bridge - N Winfield Road / N Winfield Creek / County	High	Medium
Bridge - N Winfield Road / N Winfield Creek / County	High	Medium
Bridge - Route 20 / Unadilla River / NYSDOT	Extreme	High
Bridge - Sale Road / Br Unadilla River / Town	High	Medium
Village of Cold Brook		
Bridge - Route 8 / Cold Brook / NYSDOT	High	High
Bridge - Route 8 / Cold Brook / NYSDOT	High	High
Bridge - Route 8 / Cold Brook / NYSDOT	High	High
Village of Dolgeville		
Bridge - Route 29 / East Canada Creek / NYSDOT	High	High
Village of Frankfort		
Bridge - Hilltop Road / Moyer Creek / Village	Extreme	Medium
Bridge - West Main Street / Moyer Creek / Village	Extreme	Medium
Village of Herkimer		
Bridge - Maple Grove Ave / Bellinger Brook / Village	Extreme	Medium
Bridge - 90I X / Exit 30 Ramp / NYS Thruway Authority	High	Medium
Bridge - 90I Xeb-Mp 219.2 / 5S / NYS Thruway Authority	High	Medium
Bridge - 922B/ Erie Barge Canal / NYSDOT	Extreme	High
Bridge - Route 28 / State Barge Canal / NYSDOT	High	High
Bridge - Route 5 / West Canada Creek / NYSDOT	High	High
Bridge - West German St / Bellinger Brook / Village	Extreme	Medium



Herkimer County NY Rising Countywide Resiliency Plan

Asset/Resource	Risk Area(s)	Community Value
Village of Ilion		
Bridge - Main Street / Steele Creek / Village	Extreme	Medium
Bridge - Richfield Street / Steele Creek / Town	Extreme	Medium
Bridge - Second Street / Steele Creek / Town	Extreme	Medium
Bridge - 5S / Steele Creek / NYSDOT	Extreme	High
Bridge - Route 51 / Steele Creek / NYSDOT	Extreme	High
Bridge - Third Street / Steele Creek / Town	Extreme	Medium
Bridge -Route 51 / 5 / NYSDOT	Extreme	High
Village of Middleville		
Bridge - Route 28 / West Canada Creek / NYSDOT	Extreme	High
Village of Mohawk		
Bridge - 5S / Fulmer Creek / NYSDOT	Extreme	High
Bridge - West Main Street / Fulmer Creek / Town	Extreme	Medium
Bridge - Route 28 / Fulmer Creek / NYSDOT	Extreme	High
Village of Newport		
Bridge - Old State Road / West Canada Creek / County	Extreme	Medium
Village of Poland		
Bridge - Bleeker St Exten / Ferguson Creek / County	High	Medium
Bridge - Old State Road / West Canada Creek / County	High	Medium
Village of West Winfield		
Bridge - Route 51 / Unadilla River / NYSDOT	High	High

Due to the presence of the Erie Canal, there were ten dams identified in Herkimer County and seven were located in the flood zone as noted in Table 25.

Table 25. Dams and Navigable Waterway Facility Assets

Asset/Resource	Risk Area(s)	Community Value
Lock E-16 Dam at Rocky Rift	High	Low
Lock E-18 Dam Herkimer	High	Low
State Diverting Dams (North & South)	High	Low
Lock E-17	High	Low
Middle Falls Dam	High	Low
Gilbert Knitting Mills Dam	High	Low
Frankfort Recreational Dams 1 & 2 (Lock 19)	High	Low



Infrastructure: Utilities

Infrastructure: Utilities includes 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 portion of a network that functions as a system is located in a risk area, the entire system is vulnerable. 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 systems.

There were a large number of utility assets identified throughout the County, including private and public drinking water treatment plants (79), private and public drinking water wells (146), wastewater treatment facilities (12), telecommunications infrastructure (25), electrical substations (16) and hydroelectric plant facilities (10). A significant amount of the utility assets were found to be in the flood zone, including drinking water wells in eight locations and three drinking water treatment plants (see Table 26). With the loss of potable water in the Villages of Mohawk and Herkimer, the summer 2013 flooding demonstrated that the drinking water supply in Herkimer County is at high risk of failure during extreme storm events.

Table 26. Drinking Water Assets

Asset/Resource	Risk Area(s)	Community Value
NYS-Stillwater Boat Launch - Drinking Water Well, Town of Webb	High	High
Norridgewock III - Drinking Water Well, Town of Webb	High	High
Mohawk Valley Water Authority - Drinking Water Treatment Plant, Town of Russia	High	High
Camp Northwood - 3 Drinking Water Wells, Town of Russia	High	High
Rivers Edge Restaurant - Drinking Water Well, Town of Newport	High	High
Mohawk Valley Country Club Restaurant - Drinking Water Well, Town of Little Falls	Extreme	High
VFW Post 2338- George R. Pritchard Drinking Water Wells	High	High
Mohawk (V) Water Works Drinking Water Treatment Plant and Wells (3), Village of Mohawk	High	High
City of Little Falls Water Treatment Plant, City of Little Falls	Extreme	High
Poland Village Drinking Water Wells (2), Town of Russia	Extreme	High

There are three identified wastewater treatment facilities located in the flood zone (see Table 27).

Table 27. Wastewater Treatment Assets

Asset/Resource	Risk Area(s)	Community Value
Dolgeville Wastewater Treatment Plant	Moderate	High
Herkimer County SD Wastewater Treatment Facility	High	High
City of Little Falls Wastewater Treatment Plant	Moderate	High



There are four electrical substations and six hydroelectric plants located in the flood zone in Herkimer County (see Table 28). The loss of power in the Village of Mohawk for several days due to the flooding of their electrical substation revealed the vulnerability of these critical assets.

Table 28. Power Supply Assets

Asset/Resource	Risk Area(s)	Community Value
Electrical Substation - Village of Mohawk	High	High
Electrical Substation - Village Of Herkimer	Moderate	High
Electrical Substation - Village of Ilion	High	High
Electrical Substation - Village Of Frankfort	Moderate	High
Hydroelectric Plant 1 - Town of Webb	High	High
Hydroelectric Plant 2 - Town Of Webb	High	High
Hydroelectric Plant - Town of Russia	High	High
Hydroelectric Plant - Village of Newport	High	High
Hydroelectric Plant 3 - Town of Manheim	High	High
Hydroelectric Plant - Town of Little Falls	High	High



Mohawk Village Electrical Substation



Housing

A significant number of residential parcels are at risk of future flooding and/or storm surge events within the County. Residential parcels include those zoned for single family residences, multi-family residences, and mobile homes (see Table 29).

Table 29. Housing Assets

Asset/Resource	Risk Area(s) with # of parcels	Community Value
City of Little Falls	Extreme (57), High (3)	High
Town of Columbia	High (35)	High
Town of Danube	High (33), Moderate (1)	High
Town of Fairfield	High (10)	High
Town of Frankfort	Extreme (22), High (82), Moderate (1)	High
Town of German Flatts	Extreme (64), High (69), Moderate (2)	High
Town of Herkimer	High (37)	High
Town of Litchfield	High (47)	High
Town of Little Falls	Moderate (1)	High
Town of Manheim	High (82), Moderate (3)	High
Town of Newport	Extreme (7), High (50)	High
Town of Norway	High (4)	High
Town of Ohio	High (193)	High
Town of Russia	High (100)	High
Town of Salisbury	High (129)	High
Town of Schuylar	Extreme (6), High (55)	High
Town of Stark	Extreme (40), High (17)	High
Town of Webb	High (1,610)	High
Town of Winfield	Extreme (1), High (36)	High
Village of Cold Brook	High (34)	High
Village of Dolgeville	High (155), Moderate (2)	High
Village of Frankfort	Extreme (25), High (38), Moderate (32)	High
Village of Herkimer	Extreme (94), High (9), Moderate (388)	High
Village of Ilion	Extreme (574), High (83), Moderate (128)	High
Village of Middleville	Extreme (72), High (1)	High
Village of Mohawk	Extreme (325), High (3), Moderate (3)	High
Village of Newport	Extreme (7), High (28)	High
Village of Poland	High (3)	High
Village of West Winfield	Extreme (1), High (19)	High



There were 29 senior housing facilities (including adult homes, senior citizen housing, and nursing homes), identified by the Herkimer County Office of Aging. Five of these facilities are located within the flood zone. Despite not being located in the flood zone, the Herkimer NYRCR Committee identified additional senior housing facilities that flooded in the summer 2013 storms, including the Mid-Town Apartments in the Village of Herkimer. This indicates that these facilities, due to the vulnerable populations they serve, deserve special mention in the risk assessment of critical facilities. (See Table 30)

Table 30. Housing for Vulnerable Population Assets

Asset/Resource	Risk Area(s)	Community Value
Campus Apts, Village of Frankfort	Extreme	Medium
John Guy Prindle Apts, Village of Ilion	High	Medium
Litchfield Manor, Village of Frankfort	Extreme	Medium
London Towers Apts, Village of Ilion	Extreme	Medium
Streamside Manor, Village of Frankfort	Extreme	Medium
Mid-Town Apts, Village of Herkimer	N/A*	Medium

*Assets not in the extreme, high, and moderate risk assessment areas are noted as not applicable (N/A.)



Economic Assets

Economic Assets include downtown centers, business clusters, major employers and employment hubs, industrial and manufacturing centers, tourism destinations, and marina/water-based business areas. There were two major employers in Herkimer County that were identified as being located within the flood zone, Lowe’s Home Center and Burrow’s Paper. Additionally, there are commercially-zoned properties identified in each of the County’s villages located within flood risk areas (see Table 31).

Table 31. Economic Assets

Asset/Resource	Risk Area(s) with # of parcels	Community Value
Lowe's Home Center (major employer), Town of Herkimer	High	High
Burrow's Paper (major employer), City of Little Falls	Moderate	High
Commercial Parcels - City of Little Falls	Extreme (12), High (2), Moderate (1)	Medium
Commercial Parcels - Village of Frankfort	Extreme (9), High (9), Moderate (15)	Medium
Commercial Parcels - Village of Herkimer	Extreme (7), High (4), Moderate (24)	Medium
Commercial Parcels - Village of Ilion	Extreme (82), High (5), Moderate (19)	Medium
Commercial Parcels- Village of Dolgeville	High (28)	Medium
Commercial Parcels- Village of Middleville	Extreme (11), High (1)	Medium
Commercial Parcels – Village of Mohawk	Extreme (20), High (3), Moderate (8)	Medium
Commercial Parcels - Village of Newport	Extreme (17), High (3)	Medium
Commercial Parcels - Village of West Winfield	High (1)	Medium



City of Little Falls Downtown



C. ASSESSMENT OF RISK TO ASSETS AND SYSTEMS

Risk is the chance that an asset will be damaged or destroyed. Assessing the risk to Community assets and systems helped the Committee identify projects and understand measures to help restore and protect its assets at greatest flood risk while also ensuring appropriate long-term economic growth.

Risk to an asset, for the purpose of this Countywide Resiliency Plan, is the chance that the asset will be damaged or destroyed in flood events. A standardized risk assessment tool was used to assist the Committee in assessing and quantifying the risk to their assets, and later, to test whether various projects would be effective at reducing risk.

All assets in the extreme, high, and moderate risk areas were evaluated using the risk assessment tool. In addition, assets in close proximity with similar functions and vulnerable characteristics were grouped as a single asset to the maximum extent possible because these assets would likely experience the same effects from storm events. For example, residential neighborhoods with similar construction were combined by risk area.

For each asset, or group of assets, that was advanced through the risk assessment tool, a risk score was produced based on three contributing factors to an asset's overall risk: hazard, exposure, and vulnerability.³²

Hazard x Exposure x Vulnerability = Risk

- **Hazard:** The likelihood and magnitude of future storm events. Examples of the most common hazard risks include flooding, flooding in a 100-year floodplain, or severe precipitation events. Typically, an asset located in an extreme risk area experiences hazards with greater frequency and intensity than assets in a high or moderate risk areas. The risk assessment tool uses the 100-year flood event, which has a 1% chance of occurring in any given year, as the baseline event.
- **Exposure:** The moderating effect of topographic and protective features. If assets are more exposed (e.g., situated on low-lying floodplains, directly exposed to a probable stream bank overflow or backups, or otherwise unprotected), they are more likely to suffer storm effects than similar assets located at a higher elevation. Similarly, landscape features and vegetation are more important for an asset proximate to a flood source than an asset further inland.
- **Vulnerability:** The level of impairment or consequences that assets may experience from a storm event, expressed by the capacity of an asset to return to service after a storm. The ability of an asset to resist damage from a storm is a measure of vulnerability. If an asset recovers quickly with limited interruption in service, it has low vulnerability. An asset with extended service loss or permanently reduced capacity would be considered significantly vulnerable.

The final risk scores provide the Community with a general sense of which assets are at greatest risk and where projects and management measures are needed to adapt to future storms and environmental



changes. The list of assets advanced through the risk assessment tool, and their corresponding risk scores, are provided in Section VI: Additional Materials.

Risk Assessment Results

Figure 5, Figures 5 - a to 5 - p, and Tables 32 – 48 illustrate NYRCR Herkimer County's assessment of risk to assets and systems. The identification number on the tables corresponds to the ID number shown on the map. The tables are also color coded by risk level and an overview follows. Assets were placed into the following risk categories, based upon their risk scores.

- **Severe Risk** assets are shown in red in the table and map. Assets at Severe Risk have both very high exposure and very high vulnerability to storm effects, which could represent that the asset is in a dangerous situation or location.
- **High Risk** assets are shown in orange. Assets at High Risk have either very high exposure or very high vulnerability to storm effects, which could lead to significant negative outcomes from a storm event.
- **Moderate Risk** assets are shown in yellow. Storm events pose moderate to serious consequences on these assets, but adaptation may be of lower priority due to one factor, either the exposure or vulnerability, remaining relatively low.

Residual Risk assets are shown in green. Both the exposure and vulnerability of these assets are relatively low. This situation suggests floods would pose a minor threat or infrequent consequences.



Figure 5. Assets at Risk - Countywide

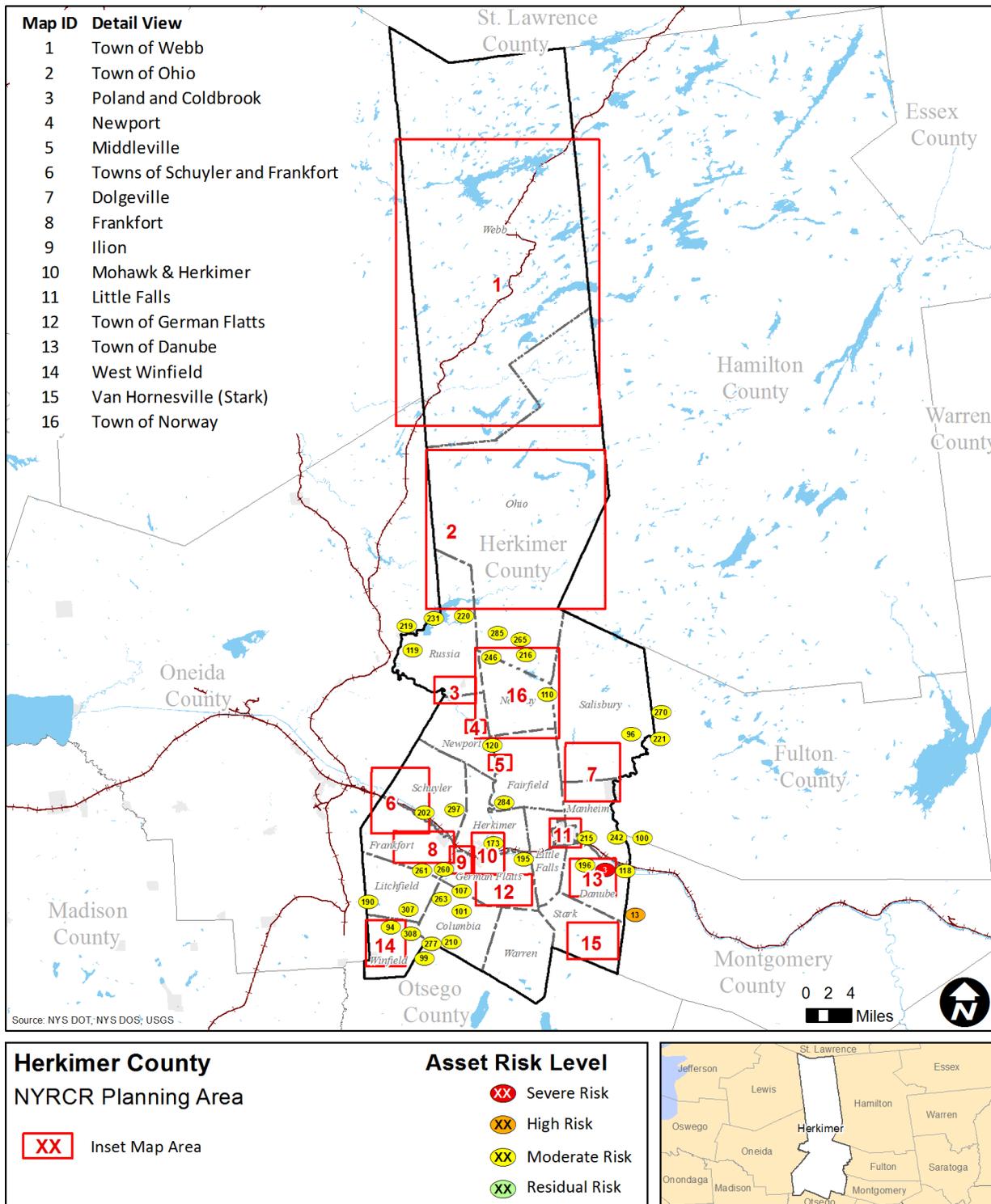




Table 32. Assets at Risk that are Located Outside of Detail View Maps

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
3	Lock E-16 Dam at Rocky Rift	Extreme	Infrastructure Systems	Low	Town of Manheim	Severe
13	Bridge - Moyer Road / Otsquago Creek / Town	High	Infrastructure Systems	Medium	Town of Stark	High
88	Commercial Assets - Town of Newport	High	Economic	Medium	Town of Newport	Moderate
89	Commercial Assets - Town of Danube	High	Economic	Medium	Town of Danube	Moderate
96	Commercial Assets - Town of Salisbury	High	Economic	Medium	Town of Salisbury	Moderate
100	Hydroelectric Plant 3 - Town of Manheim	High	Infrastructure Systems	High	Town of Manheim	Moderate
101	Residential Parcels - Town of Columbia	High	Housing	High	Town of Columbia	Moderate
102	Residential Parcels - Town of Danube	High	Housing	High	Town of Danube	Moderate
108	Residential Parcels - Town of Manheim	High	Housing	High	Town of Manheim	Moderate
109	Residential Parcels - Town of Newport	High	Housing	High	Town of Newport	Moderate
110	Residential Parcels - Town of Norway	High	Housing	High	Town of Norway	Moderate
112	Residential Parcels - Town of Russia	High	Housing	High	Town of Russia	Moderate
118	Commercial Assets - Town of Manheim	Moderate	Economic	Medium	Town of Manheim	Moderate
119	Hydroelectric Plant - Town of Russia	High	Infrastructure Systems	High	Town of Russia	Moderate
120	Rivers Edge Restaurant - Drinking Water Well	High	Infrastructure Systems	High	Town of Newport	Moderate
192	Residential Parcels - Town of Danube	Moderate	Housing	High	Town of Danube	Moderate
196	Residential Parcels - Town of Manheim	Moderate	Housing	High	Town of Manheim	Moderate
203	Bridge - Route 5S / Nowadaga Creek / NYSDOT	High	Infrastructure Systems	High	Town of Danube	Moderate
210	Bridge - Casler Road / Unadilla Lake Out / Town	High	Infrastructure Systems	Medium	Town of Columbia	Moderate
215	Bridge - County Road 246 / Crum Creek / County	High	Infrastructure Systems	Medium	Town of Manheim	Moderate
219	Bridge - County Road 113 / Prospect Pwr Chnl / County	High	Infrastructure Systems	Medium	Town of Russia	Moderate
220	Bridge - Stormy Hill Road / Black Creek / County	High	Infrastructure Systems	Medium	Town of Russia	Moderate

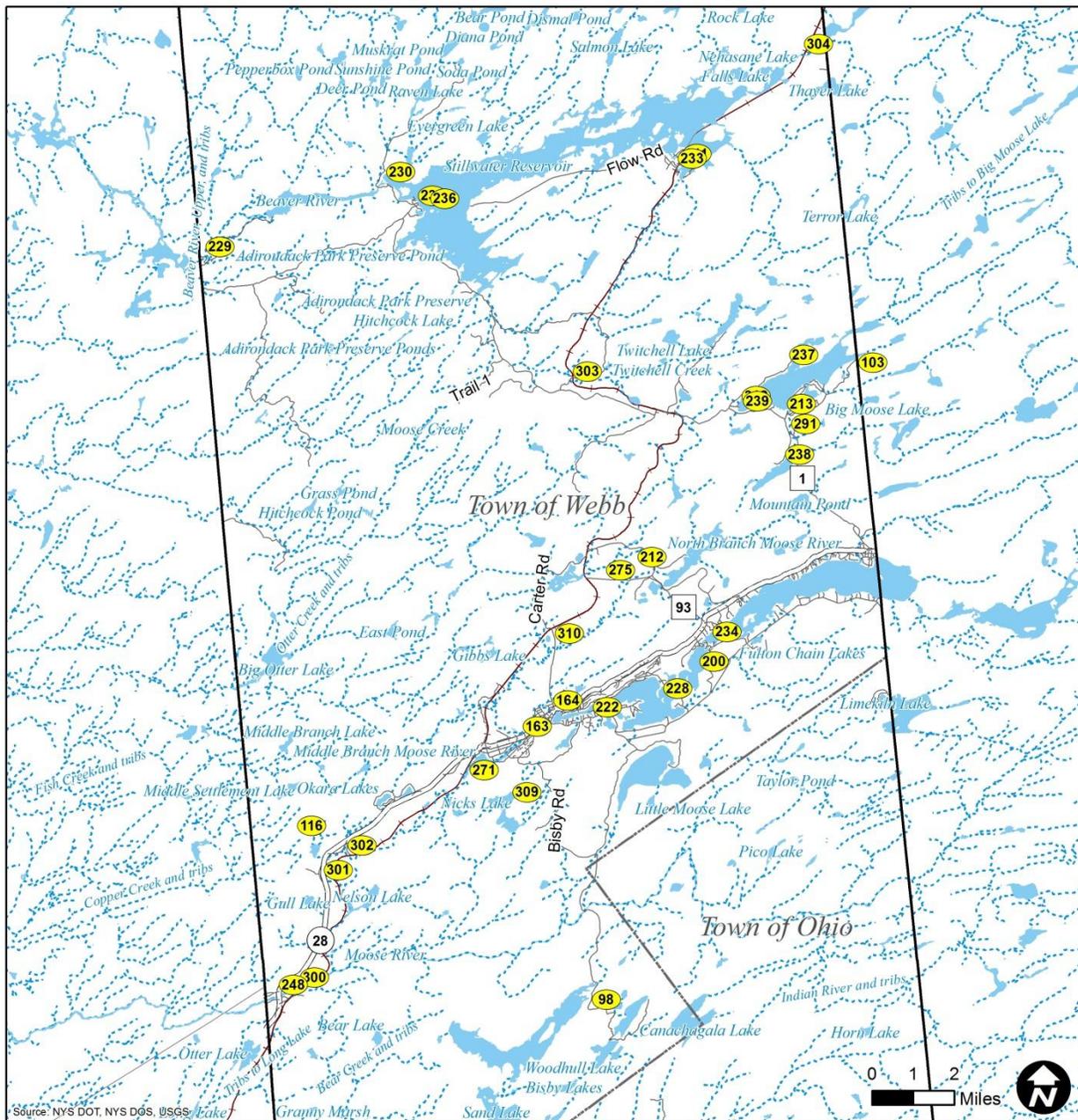


Herkimer County NY Rising Countywide Resiliency Plan

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
221	Bridge - Emmonsburg Road / East Canada Creek / County	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
223	Bridge - Service Road / Erie Barge Canal / NYSDOT	High	Infrastructure Systems	Medium	Town of Danube	Moderate
231	Mohawk Valley Water Authority - Drinking Water Treatment Plant	High	Infrastructure Systems	High	Town of Russia	Moderate
242	Bridge - Route 5 / Crum Creek / NYSDOT	High	Infrastructure Systems	High	Town of Manheim	Moderate
264	Bridge - Tibbitts Road / Nowadaga Creek / Town	High	Infrastructure Systems	Medium	Town of Danube	Moderate
270	Bridge - Bingham Mill Road / Trammel Creek / Town	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
277	Bridge - County Road 85 / Unadilla River / County	High	Infrastructure Systems	Medium	Town of Columbia	Moderate
278	Bridge - Newville Road / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate
279	Bridge - County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate
280	Bridge - County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate
295	Bridge - 90I X Westbound / Depot Rd / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Danube	Moderate
296	Bridge - 90I X Eastbound / Depot Rd / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Danube	Moderate
305	Bridge - County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate
306	Camp Northwood - 3 Drinking Water Wells	High	Infrastructure Systems	High	Town of Russia	Moderate
313	City of Little Falls Waste Water Treatment Plant	Moderate	Infrastructure Systems	High	Town of Manheim	Moderate



Figure 5 - a. Assets at Risk in the Town of Webb



Town of Webb
Detail View of
NYRCR Planning Area
Herkimer County

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

1





Table 33. Assets at Risk in the Town of Webb

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
98	Commercial Assets - Town of Webb	High	Economic	Medium	Town of Webb	Moderate
116	Residential Parcels - Town of Webb	High	Housing	High	Town of Webb	Moderate
163	Bridge - Route 28 / Midd Br Moose Rvr / NYSDOT	High	Infrastructure Systems	High	Town of Webb	Moderate
164	Bridge - Route 28 / Moose River / NYSDOT	High	Infrastructure Systems	High	Town of Webb	Moderate
200	Armstrong Trailer Park Drinking Water Treatment Plant and Well	High	Infrastructure Systems	High	Town of Webb	Moderate
211	Bridge - Bullock Road / Beaver River / Town	High	Infrastructure Systems	Medium	Town of Webb	Moderate
212	Bridge - Rondaxe Road / No Br Moose River / Town	High	Infrastructure Systems	Medium	Town of Webb	Moderate
213	Bridge - Covey Road / Outlet South Bay / Town	High	Infrastructure Systems	Medium	Town of Webb	Moderate
222	Bridge - South Shore Road / Twin Pond Outlet / County	High	Infrastructure Systems	Medium	Town of Webb	Moderate
228	Hollywood Hills Condo - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
229	Hydroelectric Plant 1 - Town of Webb	High	Infrastructure Systems	High	Town of Webb	Moderate
230	Hydroelectric Plant 2 - Town Of Webb	High	Infrastructure Systems	High	Town of Webb	Moderate
233	Norridgewock III - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
234	NYS-Fourth Lake Picnic Area - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
235	NYS-Stillwater Boat Launch - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
236	Rap Shaw Club - Drinking Water Treatment Plant	High	Infrastructure Systems	High	Town of Webb	Moderate
237	The Waldheim - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
238	YMCA Camp Gorham - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
239	Big Moose Inn - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
248	Bridge - Route 28 / Moose River / NYSDOT	High	Infrastructure Systems	High	Town of Webb	Moderate
271	Bridge - Greenbridge Road / Mid Br Moose Rvr / Town	High	Infrastructure Systems	Medium	Town of Webb	Moderate
275	Bridge - Snowmobile Trail / No Br Moose River / Town	High	Infrastructure Systems	Medium	Town of Webb	Moderate

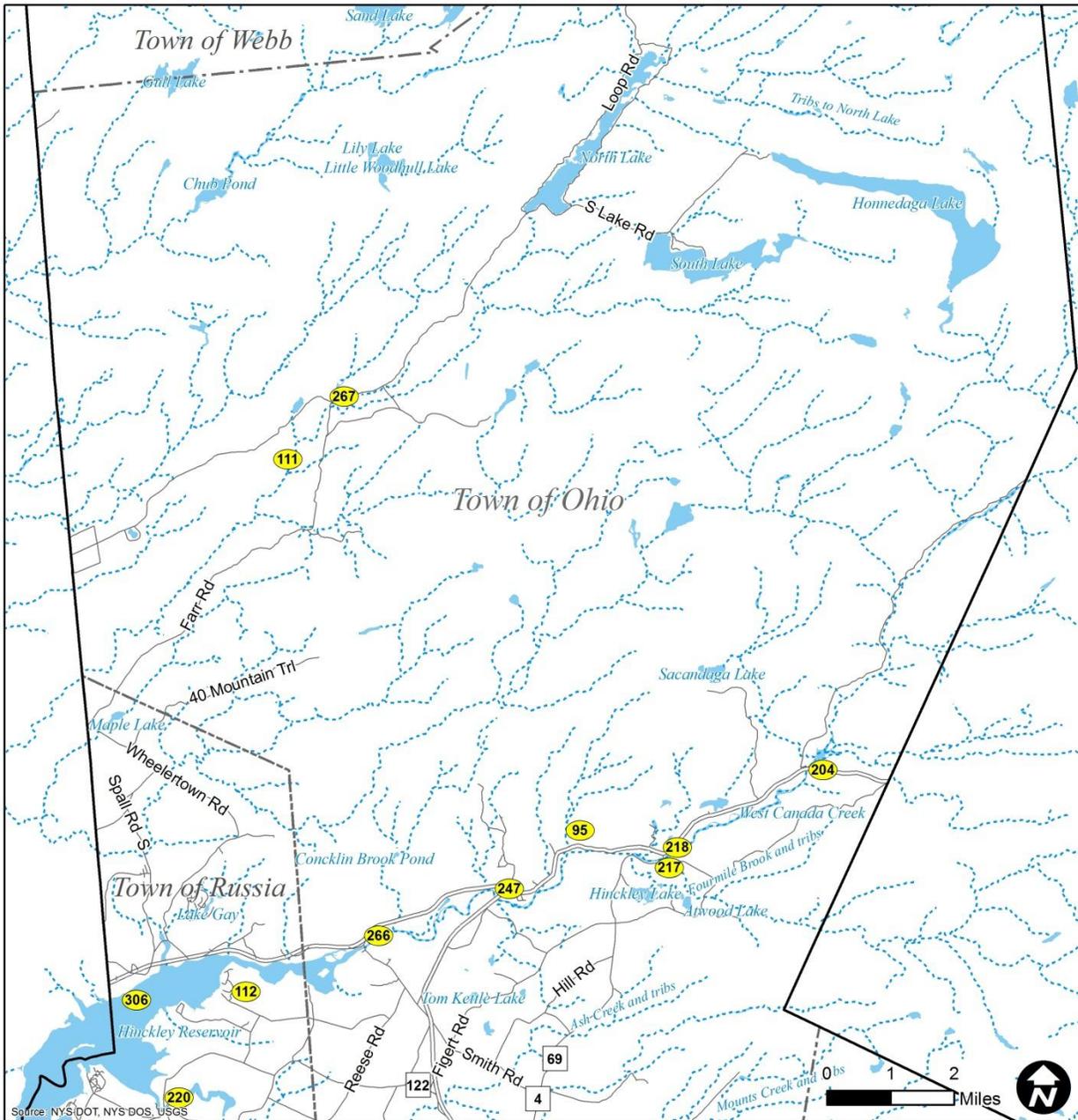


Herkimer County NY Rising Countywide Resiliency Plan

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
291	Bridge - Big Moose Road / No Br Moose River / County	High	Infrastructure Systems	Medium	Town of Webb	Moderate
300	Bridge - Adirondack Scenic / Moose River / NYSDOT	High	Infrastructure Systems	Medium	Town of Webb	Moderate
301	Bridge - Adirondack Scenic / Midd Br Moose Rvr / NYSDOT	High	Infrastructure Systems	Medium	Town of Webb	Moderate
302	Bridge - Adirondack Scenic / Midd Br Moose Rvr / NYSDOT	High	Infrastructure Systems	Medium	Town of Webb	Moderate
303	Bridge - Adirondack Scenic / Twitchell Creek / NYSDOT	High	Infrastructure Systems	Medium	Town of Webb	Moderate
304	Bridge - Adirondack Scenic / Beaver River / NYSDOT	High	Infrastructure Systems	Medium	Town of Webb	Moderate
309	NYS-Nicks Lake State Park - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
310	Old Forge (V) Water District - Drinking Water Well	High	Infrastructure Systems	High	Town of Webb	Moderate
312	Big Moose Community Chapel	High	Natural and Cultural Resources	Low	Town of Webb	Moderate



Figure 5 - b. Assets at Risk in the Town of Ohio



<p>Town of Ohio Detail View of NYRCR Planning Area Herkimer County</p>	<p>Asset Risk Level</p> <ul style="list-style-type: none"> XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk 	<p>2</p>	
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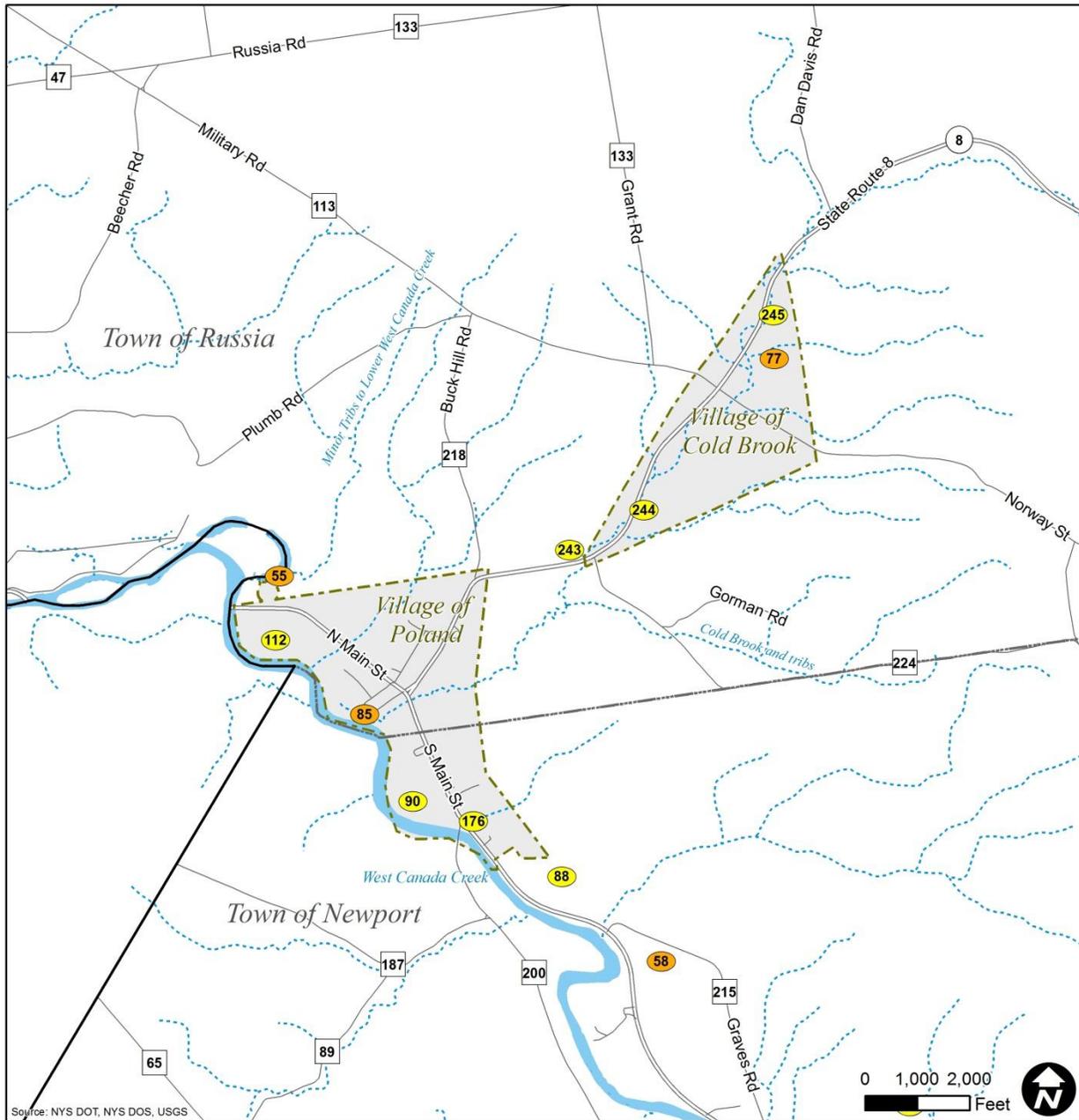


Table 34. Assets at Risk in the Town of Ohio

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
95	Commercial Assets - Town of Ohio	High	Economic	Medium	Town of Ohio	Moderate
111	Residential Parcels - Town of Ohio	High	Housing	High	Town of Ohio	Moderate
204	Bridge - Route 8 / West Canada Creek / NYSDOT	High	Infrastructure Systems	High	Town of Ohio	Moderate
216	Bridge - Gray Wilmurt Road / N Br Black Creek / County	High	Infrastructure Systems	Medium	Town of Ohio	Moderate
217	Bridge - Gray Wilmurt Rd / Fourmile Brook / County	High	Infrastructure Systems	Medium	Town of Ohio	Moderate
218	Bridge - Gray Wilmurt Road / West Canada Creek / County	High	Infrastructure Systems	Medium	Town of Ohio	Moderate
246	Bridge - Route 8 / Black Creek / NYSDOT	High	Infrastructure Systems	High	Town of Ohio	Moderate
247	Bridge - Route 8 / West Canada Creek / NYSDOT	High	Infrastructure Systems	High	Town of Ohio	Moderate
265	Bridge - Reinhardt Road / Black Cr / Town	High	Infrastructure Systems	Medium	Town of Ohio	Moderate
266	Bridge - Harvey Bridge Rd / West Canada Creek / Town	High	Infrastructure Systems	Medium	Town of Ohio	Moderate
267	Bridge - Farr Road / Black River / Town	High	Infrastructure Systems	Medium	Town of Ohio	Moderate
285	Bridge - County Road 73 / Black Creek / County	High	Infrastructure Systems	Medium	Town of Ohio	Moderate



Figure 5 - c. Assets at Risk in the Villages of Cold Brook and Poland



Source: NYS DOT, NYS DOS, USGS

Poland and Coldbrook
Detail View of
NYRCR Planning Area
Herkimer County

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

3



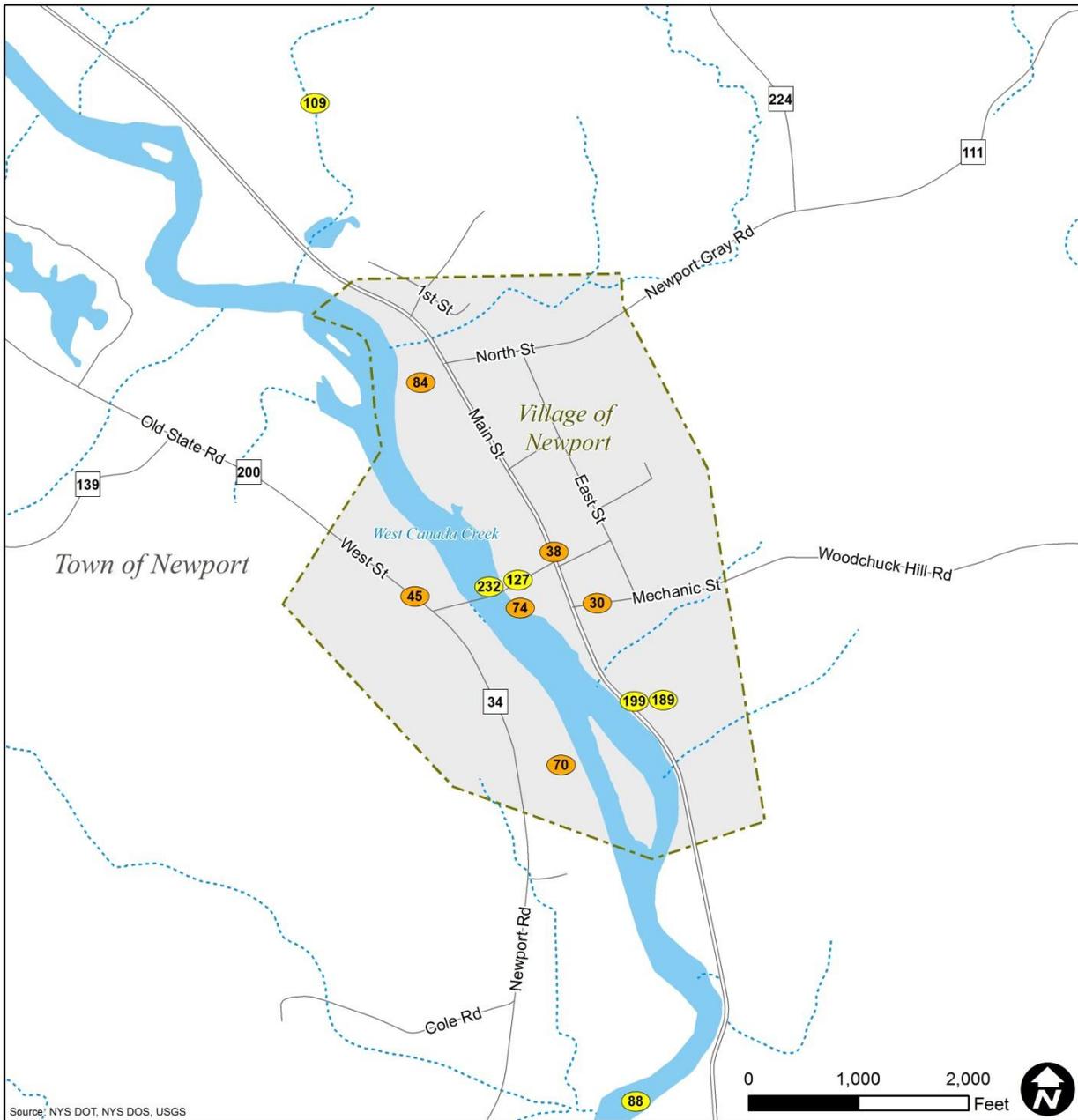


Table 35. Assets at Risk in the Villages of Cold Brook and Poland

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
55	Poland Village Drinking Water Treatment Plant and Water wells (2)	Extreme	Infrastructure Systems	High	Town of Russia	High
58	Residential Assets - Town of Newport	Extreme	Housing	High	Town of Newport	High
77	Residential Parcels - Village of Cold Brook	High	Housing	High	Village of Cold Brook	High
85	Residential Parcels - Village of Poland	High	Housing	High	Village of Poland	High
176	Bridge - Old State Road / West Canada Creek / County	High	Infrastructure Systems	Medium	Village of Poland	Moderate
243	Bridge - Route 8 / Cold Brook / NYSDOT	High	Infrastructure Systems	High	Village of Cold Brook	Moderate
244	Bridge - Route 8 / Cold Brook / NYSDOT	High	Infrastructure Systems	High	Village of Cold Brook	Moderate
245	Bridge - Route 8 / Cold Brook / NYSDOT	High	Infrastructure Systems	High	Village of Cold Brook	Moderate



Figure 5 - d. Assets at Risk in the Town and Village of Newport



Source: NYS DOT, NYS DOS, USGS

Newport
Detail View of
NYRCR Planning Area
Herkimer County

Asset Risk Level

- XX Severe Risk
- XX High Risk
- XX Moderate Risk
- XX Residual Risk

4



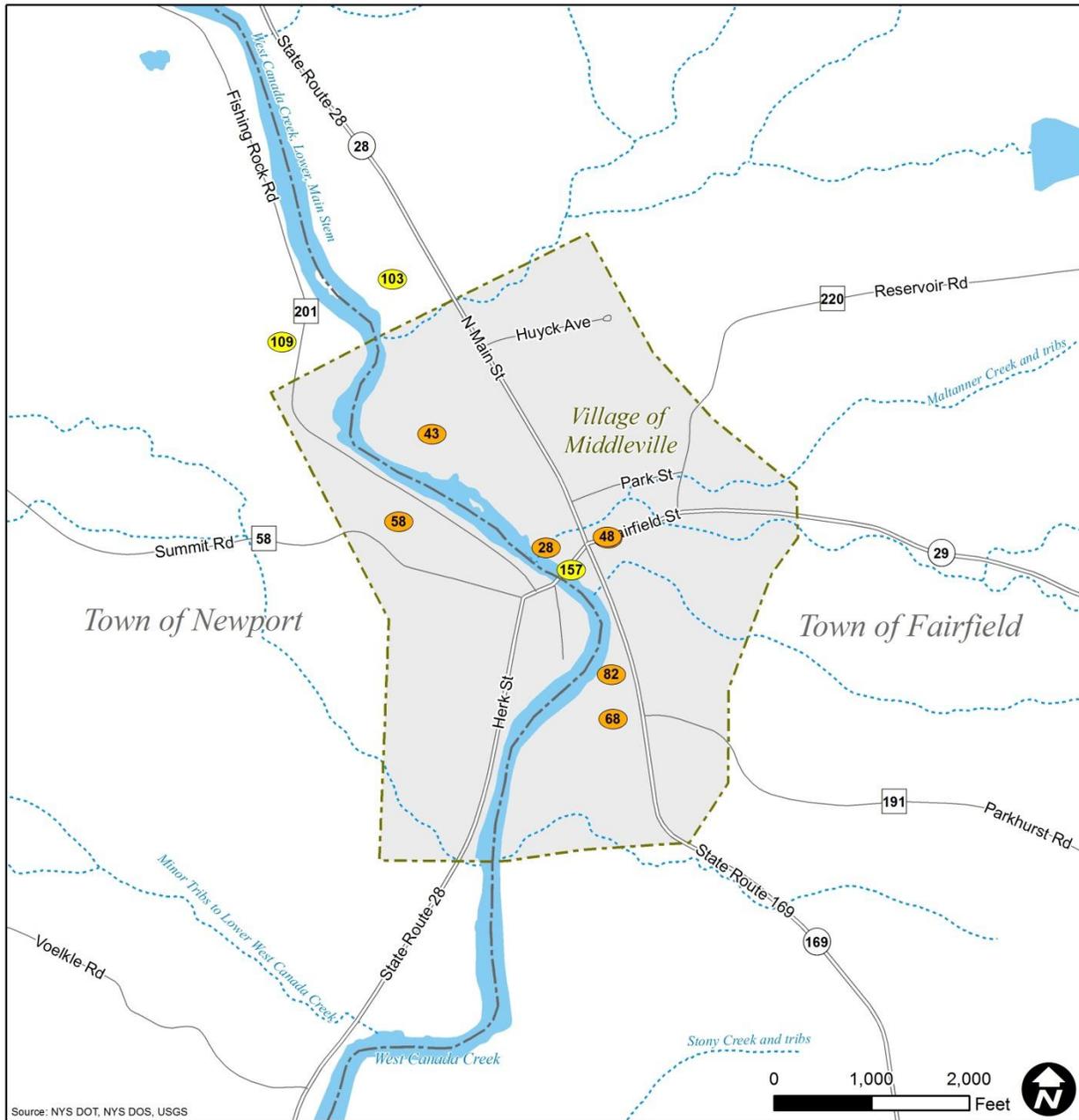


Table 36. Assets at Risk in the Town and Village of Newport

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
30	Commercial Assets - Village of Newport	Extreme	Economic	Medium	Village of Newport	High
38	Newport Post Office - 13416	Extreme	Health and Social Services	Medium	Village of Newport	High
45	Residential Assets - Village of Newport	Extreme	Housing	High	Village of Newport	High
70	Commercial Assets - Village of Newport	High	Economic	Medium	Village of Newport	High
74	Hydroelectric Plant - Village of Newport	High	Infrastructure Systems	High	Village of Newport	High
84	Residential Parcels - Village of Newport	High	Housing	High	Village of Newport	High
127	Bridge - Old State Road / West Canada Creek / County	Extreme	Infrastructure Systems	Medium	Village of Newport	Moderate
189	Newport Fire Station 4 - Newport	High	Health and Social Services	High	Village of Newport	Moderate
199	Village of Newport Municipal Hall	High	Health and Social Services	Medium	Village of Newport	Moderate
232	Newport Stone Arch Bridge	Extreme	Natural and Cultural Resources	Low	Village of Newport	Moderate



Figure 5 - e. Assets at Risk in the Village of Middleville



Source: NYS DOT, NYS DOS, USGS

Middleville
Detail View of
NYRCR Planning Area
Herkimer County

Asset Risk Level

- XX Severe Risk
- XX High Risk
- XX Moderate Risk
- XX Residual Risk

5



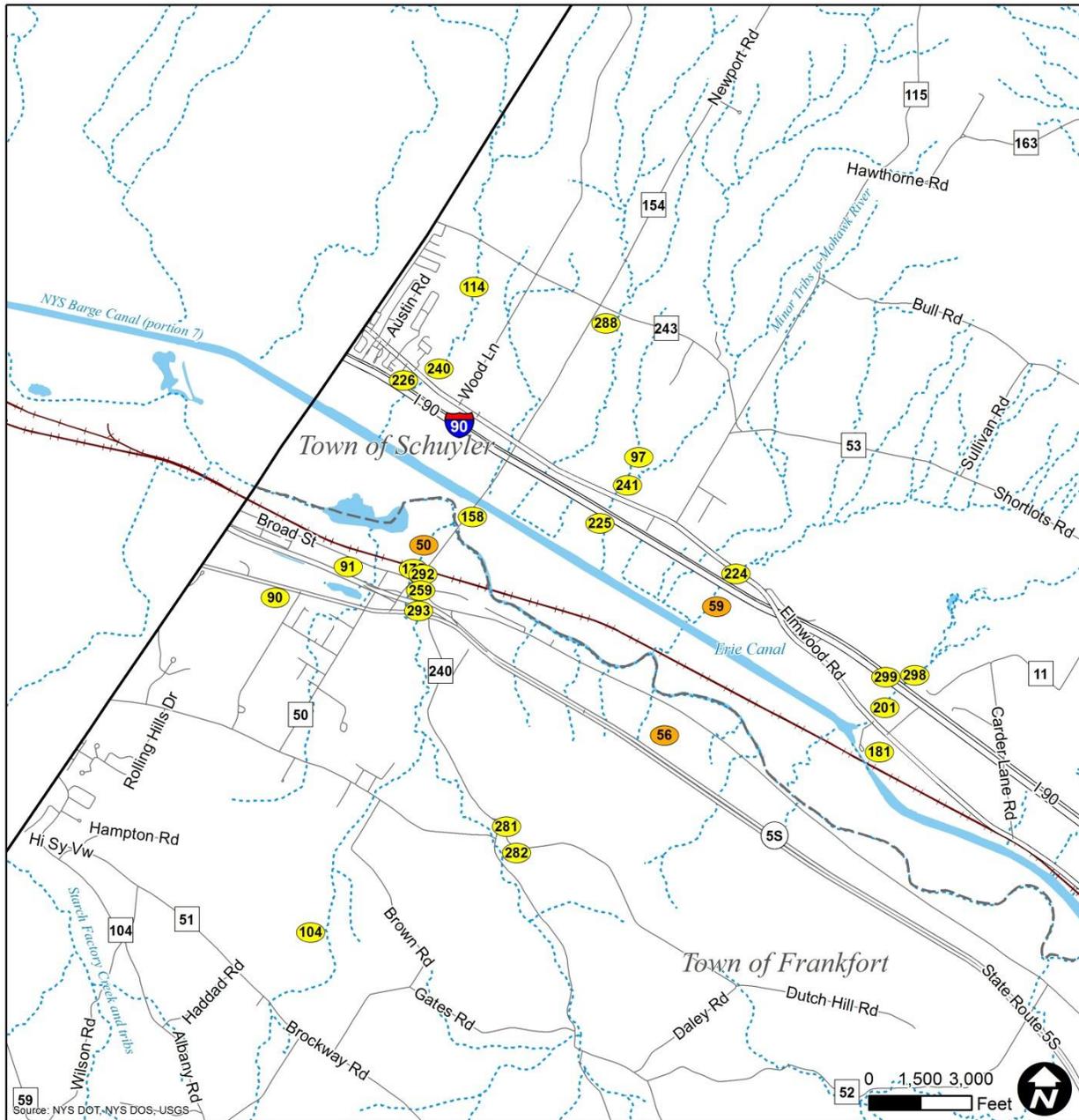


Table 37. Assets at Risk in the Village of Middleville

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
28	Commercial Assets - Village of Middleville	Extreme	Economic	Medium	Village of Middleville	High
36	Middleville Post Office - 13406	Extreme	Health and Social Services	Medium	Village of Middleville	High
43	Residential Assets - Village of Middleville	Extreme	Housing	High	Village of Middleville	High
48	Village of Middleville Municipal Hall	Extreme	Health and Social Services	Medium	Village of Middleville	High
68	Commercial Assets - Village of Middleville	High	Economic	Medium	Village of Middleville	High
82	Residential Parcels - Village of Middleville	High	Housing	High	Village of Middleville	High
103	Residential Parcels - Town of Fairfield	High	Housing	High	Town of Fairfield	Moderate
109	Residential Parcels - Town of Newport	High	Housing	High	Town of Newport	Moderate
157	Bridge - Route 28 / West Canada Creek / NYSDOT	Extreme	Infrastructure Systems	High	Village of Middleville	Moderate



Figure 5 - f. Assets at Risk in the Towns of Frankfort and Schuyler



Towns of Schuyler and Frankfort Detail View of NYRCR Planning Area Herkimer County	Asset Risk Level XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk	6	
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Table 38. Assets at Risk in the Towns of Frankfort and Schuyler

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
50	Commercial Assets - Town of Frankfort	Extreme	Economic	Medium	Town of Frankfort	High
56	Residential Assets - Town of Frankfort	Extreme	Housing	High	Town of Frankfort	High
59	Residential Assets - Town of Schuyler	Extreme	Housing	High	Town of Schuyler	High
91	Commercial Assets - Town of Frankfort	High	Economic	Medium	Town of Frankfort	Moderate
97	Commercial Assets - Town of Schuyler	High	Economic	Medium	Town of Schuyler	Moderate
104	Residential Parcels - Town of Frankfort	High	Housing	High	Town of Frankfort	Moderate
114	Residential Parcels - Town of Schuyler	High	Housing	High	Town of Schuyler	Moderate
158	Bridge - County Road 37 / Mohawk River / County	Extreme	Infrastructure Systems	Medium	Town of Frankfort	Moderate
174	Bridge - Brice Road / Moyer Creek / Town	Extreme	Infrastructure Systems	Medium	Town of Frankfort	Moderate
175	Bridge - Old State Rte 5S / Ferguson Creek / Town	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
181	Bridge - Csx Transportation / N Y S Barge Canal / Retired (Use To Be Conrail - Converted To 60)	Extreme	Infrastructure Systems	Medium	Town of Schuyler	Moderate
193	Residential Parcels - Town of Frankfort	Moderate	Housing	High	Town of Frankfort	Moderate
201	Bridge - Route 5 / Sterling Creek / NYSDOT	High	Infrastructure Systems	High	Town of Schuyler	Moderate
202	Bridge - Route 5 / Bridenbecker Crk / NYSDOT	High	Infrastructure Systems	High	Town of Schuyler	Moderate
208	Bridge - Route 5S / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
209	Bridge - Route 5S / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
224	Bridge - 90I X / Burch Creek / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Schuyler	Moderate
225	Bridge - 90I X / Knapp Creek / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Schuyler	Moderate
226	Bridge - 90I X / Budlong Creek / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Schuyler	Moderate
240	Bridge - Route 5 / Budlong Creek / NYSDOT	High	Infrastructure Systems	High	Town of Schuyler	Moderate
241	Bridge - Route 5 / Knapp Brook / NYSDOT	High	Infrastructure Systems	High	Town of Schuyler	Moderate
252	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate

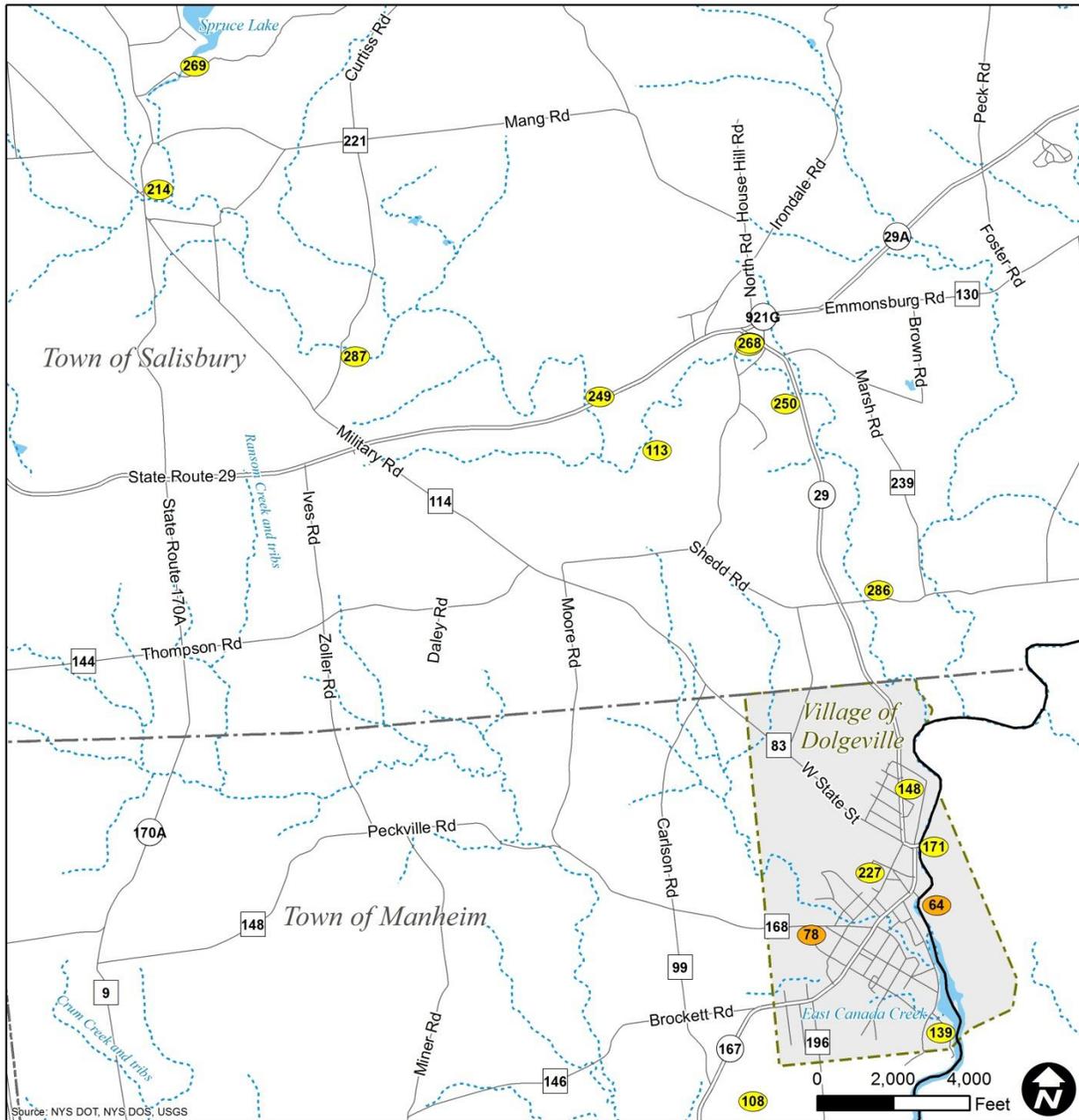


Herkimer County NY Rising Countywide Resiliency Plan

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
253	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
254	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
255	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
256	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
257	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
258	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
259	Bridge - Route 5S / Ferguson Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
281	Bridge - County Road 13 / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
282	Bridge - County Road 13 / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
288	Bridge - Cosby Manor Road / Wood Creek / County	High	Infrastructure Systems	Medium	Town of Schuyler	Moderate
292	Bridge - County Road 37 / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
293	Bridge - Bleeker St Exten / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
297	Bridge - 90I X Md225.43 / Bridenbaker Creek / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Schuyler	Moderate
298	Bridge - 90I X(Wb) / Sterling Creek / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Schuyler	Moderate
299	Bridge - 90I X(Eb) / Sterling Creek / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Schuyler	Moderate



Figure 5 - g. Assets at Risk in the Village of Dolgeville and Town of Salisbury



<p>Dolgeville Detail View of NYRCR Planning Area Herkimer County</p>	<p>Asset Risk Level</p> <ul style="list-style-type: none"> XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk 	<p>7</p>	
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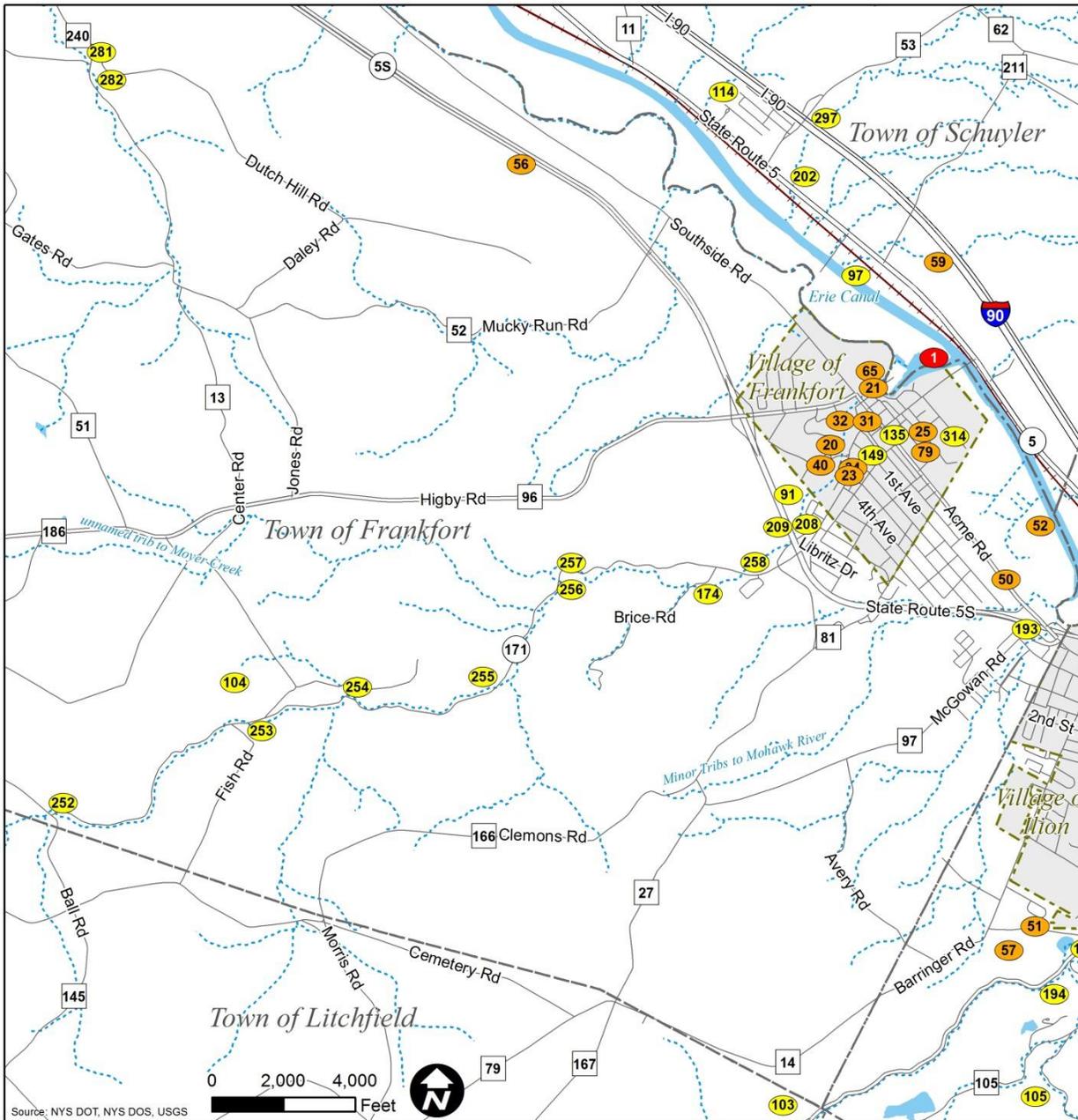


Table 39. Assets at Risk in the Village of Dolgeville and the Town of Salisbury

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
64	Commercial Assets - Village of Dolgeville	High	Economic	Medium	Village of Dolgeville	High
78	Residential Parcels - Village of Dolgeville	High	Housing	High	Village of Dolgeville	High
113	Residential Parcels - Town of Salisbury	High	Housing	High	Town of Salisbury	Moderate
139	Dolgeville Wastewater Treatment Plant	Moderate	Infrastructure Systems	High	Village of Dolgeville	Moderate
148	Residential Parcels - Village of Dolgeville	Moderate	Housing	High	Village of Dolgeville	Moderate
171	Bridge - Route 29 / East Canada Creek / NYSDOT	High	Infrastructure Systems	High	Village of Dolgeville	Moderate
214	Bridge - Military Road / Beaver Creek / County	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
227	Dolgeville Fire Station - Dolgeville	High	Health and Social Services	High	Village of Dolgeville	Moderate
249	Bridge - Route 29 / Spruce Creek / NYSDOT	High	Infrastructure Systems	High	Town of Salisbury	Moderate
250	Bridge - Route 29 / Spruce Creek / NYSDOT	High	Infrastructure Systems	High	Town of Salisbury	Moderate
268	Bridge - Fairview Road / Spruce Creek / Town	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
269	Bridge - Red Mill Road / Spruce Creek / Town	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
276	Bridge - Fairview Road / Spruce Creek / Town	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
286	Bridge - County Road 164 / Spruce Creek / County	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
287	Bridge - County Road 221 / Spruce Creek / County	High	Infrastructure Systems	Medium	Town of Salisbury	Moderate
318	Salisbury Center Covered Bridge	High	Natural and Cultural Resources	Low	Town of Salisbury	Moderate



Figure 5 - h. Assets at Risk in the Village of Frankfort



<p>Frankfort Detail View of NYRCR Planning Area Herkimer County</p>	<p>Asset Risk Level</p> <ul style="list-style-type: none"> XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk 	<p>8</p>	
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Table 40. Assets at Risk in the Village of Frankfort

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
1	Frankfort Recreational Dams #1 & #2 (Lock #19)	Extreme	Infrastructure Systems	Low	Village of Frankfort	Severe
20	Bridge - 2263710 / Hilltop Road / Moyer Creek / Village	Extreme	Infrastructure Systems	Medium	Village of Frankfort	High
21	Bridge - West Main Street / Moyer Creek / Village	Extreme	Infrastructure Systems	Medium	Village of Frankfort	High
23	Campus Apts	Extreme	Housing	Medium	Village of Frankfort	High
25	Commercial Assets - Village of Frankfort	Extreme	Economic	Medium	Village of Frankfort	High
31	Frankfort Fire Department Volunteer Ambulance	Extreme	Health and Social Services	High	Village of Frankfort	High
32	Frankfort Fire Station	Extreme	Health and Social Services	High	Village of Frankfort	High
34	Litchfield Manor	Extreme	Housing	Medium	Village of Frankfort	High
40	Residential Assets - Village of Frankfort	Extreme	Housing	High	Village of Frankfort	High
47	Streamside Manor	Extreme	Housing	Medium	Village of Frankfort	High
50	Commercial Assets - Town of Frankfort	Extreme	Economic	Medium	Town of Frankfort	High
56	Residential Assets - Town of Frankfort	Extreme	Housing	High	Town of Frankfort	High
65	Commercial Assets - Village of Frankfort	High	Economic	Medium	Village of Frankfort	High
79	Residential Parcels - Village of Frankfort	High	Housing	High	Village of Frankfort	High
91	Commercial Assets - Town of Frankfort	High	Economic	Medium	Town of Frankfort	Moderate
104	Residential Parcels - Town of Frankfort	High	Housing	High	Town of Frankfort	Moderate
135	Commercial Assets - Village of Frankfort	Moderate	Economic	Medium	Village of Frankfort	Moderate
149	Residential Parcels - Village of Frankfort	Moderate	Housing	High	Village of Frankfort	Moderate
158	Bridge - County Road 37 / Mohawk River / County	Extreme	Infrastructure Systems	Medium	Town of Frankfort	Moderate
174	Bridge - Brice Road / Moyer Creek / Town	Extreme	Infrastructure Systems	Medium	Town of Frankfort	Moderate
175	Bridge - Old State Rte 5S / Ferguson Creek / Town	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate

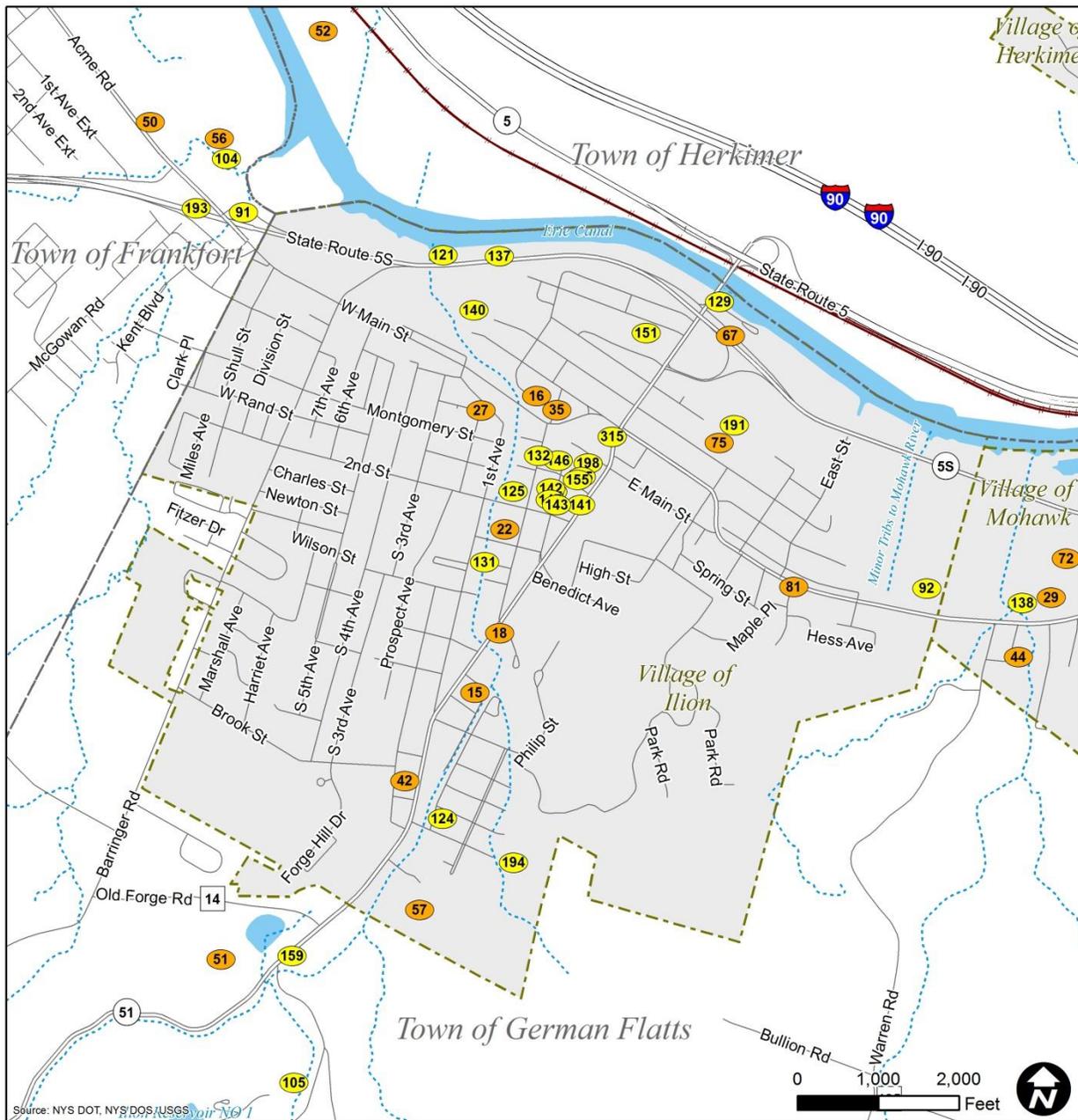


Herkimer County NY Rising Countywide Resiliency Plan

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
193	Residential Parcels - Town of Frankfort	Moderate	Housing	High	Town of Frankfort	Moderate
208	Bridge - Route 5S / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
209	Bridge - Route 5S / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
252	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
253	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
254	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
255	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
256	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
257	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
258	Bridge - Route 171 / Moyer Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
259	Bridge - Route 5S / Ferguson Creek / NYSDOT	High	Infrastructure Systems	High	Town of Frankfort	Moderate
281	Bridge - County Road 13 / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
282	Bridge - County Road 13 / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
292	Bridge - County Road 37 / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
293	Bridge - Bleeker St Exten / Ferguson Creek / County	High	Infrastructure Systems	Medium	Town of Frankfort	Moderate
314	Electrical Substation - Village Of Frankfort	Moderate	Infrastructure Systems	High	Village of Frankfort	Moderate



Figure 5 - i. Assets at Risk in the Village of Ilion



Ilion
Detail View of
NYRCR Planning Area
Herkimer County

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

9





Table 41. Assets at Risk in the Village of Ilion

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
15	A Little Mommy & Daddy Daycare	Extreme	Health and Social Services	Medium	Village of Ilion	High
16	Bridge -Main Street / Steele Creek / Village	Extreme	Infrastructure Systems	Medium	Village of Ilion	High
18	Bridge - Route 51 / Steele Creek / NYSDOT	Extreme	Infrastructure Systems	High	Village of Ilion	High
22	Bridge - Third Street / Steele Creek / Town	Extreme	Infrastructure Systems	Medium	Village of Ilion	High
27	Commercial Assets - Village of Ilion	Extreme	Economic	Medium	Village of Ilion	High
35	London Towers Apts	Extreme	Housing	Medium	Village of Ilion	High
42	Residential Assets - Village of Ilion	Extreme	Housing	High	Village of Ilion	High
67	Commercial Assets - Village of Ilion	High	Economic	Medium	Village of Ilion	High
75	John Guy Prindle Apts	High	Housing	Medium	Village of Ilion	High
81	Residential Parcels - Village of Ilion	High	Housing	High	Village of Ilion	High
121	Bridge - Route 55 / Steele Creek / NYSDOT	Extreme	Infrastructure Systems	High	Village of Ilion	Moderate
124	Bridge - Richfield Street / Steele Creek / Town	Extreme	Infrastructure Systems	Medium	Village of Ilion	Moderate
125	Bridge - Second Street / Steele Creek / Town	Extreme	Infrastructure Systems	Medium	Village of Ilion	Moderate
129	Bridge - Route 51 / Route 5 / NYSDOT	Extreme	Infrastructure Systems	High	Village of Ilion	Moderate
131	Christian and Missionary Alliance Church	Extreme	Natural and Cultural Resources	Low	Village of Ilion	Moderate
132	Church of the Annunciation	Extreme	Natural and Cultural Resources	Low	Village of Ilion	Moderate
137	Commercial Assets - Village of Ilion	Moderate	Economic	Medium	Village of Ilion	Moderate
140	Electrical Substation - Village of Ilion	Extreme	Infrastructure Systems	High	Village of Ilion	Moderate
141	First Baptist Church	Extreme	Natural and Cultural Resources	Low	Village of Ilion	Moderate
142	First Methodist Church	Extreme	Natural and Cultural Resources	Low	Village of Ilion	Moderate

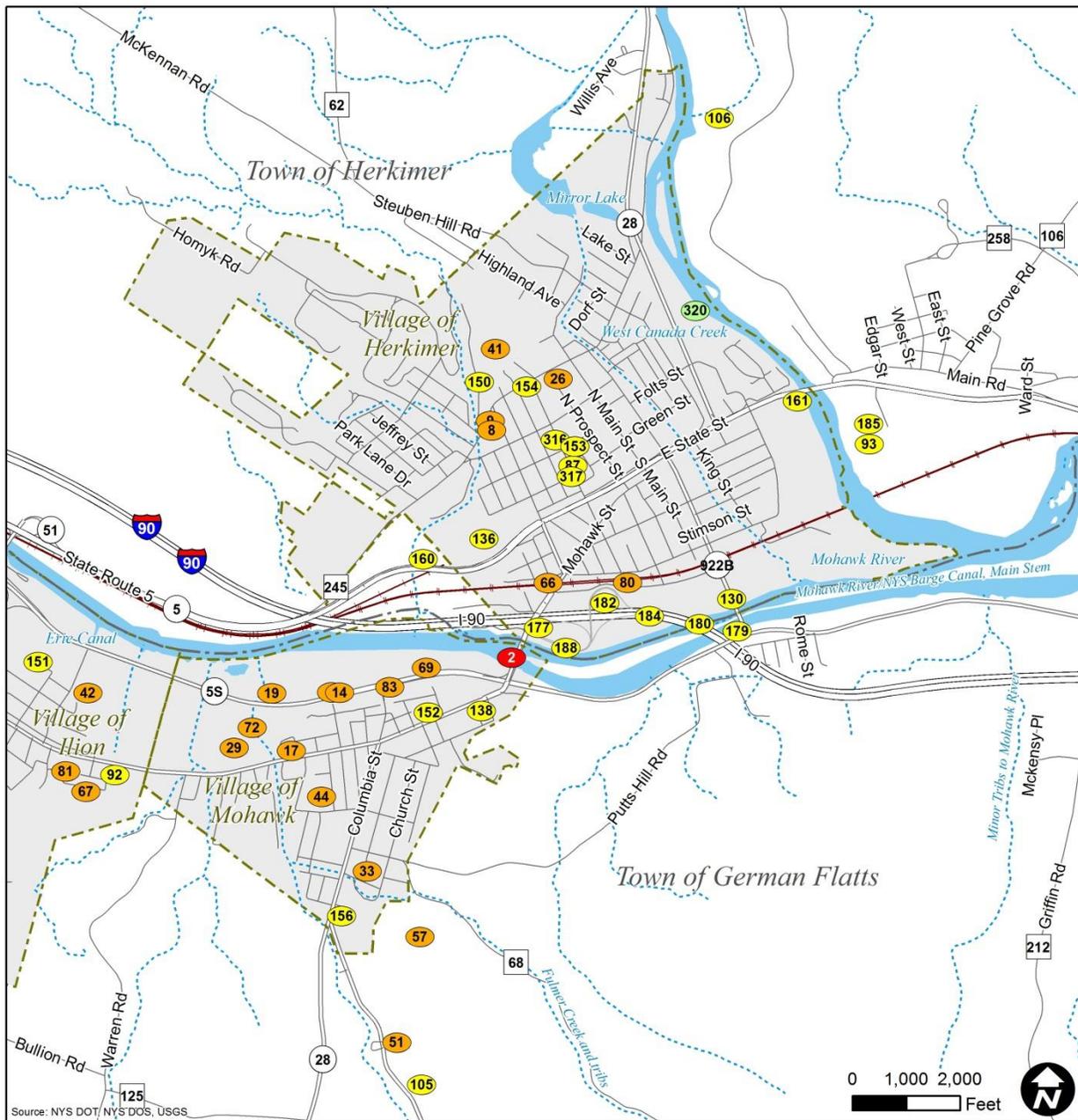


Herkimer County NY Rising Countywide Resiliency Plan

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
143	First Presbyterian Church	Extreme	Natural and Cultural Resources	Low	Village of Ilion	Moderate
145	Ilion Municipal Building (Shelter)	Extreme	Health and Social Services	Medium	Village of Ilion	Moderate
146	Ilion Post Office - 13357	Extreme	Health and Social Services	Medium	Village of Ilion	Moderate
147	Mohawk Valley Community Action	Extreme	Health and Social Services	Medium	Village of Ilion	Moderate
151	Residential Parcels - Village of Ilion	Moderate	Housing	High	Village of Ilion	Moderate
155	Village of Ilion Municipal Hall	Extreme	Health and Social Services	Medium	Village of Ilion	Moderate
183	First United Methodist Church	Extreme	Natural and Cultural Resources	Low	Village of Ilion	Moderate
191	Remington Elementary School (Shelter)	High	Health and Social Services	High	Village of Ilion	Moderate
198	US Post Office--Ilion	Extreme	Natural and Cultural Resources	Low	Village of Ilion	Moderate
315	Ilion Fire Station - Ilion	Moderate	Health and Social Services	High	Village of Ilion	Moderate



Figure 5 - j. Assets at Risk in the Villages of Herkimer and Mohawk



<p>Mohawk & Herkimer Detail View of NYRCR Planning Area Herkimer County</p>	<p>Asset Risk Level</p> <ul style="list-style-type: none"> XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk 	<p>10</p>	
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Herkimer County NY Rising Countywide Resiliency Plan

Table 42. Assets at Risk in the Villages of Herkimer and Mohawk

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
2	Lock E-18 Dam Herkimer	Extreme	Infrastructure Systems	Low	Village of Mohawk	Severe
4	Electrical Substation - Village of Mohawk	High	Infrastructure Systems	High	Village of Mohawk	High
8	Bridge - West German St / Bellinger Brook / Village	Extreme	Infrastructure Systems	Medium	Village of Herkimer	High
9	Bridge - Maple Grove Ave / Bellinger Brook / Village	Extreme	Infrastructure Systems	Medium	Village of Herkimer	High
14	Mohawk (V) Water Works Drinking Water Treatment Plant and Wells (3)	High	Infrastructure Systems	High	Village of Mohawk	High
17	Bridge - West Main Street / Fulmer Creek / Town	Extreme	Infrastructure Systems	Medium	Village of Mohawk	High
19	Bridge - Route 5S / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	High	Village of Mohawk	High
26	Commercial Assets - Village of Herkimer	Extreme	Economic	Medium	Village of Herkimer	High
29	Commercial Assets - Village of Mohawk	Extreme	Economic	Medium	Village of Mohawk	High
33	Harry M Fisher Elementary School (shelter)	Extreme	Health and Social Services	High	Village of Mohawk	High
41	Residential Assets - Village of Herkimer	Extreme	Housing	High	Village of Herkimer	High
44	Residential Assets - Village of Mohawk	Extreme	Housing	High	Village of Mohawk	High
66	Commercial Assets - Village of Herkimer	High	Economic	Medium	Village of Herkimer	High
69	Commercial Assets - Village of Mohawk	High	Economic	Medium	Village of Mohawk	High
72	Herkimer County Sd Wastewater Treatment Facility	High	Infrastructure Systems	High	Village of Mohawk	High
80	Residential Parcels - Village of Herkimer	High	Housing	High	Village of Herkimer	High
83	Residential Parcels - Village of Mohawk	High	Housing	High	Village of Mohawk	High
87	Saint Francis de Sales Regional Catholic School	Moderate	Health and Social Services	High	Village of Herkimer	Moderate
130	Bridge - Route 922B / Erie Barge Canal / NYSDOT	Extreme	Infrastructure Systems	High	Village of Herkimer	Moderate
136	Commercial Assets - Village of Herkimer	Moderate	Economic	Medium	Village of Herkimer	Moderate
138	Commercial Assets - Village of Mohawk	Moderate	Economic	Medium	Village of Mohawk	Moderate

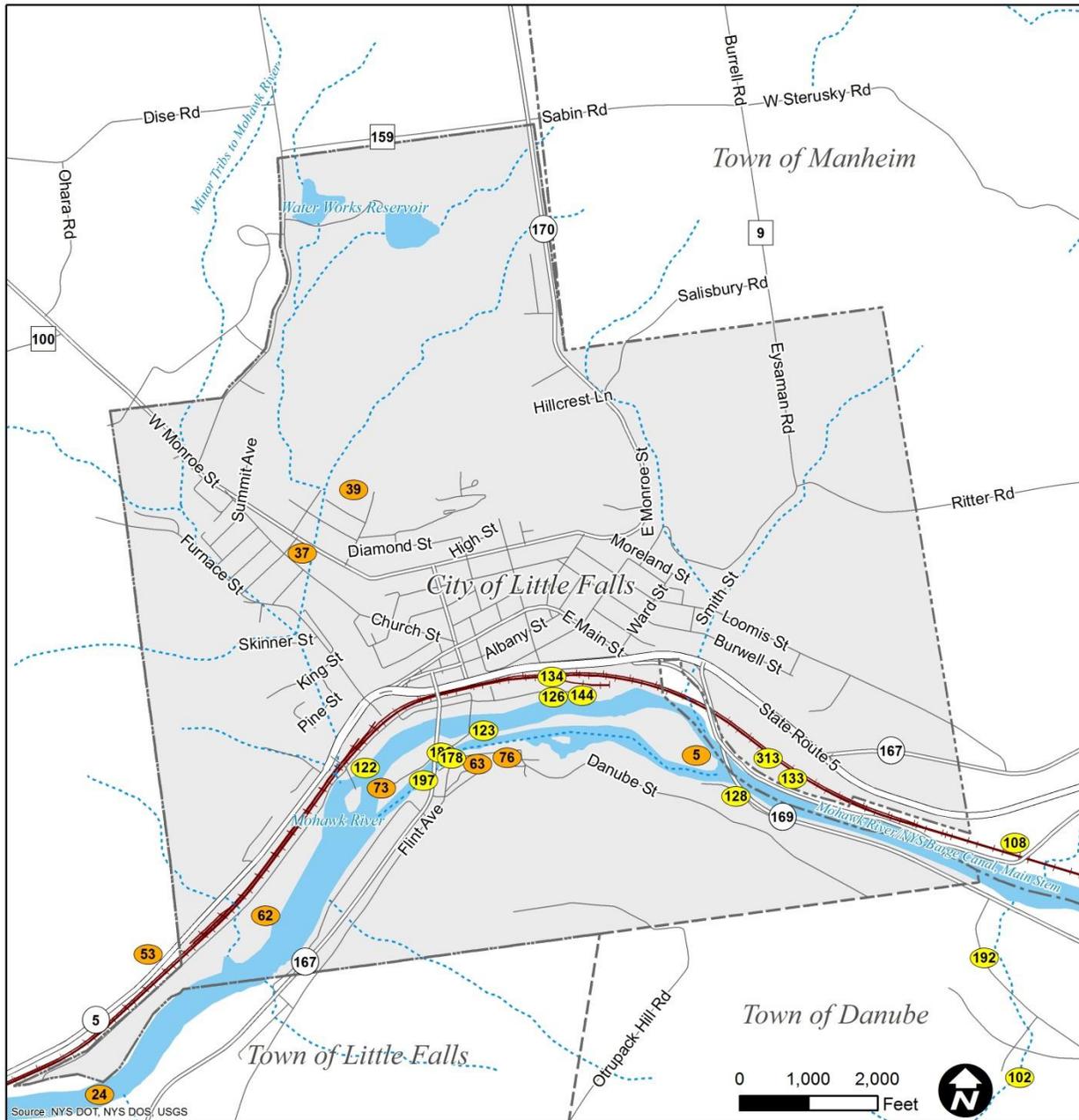


Herkimer County NY Rising Countywide Resiliency Plan

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
150	Residential Parcels - Village of Herkimer	Moderate	Housing	High	Village of Herkimer	Moderate
152	Residential Parcels - Village of Mohawk	Moderate	Housing	High	Village of Mohawk	Moderate
153	Saint Francis de Sales Roman Catholic Church	Moderate	Natural and Cultural Resources	Low	Village of Herkimer	Moderate
154	Trinity Evangelical Lutheran Church	Moderate	Natural and Cultural Resources	Low	Village of Herkimer	Moderate
156	Bridge - Route 28 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	High	Village of Mohawk	Moderate
161	Bridge - Route 5 / West Canada Creek / NYSDOT	High	Infrastructure Systems	High	Village of Herkimer	Moderate
177	Bridge - Route 28 / State Barge Canal / NYSDOT	High	Infrastructure Systems	High	Village of Herkimer	Moderate
180	Bridge - 90I Xeb-Mp 219.2 / Route 5S / NYS Thruway Authority	High	Infrastructure Systems	Medium	Village of Herkimer	Moderate
182	Bridge -90I X / Exit 30 Ramp / NYS Thruway Authority	High	Infrastructure Systems	Medium	Village of Herkimer	Moderate
188	New York State Thruway Authority Microwave Towers (2)	High	Infrastructure Systems	High	Village of Herkimer	Moderate
317	OPWDD Community Residence Facility	Moderate	Housing	Medium	Village of Herkimer	Moderate
320	Electrical Substation - Village Of Herkimer	Moderate	Infrastructure Systems	High	Village of Herkimer	Residual



Figure 5 - k. Assets at Risk in the City of Little Falls



<p>Little Falls Detail View of NYRCR Planning Area Herkimer County</p>	<p>Asset Risk Level</p> <ul style="list-style-type: none"> XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk 	<p>11</p>	
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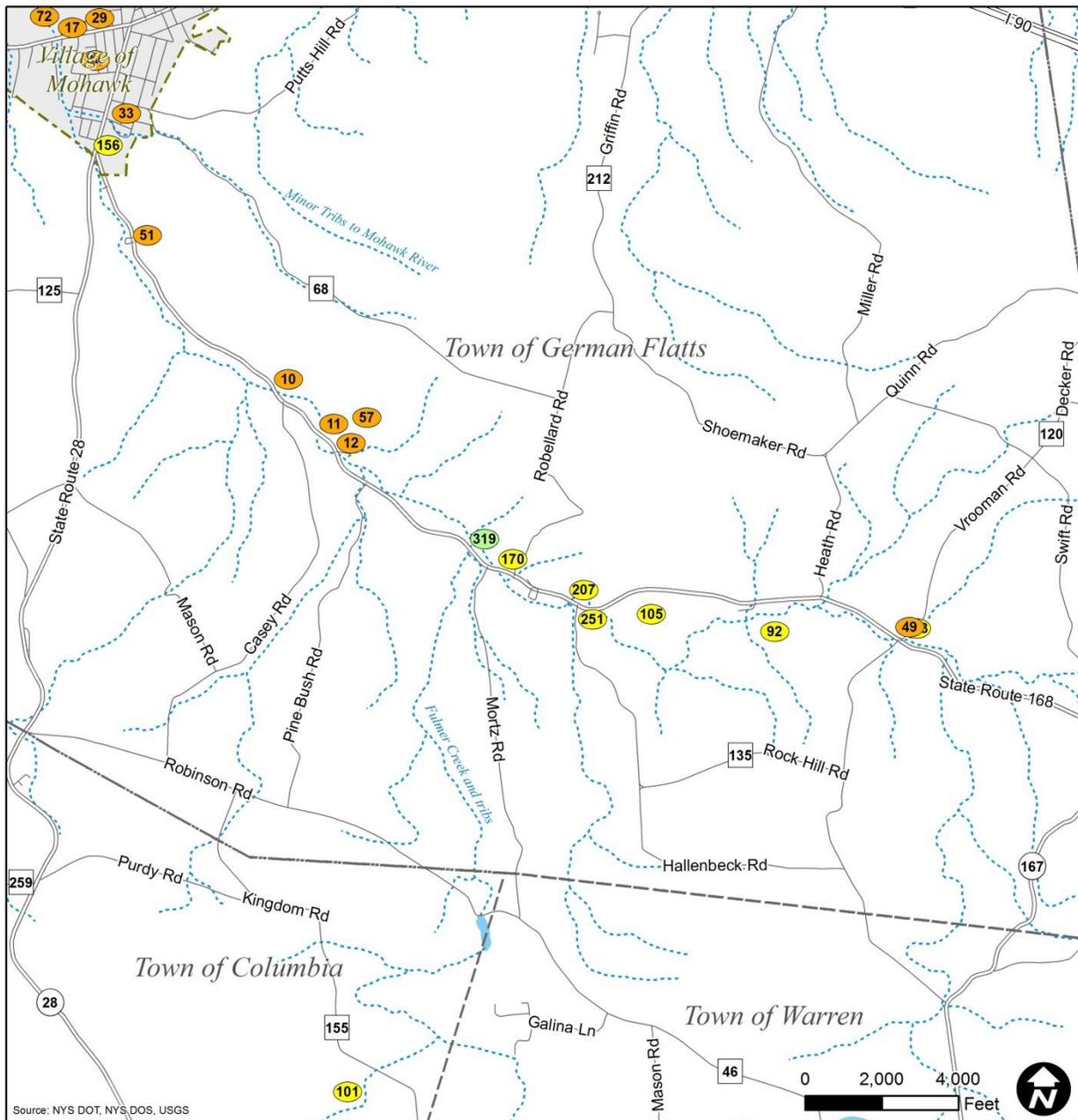


Table 43. Assets at Risk in the City of Little Falls

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
5	Lock E-17	High	Infrastructure Systems	Low	City of Little Falls	High
24	Commercial Assets - City of Little Falls	Extreme	Economic	Medium	City of Little Falls	High
37	Mohawk Valley Christian Academy	Extreme	Health and Social Services	High	City of Little Falls	High
39	Residential Assets - City of Little Falls	Extreme	Housing	High	City of Little Falls	High
62	Burrow's Paper	Extreme	Economic	High	City of Little Falls	High
63	Commercial Assets - City of Little Falls	High	Economic	Medium	City of Little Falls	High
73	Hydroelectric Plant - Town of Little Falls	High	Infrastructure Systems	High	City of Little Falls	High
76	Residential Parcels - City of Little Falls	High	Housing	High	City of Little Falls	High
122	Bridge - Hansen Avenue / Mohawk River / City	Extreme	Infrastructure Systems	Medium	City of Little Falls	Moderate
123	Bridge - South Ann Street / Mohawk River / City	Extreme	Infrastructure Systems	Medium	City of Little Falls	15
126	Bridge - William Street / Mohawk River / City	Extreme	Infrastructure Systems	Medium	City of Little Falls	15
128	Bridge - Route 169 / River Road / NYSDOT	Extreme	Infrastructure Systems	High	City of Little Falls	15
133	City of Little Falls Water Treatment Plant	Extreme	Infrastructure Systems	High	City of Little Falls	15
134	Commercial Assets - City of Little Falls	Moderate	Economic	Medium	City of Little Falls	15
144	Gilbert Knitting Mills Dam	Extreme	Infrastructure Systems	Low	City of Little Falls	15
178	Bridge - Route 167 / W. Mill St / NYSDOT	High	Infrastructure Systems	High	City of Little Falls	12
186	Middle Falls Dam	High	Infrastructure Systems	Low	City of Little Falls	12
197	State Diverting Dams (North & South)	High	Infrastructure Systems	Low	City of Little Falls	12



Figure 5 - I. Assets at Risk in the Town of German Flatts



Source: NYS DOT, NYS DOS, USGS

Town of German Flatts
 Detail View of
 NYRCR Planning Area
 Herkimer County

Asset Risk Level

- XX Severe Risk
- XX High Risk
- XX Moderate Risk
- XX Residual Risk

12



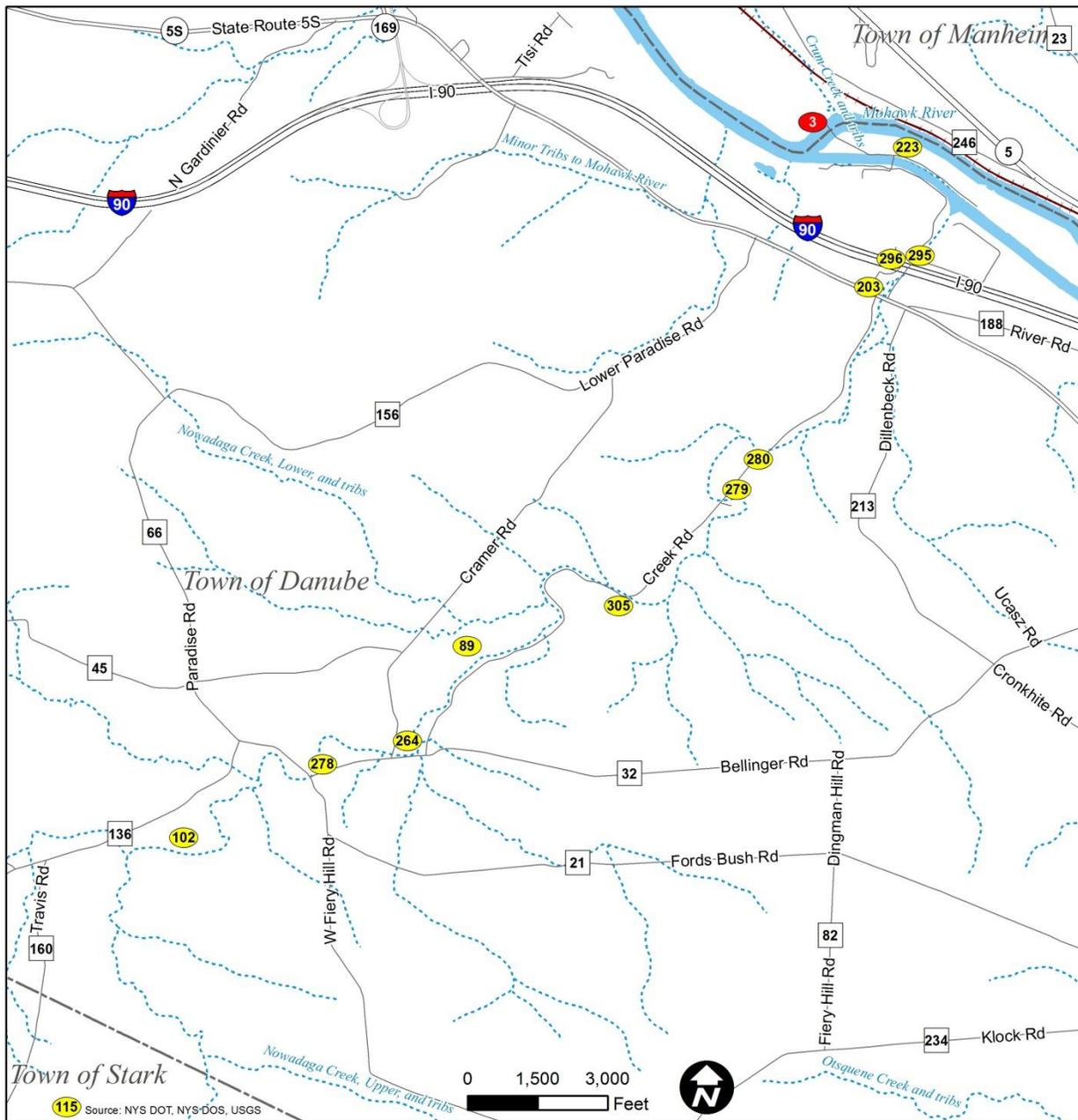


Table 44. Assets at Risk in the Town of German Flatts

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Score
10	Bridge - Route 168 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of German Flatts	High
11	Bridge - Route 168 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of German Flatts	High
12	Bridge - Route 168 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of German Flatts	High
49	Bridge - Route 168 / Fulmer Creek / NYSDOT	High	Infrastructure Systems	High	Town of German Flatts	High
51	Commercial Assets - Town of German Flatts	Extreme	Economic	Medium	Town of German Flatts	High
57	Residential Assets - Town of German Flatts	Extreme	Housing	High	Town of German Flatts	High
92	Commercial Assets - Town of German Flatts	High	Economic	Medium	Town of German Flatts	Moderate
105	Residential Parcels - Town of German Flatts	High	Housing	High	Town of German Flatts	Moderate
159	Bridge - Spinnerville Road / Steele Creek / County	Extreme	Infrastructure Systems	Medium	Town of German Flatts	Moderate
170	Bridge - Route 168 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of German Flatts	Moderate
179	Bridge - 90I X Wb Mp219.2 / Route 5S / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of German Flatts	Moderate
184	Herkimer Village Drinking Water Treatment Plant	High	Infrastructure Systems	High	Town of German Flatts	Moderate
194	Residential Parcels - Town of German Flatts	Moderate	Housing	High	Town of German Flatts	Moderate
207	Bridge - Route 168 / Fulmer Creek / NYSDOT	High	Infrastructure Systems	High	Town of German Flatts	Moderate
251	Bridge - Route 168 / Fulmer Creek / NYSDOT	High	Infrastructure Systems	High	Town of German Flatts	Moderate
283	Bridge - County Road 68 / Fulmer Creek / County	High	Infrastructure Systems	Medium	Town of German Flatts	Moderate
319	Bridge - Route 168 / Flatt Creek / NYSDOT	Moderate	Infrastructure Systems	High	Town of German Flatts	Residual



Figure 5 - m. Assets at Risk in the Town of Danube



Town of Danube
 Detail View of
 NYRCR Planning Area
 Herkimer County

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

13



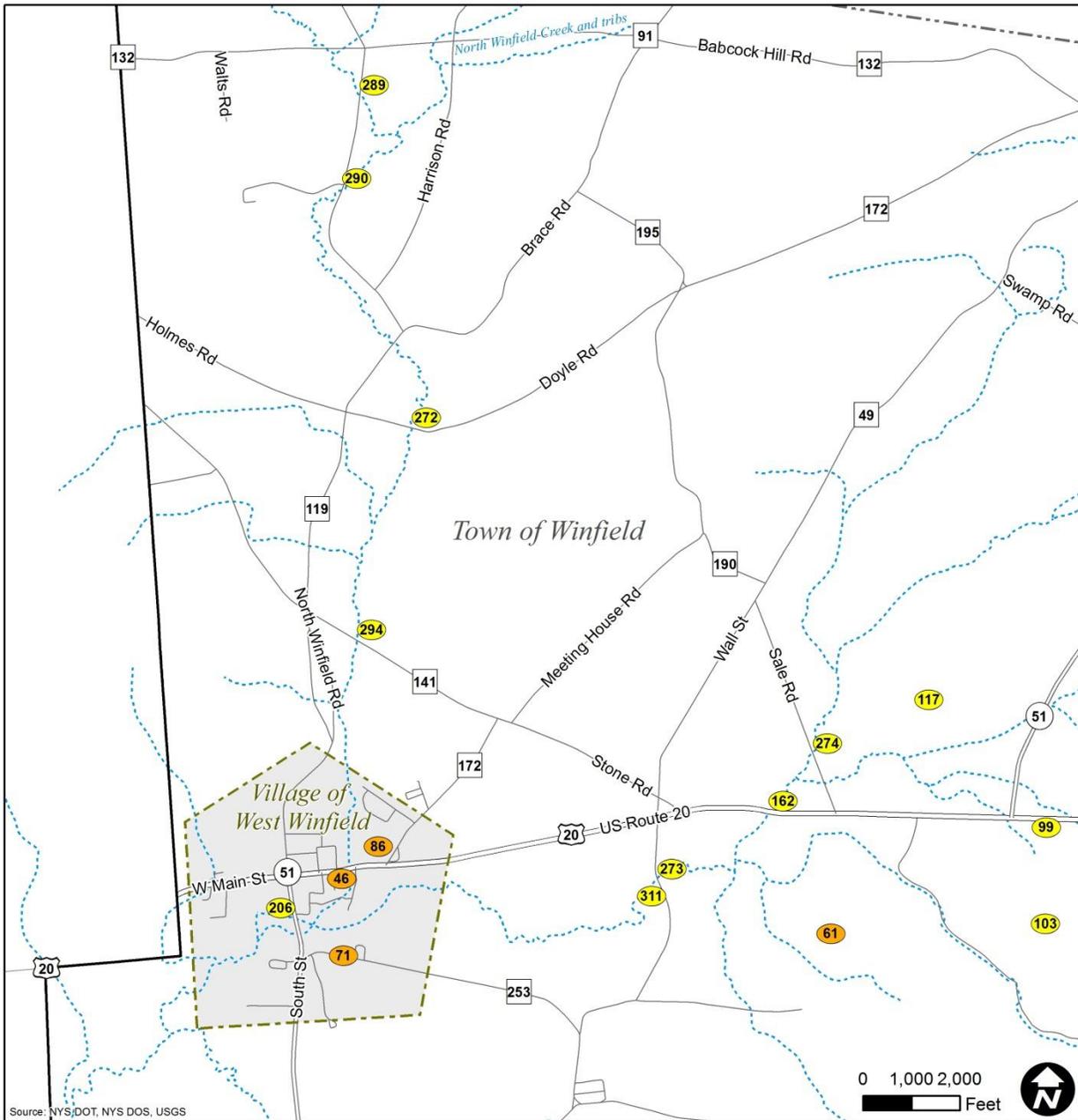


Table 45. Assets at Risk in the Town of Danube

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
89	Commercial Assets - Town of Danube	High	Economic	Medium	Town of Danube	Moderate
102	Residential Parcels - Town of Danube	High	Housing	High	Town of Danube	Moderate
192	Residential Parcels - Town of Danube	Moderate	Housing	High	Town of Danube	Moderate
203	Bridge - Route 5S / Nowadaga Creek / NYSDOT	High	Infrastructure Systems	High	Town of Danube	Moderate
223	Bridge - Service Road / Erie Barge Canal / NYSDOT	High	Infrastructure Systems	Medium	Town of Danube	Moderate
264	Bridge - Tibbitts Road / Nowadaga Creek / Town	High	Infrastructure Systems	Medium	Town of Danube	Moderate
278	Bridge - Newville Road / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate
279	Bridge - County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate
280	Bridge - County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate
295	Bridge - 90I X Westbound / Depot Rd / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Danube	Moderate
296	Bridge - 90I X Eastbound / Depot Rd / NYS Thruway Authority	High	Infrastructure Systems	Medium	Town of Danube	Moderate
305	Bridge - County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Medium	Town of Danube	Moderate



Figure 5 - n. Assets at Risk in the Town of Winfield and Village of West Winfield



<p>West Winfield Detail View of NYRCR Planning Area Herkimer County</p>	<p>Asset Risk Level</p> <ul style="list-style-type: none"> XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk 	<p>14</p>	
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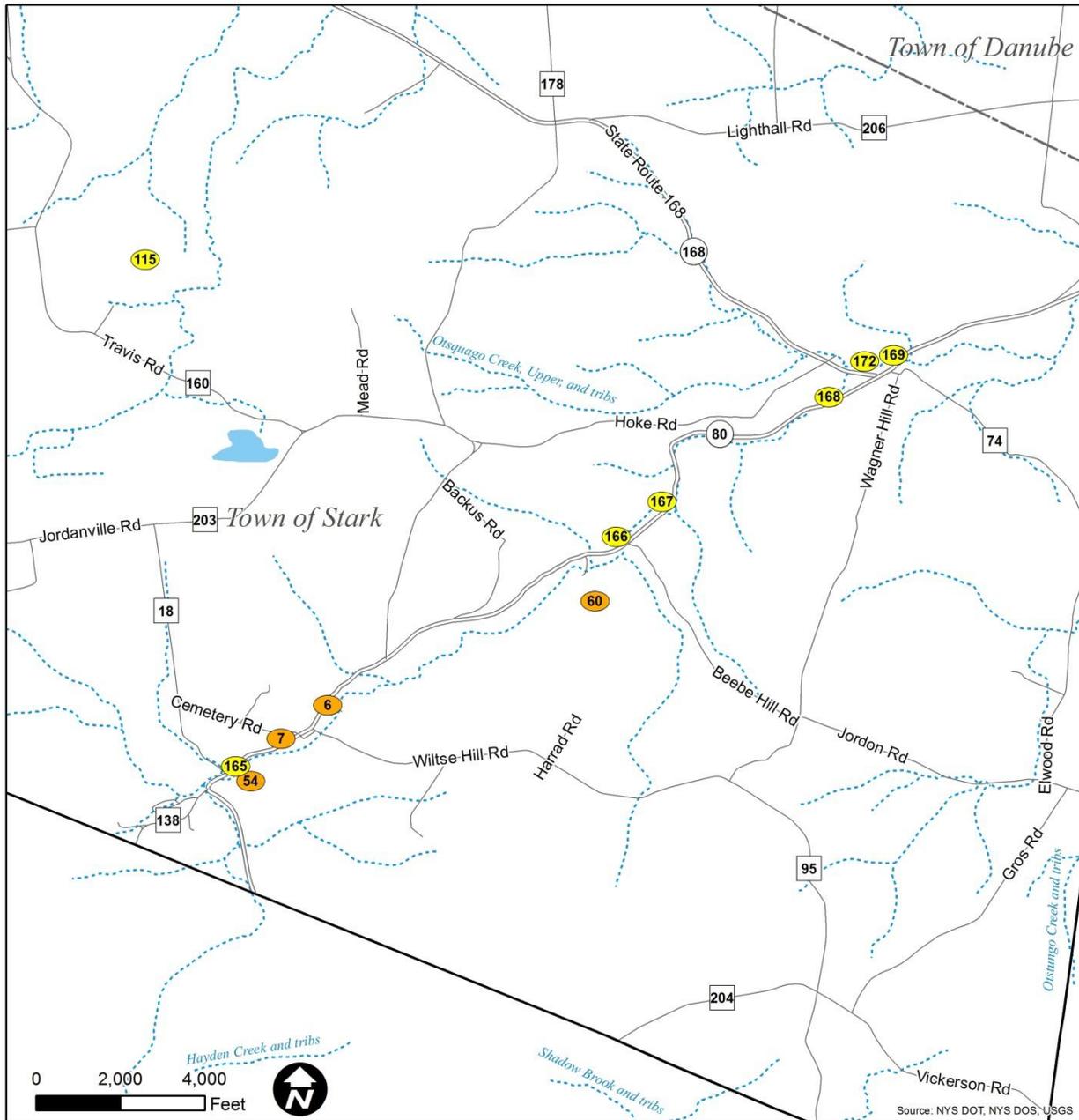


Table 46. Assets at Risk in the Town of Winfield and Village of West Winfield

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
46	Residential Assets - Village of West Winfield	Extreme	Housing	High	Village of West Winfield	High
61	Residential Assets - Town of Winfield	Extreme	Housing	High	Town of Winfield	High
71	Commercial Assets - Village of West Winfield	High	Economic	Medium	Village of West Winfield	High
86	Residential Parcels - Village of West Winfield	High	Housing	High	Village of West Winfield	High
99	Commercial Assets - Town of Winfield	High	Economic	Medium	Town of Winfield	Moderate
117	Residential Parcels - Town of Winfield	High	Housing	High	Town of Winfield	Moderate
162	Bridge - Route 20 / Unadilla River / NYSDOT	Extreme	Infrastructure Systems	High	Town of Winfield	Moderate
190	OPWDD Family Care Facility	High	Health and Social Services	Medium	Village of West Winfield	Moderate
206	Bridge - Route 51 / Unadilla River / NYSDOT	High	Infrastructure Systems	High	Village of West Winfield	Moderate
272	Bridge - Doyle Road / North Winfield Cr / Town	High	Infrastructure Systems	Medium	Town of Winfield	Moderate
273	Bridge - Jones Road / Unadilla River / Town	High	Infrastructure Systems	Medium	Town of Winfield	Moderate
274	Bridge - Sale Road / Br Unadilla River / Town	High	Infrastructure Systems	Medium	Town of Winfield	Moderate
289	Bridge - N Winfield Road / N Winfield Creek / County	High	Infrastructure Systems	Medium	Town of Winfield	Moderate
290	Bridge - N Winfield Road / N Winfield Creek / County	High	Infrastructure Systems	Medium	Town of Winfield	Moderate
294	Bridge - County Road 141 / No. Winfield Creek / County	High	Infrastructure Systems	Medium	Town of Winfield	Moderate
311	VFW Post 2338- George R. Pritchard	High	Infrastructure Systems	High	Town of Winfield	Moderate



Figure 5 - o. Assets at Risk in the Van Hornesville (Town of Stark)



Van Hornesville (Stark)
 Detail View of
 NYRCR Planning Area
 Herkimer County

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

15



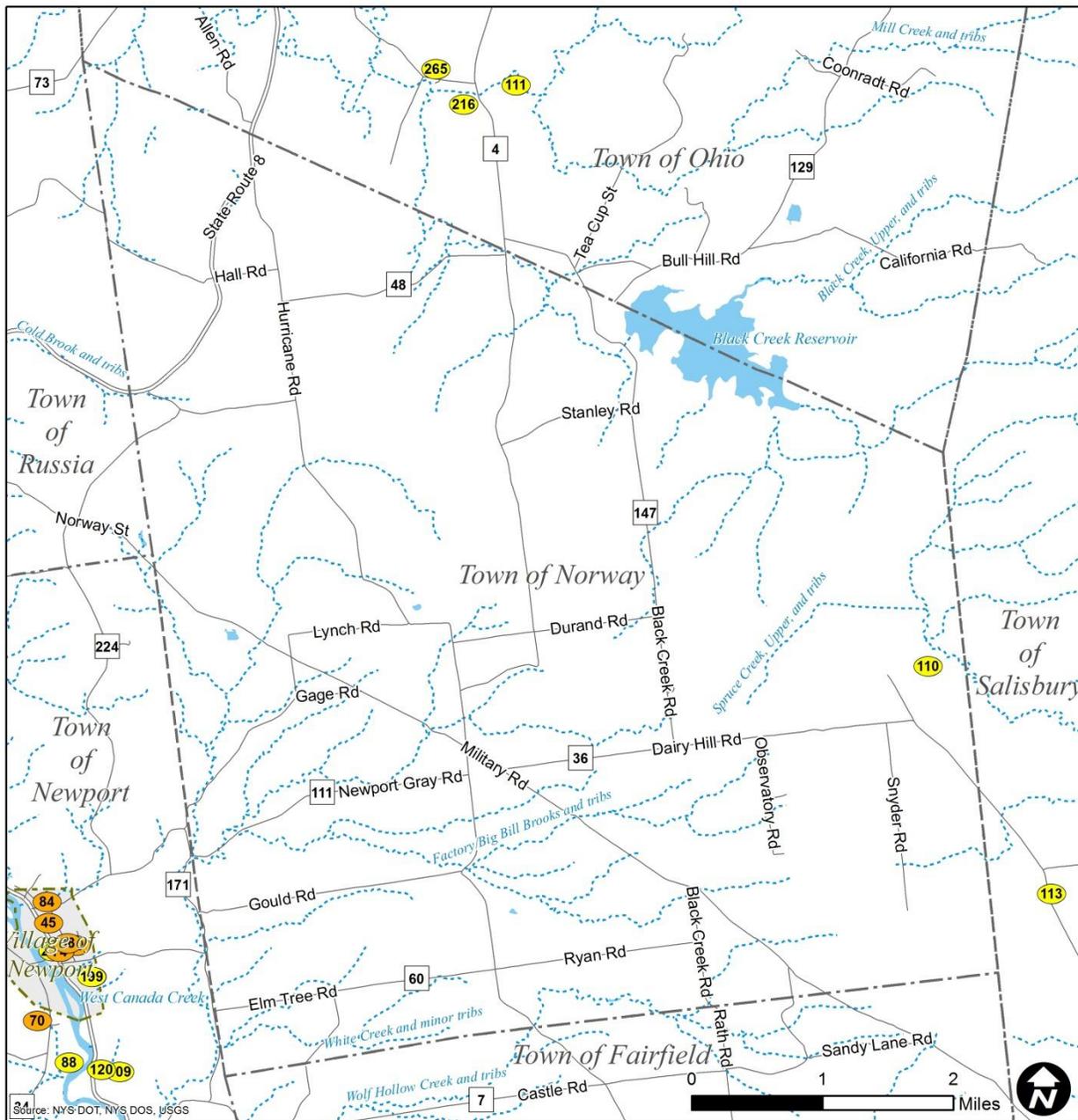


Table 47. Assets at Risk in the Van Hornesville (Town of Stark)

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
6	Owen D. Young Central School (Shelter)	Extreme	Health and Social Services	High	Town of Stark	High
7	Van Hornesville Fire Station - Stark Fire Department	Extreme	Health and Social Services	High	Town of Stark	High
54	Commercial Assets - Town of Stark	Extreme	Economic	Medium	Town of Stark	High
60	Residential Assets - Town of Stark	Extreme	Housing	High	Town of Stark	High
115	Residential Parcels - Town of Stark	High	Housing	High	Town of Stark	Moderate
165	Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of Stark	Moderate
166	Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of Stark	Moderate
167	Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of Stark	Moderate
168	Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of Stark	Moderate
169	Bridge - Route 80 / Otsquago Creek / NYSDOT	Extreme	Infrastructure Systems	High	Town of Stark	Moderate
172	Bridge - Route 168 / Otsquago Crk / NYSDOT	Extreme	Infrastructure Systems	High	Town of Stark	Moderate



Figure 5 - p. Assets at Risk in the Town of Norway



<p>Town of Norway Detail View of NYRCR Planning Area Herkimer County</p>	<p>Asset Risk Level</p> <ul style="list-style-type: none"> XX Severe Risk XX High Risk XX Moderate Risk XX Residual Risk 	<p>16</p>	
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Table 48. Assets at Risk in the Town of Norway

ID #	Asset Name	Risk Area	Asset Category	Community Value	Location	Risk Level
110	Residential Parcels - Town of Norway	High	Housing	High	Town of Norway	Moderate

Overall risk score classifications ranged from Residual Risk for assets such as the Electrical Substation in the Village of Herkimer to Severe Risk for the Lock E-18 Dam in Herkimer. Assets located along the Mohawk River or near the high risk creeks and tributaries (Moyer, Fulmer, Steele, etc.) generally scored in the High Risk range, with a few Severe Risk assets interspersed. About one quarter (26%) of the 320 inventoried assets scored in the High Risk range while nearly three quarters (72%) scored in the Moderate Risk range. This reflects the localized nature of flooding that most frequently occurs in the County, with those assets located near the creeks and tributaries at most risk of regular flooding. However, due to the historic prevalence of flooding, Committee members remarked that most residents and businesses are able to recover quickly after flood waters recede and are generally back in their homes within a week.

Assets by Recovery Support Function

Natural and Cultural Resources

Natural and cultural assets included churches and historic buildings and structures. All of the assets included in the risk assessment tool have a Moderate Level of risk. These assets received a low vulnerability score, indicating that they were not severely damaged by the summer 2013 storms and were able to recover immediately or very quickly.

Health and Social Services

Health and Social Service assets included schools, shelters, daycare facilities, post offices, governmental buildings, fire stations, and ambulance companies. Several of these assets have a High Risk level, including the Van Hornesville Fire Station and the Owen D. Young Central School. Other schools and facilities that received a High Risk score were located in the Extreme Risk zone and had a higher vulnerability score, indicating that it took more than a month for them to recover from the 2013 storms.

Infrastructure Assets

Infrastructure assets included bridges, dams, power supply facilities, drinking water wells, water treatment plants, and wastewater facilities. Three dams in Herkimer County (Lock 19, Lock E-18, and Lock E-16) are at a Severe Risk level, since they are located in the Extreme Risk zone and were out of service following the 2013 summer storms for more than one month and in some cases up to six months. Other High Risk assets included the Electrical Substation in the Village of Mohawk, Lock E-17 and several bridges that have been known to flood frequently or were washed out in previous storms. There were also several drinking water and wastewater facilities at High Risk, including the Mohawk Village drinking water treatment plant and wells, the Poland Village drinking water treatment plant and



wells, and the Herkimer County Wastewater Treatment Facility. The protection of these facilities during future flood events is critical to ensure a safe water supply and to avoid serious public health threats.

Housing Assets

Housing assets included residential parcels and housing facilities for vulnerable populations. Residential parcels within the Villages were overwhelming at a High Risk of flooding since in many cases homes are built up very close to the creeks and streams. Residential parcels outside of villages tended to be at Moderate Risk since they are located outside of the Extreme and High Risk zones. There are also several senior living facilities that were found to be at High Risk, which included the Campus Apts, Litchfield Manor, the London Towers Apts, and Streamside Manor. It is critical that these facilities are fully prepared for future flood events to be able to protect the vulnerable populations that live there.

Economic Assets

Economic assets included commercial parcels and major employers in Herkimer County. Commercial parcels within the Villages were overwhelming at a High Risk of flooding since in many cases commercial districts are located very close to the creeks and streams. Commercial parcels outside of villages tended to be at Moderate Risk since they are located outside of the Extreme and High Risk zones. The only major employer that was found to be at High Risk was Burrow's Paper in the City of Little Falls, which is located very close to the Mohawk River, most likely to benefit from hydroelectric power generation.

The scoring of these assets helped to inform, focus, and provide context for the projects considered by the NYRCR Committee. As will be described later in this report, many of these critical assets are addressed in the Recovery and Resiliency projects.



Section 3. Reconstruction and Resiliency Strategies



Crowley-Barnum American Legion Post 25, Village of Mohawk



Herkimer County NY Rising Countywide Resiliency Plan

The process of identifying the NY Rising Community Reconstruction (NYRCR) Herkimer County post-storm needs and opportunities informed the NYRCR Herkimer 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 or act on an opportunity. Typically, there are several strategies to address a given need or opportunity. Communities are most successful when they blend traditional stabilization and repair actions with a holistic, long-range, forward-looking view of recovery and economic development. 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 across multiple RSFs. Potential strategies span an array of methodologies and timeframes, from preparedness to retrofits, from immediate procedural improvements to long-range capital investment programs. Strategies may also include conservation or restoration of natural protective features, regulatory changes and building code updates, structural defenses, resilient retrofits, market measures, land use planning, and education and outreach. The goal is 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 general resiliency strategies evolved into specific projects and actions, several factors were considered so that Communities can prioritize the most cost effective and technically feasible strategies, and thus identify the highest and best use of recovery funds. These considerations included 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; the feasibility of a successful implementation; compliance with regulations; upfront and long-term maintenance costs; direct and indirect benefits; and public perception and support.



A. RECONSTRUCTION AND RESILIENCY STRATEGIES

Reconstruction and resiliency strategies 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.



Community Planning and Capacity Building

STRATEGY: Develop appropriate zoning and land use policies at the local level to manage the use of land in floodplains to reduce risk and susceptibility to flood damages

This strategy addresses the need for stronger regulation of development in the floodplain in many of the municipalities of Herkimer County. Due to a lack of local regulation, many homes and mobile home park communities have been allowed adjacent to creeks and streams that are known to flood, thus putting those structures at direct risk of flooding. Resources and expertise are available in the County, such as the Herkimer-Oneida Counties Comprehensive Planning Program, which could assist municipalities with the development of comprehensive master plans or land use regulations to limit development in the flood zone. The municipalities of Herkimer 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.

STRATEGY: Develop a multi-tiered system to alert emergency personnel and residents of flood events and to manage and communicate emergency-related information and resources

There is a need to improve communication during and immediately after emergencies. This need has several distinct components that deal with obtaining and disseminating real-time information on flooding events, utilizing various communication channels to inform citizens, and improving coordination among responding agencies and organizations following a disaster. By providing real-time information from stream gauges and the National Weather Service, Herkimer County can more quickly mobilize emergency responders to prepare for flood events and other natural disasters. Enhancing connections in regards to emergency response between nearby communities will improve regional response efforts since municipal resources are often times strained due to limited availability of volunteers, staff turnover, and shrinking budgets. Communication systems should be compatible between local emergency responders and state and federal agencies to ensure efficient communication during an emergency. Communication should also be via multiple means, such as email, texts, tweets, website updates and more.

STRATEGY: Centralize flood preparation and response efforts to foster regional cooperation in resolving flooding and related issues

The municipalities of Herkimer County would benefit from centralized flood preparation and response efforts. Many municipalities and emergency responders do not have the resources to adequately prepare for and respond to flooding emergencies. Coordinated communication is also lacking. Another important gap in the County's ability to respond to emergencies is the lack of County-wide asset data that is digitized and accessible during an emergency. It can be critically important during an emergency to be able to protect key infrastructure systems and assets in real-time. To improve this, the County should expand its geographic information system (GIS) data collection and make those data and analyses available to its local partners.



Herkimer County NY Rising Countywide Resiliency Plan

STRATEGY: Expand educational efforts geared towards residential and business property owners

The need to provide more information to property owners to help them before, during, and after floods is important. 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. 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. Public workshops and information sessions should be held periodically to provide such information.

Table 49. Community Planning and Capacity Building Strategies

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Develop appropriate zoning and land use policies at the local level to manage the use of land in floodplains to reduce risk and susceptibility to flood damages			
Develop Comprehensive Master Plans	RS 1 – a	Update or create Comprehensive Master Plans for the communities most at risk of flood damage	Less than \$500,000
Uniform Floodplain & Land Use Regulations	RS 1 – b	Develop uniform floodplain and land use regulations based on a watershed scale for consistency throughout watershed, upstream and downstream	Less than \$500,000
NFIP Community Rating System	RS 1 – c	Participate in the National Flood Insurance Program’s Community Rating System	Less than \$500,000
Enhance Educational Programs for Local Officials	RS 2 – a	Enhance and expand educational programs for local officials on floodplain regulations and enforcement needs	Less than \$500,000
Strategy: Develop a multi-tiered system to alert emergency personnel and residents of flood events and to manage and communicate emergency-related info and resources			
Install Stream Gauges & High Water Markers	RS 2 – b	Install stream gauges and high water markers along bridges in Bellinger Brook, Fulmer Creek, East Canada Creek, Moyer Creek, and Steele Creek	Less than \$500,000
Enhance Mohawk River Monitoring System	RS 2 – c	Enhance the monitoring system being put in place by the Canal Corporation along the Mohawk River; evaluate following installation	\$500,000 to \$1 million
Utilize Integrated Public Alert Warning System	RS 2 – d	Adopt and utilize FEMA’s Integrated Public Alert Warning System	Less than \$500,000
Enhance Emergency Services Website	RS 2 – e	Maintain and enhance the Herkimer County Office of Emergency Services website so that it can serve as a single point repository for web-based information	Less than \$500,000
Strategy: Centralize flood preparation and response efforts to foster regional cooperation in approaching flooding and related issues			
Shared Recovery Manager	RS 3 – a	Share recovery manager/grant writer with other area municipalities to secure and administer grants and implement recommendations of the NYRCR program	Less than \$500,000
Create a Flood Recovery Office	RS 3 – b	Develop a regional flood recovery and revitalization office	Less than \$500,000



Herkimer County NY Rising Countywide Resiliency Plan

Enhance Herkimer GIS Capacity	RS 3 – c	Support a designated staff member for Herkimer County to enhance and expand the existing geographic information system (GIS) capacity and data collection efforts; establish a central repository for disaster related GIS information and make accessible to departments participating in emergency response efforts	Less than \$500,000
Implement Outreach Campaign	RS 2 – f	Develop an outreach campaign to increase participation by municipalities, emergency responders, and the public in the Countywide Alert System which provides automatic messages (via various electronic means - e.g., text, email) to a voluntary contact registry	Less than \$500,000
Strategy: Expand educational efforts geared towards residential and business property owners			
Circulate Pre-Disaster Information	RS 2 – h	Circulate relevant pre-disaster information via flyers with municipal mailings	Less than \$500,000
Public Workshops & Information Sessions	RS 2 – i	Routinely schedule workshops and public information meetings on emergency preparedness	Less than \$500,000



Economic Development

STRATEGY: Support efforts and investments that encourage an employer’s ability to retain jobs and a municipality’s efforts to attract new businesses

Even before the 2013 summer flooding, the municipalities of Herkimer County were struggling economically. The County has experienced a loss of manufacturing jobs over time that has contributed to high unemployment rates. Additionally, flooding damage to businesses and farms resulted in economic losses due to closures, crop loss, and the costs of repairs and rebuilding. This strategy aims to support municipal efforts and investments that encourage or incentivize businesses to remain in the County and retain existing jobs. Herkimer County municipalities, the County itself, and business organizations are engaged in efforts to attract new businesses to the area. Those efforts should be expanded.

STRATEGY: Reduce overlapping municipal jurisdictions and governmental fragmentation that contributes to governmental inefficiency

One of the key strategies of the Mohawk Valley Regional Economic Development Council 2011 Strategic Plan is *to strengthen government and civic effectiveness*. That recommendation is meant to reduce the layers of government and promote its efficiency, thus reducing barriers to economic development. Herkimer County has 19 towns, 10 villages, one city, and a county level government. Government efficiency could be increased by sharing certain services and by consolidating departments and special districts or even municipalities. Improving government efficiency could create a business climate that promotes entrepreneurship and attracts investment capital to the region.

STRATEGY: Enhance the resiliency and visual character of downtowns

This strategy recognizes Herkimer County’s recovery from the summer 2013 flooding as an opportunity to build back better. 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 the City of Little Falls. The Mohawk Valley Regional Economic Development Council stated that one of the weaknesses of the Mohawk Valley is that downtowns and central business districts lack vibrancy and economic activity. The same holds true for many of the communities of Herkimer County. The downtown centers are underutilized and undervalued, with many storefronts vacant. Through this strategy, the County 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.



Herkimer County NY Rising Countywide Resiliency Plan

STRATEGY: Preserve and build upon abundant natural and cultural resources

One of Herkimer County's strengths is its abundant natural and cultural resources. Those resources include year-round tourism destinations, such as the Adirondack Mountains, the Canal Recreationway trail, a large number of historical sites, and scenic hiking and camping. These resources can attract more tourists and economic development to the area. This strategy promotes economic vitality, tourism, and recreational opportunities that serve the residents of Herkimer 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 50. Economic Development Strategies

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Support efforts and investments that encourage an employer's ability to retain jobs or attract new businesses			
Develop Industrial & Business Parks	RS 4 – a	Develop business and industrial parks in the Towns of Schuyler, Danube, German Flatts, Little Falls, and Manheim as recommended by the Mohawk Valley Economic Development District	Over \$5 million
Build an Event Center & Business Park at HCCC	RS 4 – b	Develop an event center and business park at Herkimer County Community College (HCCC) as recommended by the Mohawk Valley Economic Development District	Over \$15 million
Develop Route 167 Retail Park in Little Falls	RS 4 – c	Develop the Route 167 Retail Park in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	\$1 million
Improve Access to Industrial Park	RS 4 – d	Improve access routes to the Industrial Park in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	\$500,000 to \$1 million
Expand Healthcare Initiative at HCCC	RS 4 – e	Expand the Growing Healthcare Initiative at the Herkimer County Community College (HCCC)	Over \$1 million
Create Pop-Up Store Incentive Program	RE 4 – f	Develop an incentive program for pop-up stores where retailers can lease space for a short time to test retail concepts without the risk of a long-term lease	Less than \$500,000
Redevelop the Village of Frankfort Brownfield	RS 5 – a	Implement recommendations from the Pre-Nomination brownfield redevelopment study completed for an approximately 470-acre area located along Main Street and the Mohawk River in the Village of Frankfort	Over \$1 million
New Sewer & Water Lines to Support Housing Development	RS 5 – b	Construct new water and sewer lines in the Towns of Frankfort, Schuyler, and Newport to support a new housing development as recommended by the Mohawk Valley Economic Development District	Over \$1 million
Integrate Smart Growth Infrastructure	RS 5 – c	Integrate Smart Growth and green infrastructure into downtowns and waterfront revitalization efforts	\$500,000 to \$1 million
Strategy: Reduce overlapping municipal jurisdictions and governmental fragmentation that contributes to governmental inefficiency			
Shared Services	RS 4 – g	Evaluate potential for shared services and municipal consolidation	Less than \$500,000
State Efficiency Grants	RS 4 – h	Utilize state government efficiency grant for evaluation and implementation	Less than \$500,000



Herkimer County NY Rising Countywide Resiliency Plan

Strategy: Enhance the resiliency and visual character of downtowns			
Protect Main Street Business Areas	RS 4 – j	Relocate or flood proof Main Street and downtown businesses in high risk areas	Over \$1 million
West Mill/Elizabeth Street Redevelopment Project	RS 5 – d	Implement the West Mill/Elizabeth Street redevelopment project in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	\$3 million
Strategy: Preserve and build upon abundant natural, cultural and geographical resources			
Regional Snowmobile Center	RS 4 – i	Develop and construct a regional snowmobile center in the Town of Ohio as recommended by the Mohawk Valley Economic Development District	Over \$1 million
Herkimer County Tourist Map	RS 4 – k	Develop a Herkimer County specific map with coordinated way finding and signage for waterway tourist destinations	Less than \$500,000
Develop Marketing Plan	RS 4 – l	Develop a plan to market the area to outdoor enthusiasts and heritage tourists	Less than \$500,000
Implement Marina Project in the Village of Frankfort	RS 5 – e	Implement the marina project in the Village of Frankfort to enhance recreational and economic opportunities near the waterfront as recommended by the Mohawk Valley Economic Development District	\$500,000 to \$1 million
Preserve Historic Structures	RS 5 – f	Develop plan to preserve and re-purpose historic structures	Less than \$500,000
Develop Greenway Trail	RS 14 – a	Develop and implement a greenway trail in the Town of Salisbury and the Village of Dolgeville as recommended by the Mohawk Valley Economic Development District	\$500,000 to \$1 million
Develop Waterfront Trail	RS 14 – b	Implement a waterfront trail system in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	\$800,000
Complete Canal Recreationway Trail	RS 14 – c	Implement the Canal Recreationway trail plan to create a continuous trail from the City of Little Falls east to Utica	Over \$5 million
Develop Bike & Pedestrian Trail Spurs from the Canal Recreationway Trail	RS 14 – d	Plan and implement bike and pedestrian trail spurs off of the Canalway Trail that follow the Mohawk River tributaries to increase tourism and recreational opportunities	\$500,000 to \$1 million



Health and Social Services

STRATEGY: Develop a plan to ensure emergency services for vulnerable populations, including provision of medical supplies and temporary housing

As the demographics analysis revealed, Herkimer County has an aging population, with 29 senior housing facilities located throughout the County. The senior population, as well as other populations such as migrant farm workers, persons with disabilities, and the Amish community, represents potentially vulnerable populations. These groups may require special attention or have critical medical needs that need to be addressed during an emergency. This strategy aims at developing a plan to make sure that the appropriate and necessary emergency services are available and accessible to vulnerable populations.

STRATEGY: Work with Town of German Flatts and Herkimer County Community College to provide emergency shelter

This strategy is aimed at increasing the availability and accessibility of emergency shelters for County residents. Many residents did not leave their homes during the summer 2013 flooding, as many primary and secondary roads were flooded and the nearest shelter could be miles away. Expanding emergency shelter options would help protect residents during and after a storm event or other disasters. It would be especially valuable to the more vulnerable residents of the Community that have few sheltering options during an emergency. Due to the large geographic size of Herkimer County, several shelter options need to be available to residents that will meet critical needs during a disaster, including the provision of emergency housing, distribution of food, water, and other supplies, and the dissemination of information. These facilities also need to have emergency back-up power generation and several points of entry, since road flooding has been a major issue in previous storms. The new emergency shelter being constructed in the Town of German Flatts could help meet this need for those communities south of the Mohawk River. Herkimer County Community College has also been identified as a suitable emergency shelter location, due to its high elevation and large space. It needs to have adequate emergency back-up power as well as a safe access route that will not flood during a storm.

STRATEGY: Evaluate feasibility of elevating or re-aligning roads prone to flooding, especially along critical transportation routes

Road and bridge flooding was a major issue during the 2013 summer flood event. It prevented emergency responders from being able to evacuate residents in flooded areas and residents from being able to reach emergency shelters and services. The Committee made it clear that it is critically important to ensure road access to healthcare and social service facilities in the event of an emergency by ensuring that critical transportation routes are not at risk of flooding. There is a need to evaluate routes surrounding critical healthcare and social service facilities to determine the actions necessary to provide access during emergencies.



Herkimer County NY Rising Countywide Resiliency Plan

Table 51. Health and Social Service Strategies

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Develop a plan to ensure emergency services for vulnerable populations, including provision of medical supplies and temporary housing			
Enhance Vulnerable Population Registry	RS 6 – a	Update and enhance existing vulnerable population registry maintained by the Herkimer County Office of Aging. Develop public relations campaign to increase participation in the registry. Convert registry into a GIS database to enhance response efforts during an emergency	Less than \$500,000
Emergency Preparedness Plans for Vulnerable Population Housing Facilities	RS 6 – b	Enact mandate requiring nursing homes and other vulnerable population housing facilities to submit their emergency response plans to the Herkimer County Department of Health and the County Office of Emergency Services for review to ensure that the County has adequate sheltering capacity for persons with special medical needs and is fully prepared for any outstanding health issues	Less than \$500,000
Develop Outreach Materials for Vulnerable Populations	RS 6 – c	Develop culturally appropriate outreach materials and outreach campaign for hard-to-reach vulnerable populations, such as migrant and seasonal farm workers that may not speak English and Amish populations	Less than \$500,000
Support Volunteer and Non-profit Organizations	RS 6 – d	Continue to share resources with Herkimer-Oneida Organizations Active in Disasters (HOOAD), Catholic Charities, and others during and following disasters	Less than \$500,000
Strategy: Work with Town of German Flatts and Herkimer County Community College to provide emergency shelter			
Utilize Town of German Flatts New Emergency Shelter	RS 7 – a	Utilize the new Town of German Flatts emergency shelter that is currently under construction to increase shelter capacity for vulnerable populations and purchase back-up generator to ensure continued operations during an emergency	Less than \$500,000
Register Shelters	RS 7 – b	Register all shelters in the County of Herkimer with the National Storm Shelter Registry (http://www.nssr.info/) to ensure that the Herkimer County of Emergency Operations is aware of all possible shelters and can share that information with the public	Less than \$500,000
Develop Plan to Use HCCC as Emergency Shelter	RS 7 – c	Develop and implement a plan to use Herkimer County Community College as an emergency shelter. Include improvements to ensure consistent road access to the College and back-up power generation	\$500,000 to \$1 million
Strategy: Evaluate feasibility of elevating or re-aligning roads prone to flooding, especially along critical transportation routes			
Flood Evaluation for Critical Roadways	RS 8 – a	Conduct flood evaluation for roadways in close proximity to healthcare facilities as well as emergency operation facilities and determine alternate routes of access or implement mitigation strategies to reduce flooding on roadways	\$500,000 to \$1 million
Identify and Map Areas Isolated by Flooding	RS 8 – b	Identification and mapping of areas which cannot be reached during a storm to develop plans to address residents and Community assets that may become isolated during flooding; and contingency routes for evacuation	Less than \$500,000



Housing

STRATEGY: Increase the resiliency of the housing stock by increasing housing in downtowns and outside of flood zones and acquiring at-risk properties to reduce flood losses and spur revitalization

The impacts of the summer 2013 flooding highlighted the need for more resilient and diverse housing stock within the County. This strategy would reduce risk for residents of the County 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. This strategy is related to the community planning and capacity building strategy to develop zoning and land use policies to manage development in the floodplains to reduce risk and susceptibility to flood damages. 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.

Table 52. Housing Strategies

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Increase the resiliency of the housing stock by increasing housing in downtowns and outside of flood zones and acquiring at-risk properties to reduce flood losses and spur revitalization			
Leatherstocking Trailer Park Property Recovery Project	RC 11	Acquire the Leatherstocking Trailer Park property in the Town of German Flatts, remove damaged structures and restore a more natural floodplain for Fulmer Creek	\$340,000
Acquire Condemned or Foreclosed Homes Outside of Floodplain	RS 9 – a	Work with various state and federal agencies and financial institutions to acquire condemned or foreclosed homes outside the floodplain for rehabilitation and low-cost sale to relocated and income qualified residents	More than \$1 million
NFIP Enforcement	RS 9 – b	Develop a working agreement with the appropriate state agency to assume responsibilities for enforcement of the National Flood Insurance Program (NFIP) due to lack of capacity at local level	Less than \$500,000
Coordinate Housing Assistance	RS 9 – c	Coordinate state, federal and private disaster assistance for housing needs	Less than \$500,000
Provide Diverse Housing Options	RS 9 – d	Incentivize projects that would undertake housing rehabilitation or new housing to provide diversity of housing types and costs	\$500,000 to \$1 million
Improve Buy-out Programs	RS 9 – e	Initiate meetings with state and federal representatives to review and redraft policies and/or develop new programs to improve state and federal buy-out programs that will: lessen overly restrictive eligibility criteria; reduce costs to local governments for participation and property maintenance; and encourage voluntary residential and business owner participation	Less than \$500,000



Infrastructure

STRATEGY: Invest in key infrastructure facilities and systems to promote economic and ecological sustainability

During the summer 2013 flooding, critical infrastructure systems, such as electrical substations, storm sewers, drinking water treatment facilities, and road networks, experienced significant flooding and damage. Many of these systems have yet to be made more resilient and remain threatened by future flooding since they are located within the 100 year flood zone. The Committee identified the need to repair and protect the infrastructure that services its existing residents and businesses and is vital to economic growth. The Committee emphasized the need to reduce the cost of electrical power generation by installing alternative energy sources, since high energy costs are perceived as a barrier to economic investment in the region.

Table 53. Infrastructure Strategies

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Invest in key infrastructure facilities and systems to promote economic and ecological sustainability			
Poland Washout Water Transmission Line Repair	RC 1	Repair washout that exposed the water transmission line for the Village of Herkimer	Total: \$514,251; FEMA: \$385,688; NYRCR: \$128,563
Newport-Gray Road and Stream Bank Protection	RC 2	Install stacked and pinned stone along the streambank that forms the shoulder and clear zone of Newport-Gray Road in the Town of Norway	\$50,000
Culvert Repair for Access to Road to Water Holding Tank	RC 4	Repair the collapsed culvert pipe along Joslin Road in the Town of Frankfort to ensure continued access to a water holding tank	\$10,454
East German Street Extension Repair	RC 5	Repair the bank supporting the East German Street Extension, Town of Herkimer	Total: \$567,993; FEMA: \$425,995; NYRCR: \$141,998
Substation Repairs and Hardening	RC 7	Modify Village of Mohawk electrical substation to protect it from flooding	Total: \$5.5 million; FEMA: \$4.3 million; NYRCR:\$1.2 million
Timmerman Road Ditch Repair	RC 13	Repair the ditch along Timmerman Road in the Town of Manheim	\$264,000
Creek Road Stream Bank Stabilization	RC 14	Install stacked and pinned stone along streambank on Creek Road in Town of Danube	\$100,000
Gulf Road Bank Repairs and Stabilization	RC 15	Install stacked and pinned stone along five different locations on Gulf Road in the Town of Winfield	\$300,000
GIS Infrastructure Mapping	RS 3 –d	Undertake detailed GIS mapping of infrastructure including component features	Less than \$500,000



Herkimer County NY Rising Countywide Resiliency Plan

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Invest in key infrastructure facilities and systems to promote economic and ecological sustainability			
Investigate Utility Infrastructure at Highest Risk of Flooding	RS 10 – a	Investigate where utility infrastructure is most at risk from flooding damage and encourage the utilities to protect or relocate utility lines most at risk of failure, collapse or breakage	Less than \$500,000
Back-up Power Generation	RS 10 – b	Provide critical facilities with backup power generation	\$500,000 to \$1 million
Evaluate Opportunities to Expand Hydropower Generation	RS 10 – c	Undertake engineering feasibility studies for micro-hydropower generation and flood flow attenuation on high risk streams	Less than \$500,000
Investigate Opportunities for Renewable Energy	RS 10 – d	Investigate the use of renewable energy (such as wind turbines) to serve as alternative sources of energy during and after storms	Less than \$500,000
Investigate Opportunities for Solar Photovoltaic Systems	RS 10 – e	Evaluate feasibility of municipal- and community-owned solar photovoltaic systems	Less than \$500,000
Expand Northland Communications Project	RS 10 – f	Expand the Northland Communications project to increase broadband internet access	Over \$1 million
Increase Resilience of the Village of Mohawk Drinking Water Supply	RS 11 – a	Identify and develop supplemental water supply location for Village of Mohawk, which could increase resiliency, increase capacity, and attract new business and residential development. Additionally, raise the existing water supply and water treatment plant above base flood elevation	Over \$1 million
Repair Drainage System in the City of Little Falls Drainage Park	RS 11 – b	Perform repairs to the Industrial Park Creek drainage system in the City of Little Falls	\$150,000
Upgrade East Herkimer Wastewater Treatment Facility	RS 11 – c	Upgrade the East Herkimer Wastewater Treatment Plan and install sewer extension	Over \$1 million
Improve Acme Road Drainage	RS 11 – d	Repair Acme Road drainage in the Village/Town of Frankfort	\$500,000 to \$1 million
Repair Culverts in the City of Little Falls	RS 11 – e	Repair or replace culverts at Smith Street, Frederick Creek, and Carden Creek in City of Little Falls. Identify roads at high risk for closure and alternate routes of access	\$320,000
Stormwater Management along Lou Ambers Drive	RS 11 – f	Reconstruct Lou Ambers Drive between West German Street and Johnson Avenue in the Village of Herkimer with a new box culvert that will be constructed to convey the flow of an unnamed tributary of Bellinger Brook	\$1.4 million
Maple Avenue Bridge Removal	RS 12 – a	In Herkimer Village, remove the Maple Grove Avenue Bridge and convert the road to a cul-de-sac	\$500,000 to \$1 million
Replace Undersized Bridges	RS 12 – b	In Herkimer Village, replace the West German and Church Street bridges with new 45-foot minimum span bridges	Over \$5 million



Herkimer County NY Rising Countywide Resiliency Plan

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Invest in key infrastructure facilities and systems to promote economic and ecological sustainability			
Replace Fairfield Bridge	RS 12 – c	Replace Fairfield Street bridge (Route 29) as it crosses over Maltanner Creek with a wider span and a flatter more appropriately armored channel to reduce water velocities and limit erosive forces	\$1 million to \$5 million
Replace Route 28 Bridge	RS 12 – d	Replace the Main Street (Route 28) bridge in Middleville as it passes over Maltanner Creek with a wider structure, a lower bed and appropriate bed roughening to reduce flood risk in the village	\$1 million to \$5 million
Evaluate Bridge Replacement in the Village of Ilion	RS 12 – e	Assess feasibility for replacement/resizing of the Otsego Street, Third Street, Second Street and Main Street bridges along Steele Creek in the Village of Ilion	Feasibility: Less than \$500,000; Implementation Over \$5 million
Dockey Road Bridge Replacement	RS 12 – f	Replace the Dockey Road (County Route 42) bridge, Town of Manheim	\$1 million
Steele Creek Comprehensive Flood Mitigation Strategy	RS 13 –a	Evaluate feasibility of a comprehensive flood mitigation approach along Steele Creek near and upstream from the existing concrete dam, “The Falls,” which may include removal of the dam, multiple bridge replacements or removals, property acquisition, and channel resizing	Feasibility: Less than \$500,000; Implementation Over \$5 million



Natural and Cultural Resources

STRATEGY: Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses

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 and dredging of the high risk streams to reduce flood risk as well as a coordinated stormwater management strategy for the County. Additionally, the Committee recognized the opportunity to increase resiliency through green infrastructure projects that detain, retain, and treat stormwater. Buy-out and removal of structures in the flood zone was also seen as an important strategy for increasing creek capacity during flood events.

STRATEGY: Identify, enhance, and expand opens space and recreational opportunities, such as walking/biking trails and fishing access points along streams and rivers

This strategy promotes economic vitality, tourism, recreation, quality of life, and public health. It would expand recreational opportunities for residents and improve economic resilience by attracting visitors and tourists. This strategy is part of a broader approach to expand open space along the creeks and streams to reduce flood risk and to stimulate an eco-tourism economy to create business opportunities tied to the water. Those businesses could include kayak and bicycle rentals, eco-guides, bed and breakfasts, fishing suppliers, and other businesses that support vacationers and second home owners. The open space strategy is intricately tied to the economic development strategy for commercial district redevelopment and to the strategy to build upon abundant natural, cultural, and geographical resources. All of these strategies connect economically and ecologically as each supports the success of the other. Economically viable, prosperous communities are more resilient to the impacts of storms as they can quickly deploy capital and other resources. The strategy will also increase social interaction and recreational opportunities for the Herkimer County as a whole.

Two projects below are essential to complete the Canal Recreationway Trail along the Erie Canal through Herkimer County, which would connect the City of Little Falls on the eastern side of Herkimer County to Utica in Oneida County to the west via bike/walking trail. The projects are local, but have important regional implications in that the Canal trail it connects to is a statewide trail.



Herkimer County NY Rising Countywide Resiliency Plan

Table 54. Natural and Cultural Resource Strategies

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses			
Lehman Park Embankment Repair	RC 3	Repair the bank failure near Lehman Park in the Village of Frankfort	Total: \$860,000 FEMA: \$645,000, NYRCR: \$215,000
Bellinger Creek Repairs	RC 6	Make Bellinger Creek repairs downstream of Brookwood Park in the Village of Herkimer	Total: \$2,193,893, FEMA: \$298,893, Local: \$1.895 million
Fulmer Creek Rehabilitation	RC 8	Perform feasibility study on Fulmer Creek to assess restoration opportunities within the Village of Mohawk and perform streambank stabilization	Less than \$500,000
Slip Bank Repair near former Wilkerson Property	RC 9	Repair bank failure along Fulmer Creek between the two bridges on Route 168 (formerly the Wilkerson property) in the Town of German Flatts	\$1.15 million
Left Bank Stabilization near Creekside Trailer Park Property	RC 10	Stabilize eroded bank along Fulmer Creek near the Creekside Trailer Park in the Town of German Flatts	\$300,000
Debris Removal and Stabilization of Cemetery Creek Headwaters	RC 12	Stabilize streambank and perform necessary debris removal within Cemetery Creek in the City of Little Falls	\$400,000
Establish Inter-municipal Drainage Districts	RS 1 –d	Establish an inter-municipal drainage district to address stormwater management and watershed issues from their source to their discharge	Less than \$500,000
Implement Green Infrastructure Pilot Project at HCCC	RS 11 – g	Work with Herkimer County Community College to install a demonstration green infrastructure project on campus to reduce stormwater runoff	Less than \$500,000
Promote Green Infrastructure	RS 11 – h	Promote utilization of green infrastructure for parking facilities, and business district improvements	Less than \$500,000
Improve Water Management from Hinckley Reservoir	RS 11 – i	Leverage existing partnerships with the NYS Canal Corporation to begin a dialogue regarding the management of water releases from the Hinckley Reservoir	Less than \$500,000
Develop Maintenance Dredging Guidelines that Includes Streambank Stabilization	RS 13 – b	Develop maintenance dredging guidelines and apply for renewable maintenance dredging permits from NYS DEC for sensitive areas within the major creek and stream systems	Less than \$500,000
Remove Sediment from East Canada Creek	RS 13 – c	Regularly remove sediment from East Canada Creek along Saltsman Road to reduce risk of flooding to the road, Town of Manheim	Less than \$500,000
Evaluate Sediment Control Dam along Maltanner Creek	RS 13 – d	Evaluate the feasibility of constructing a sediment control dam for the upper portions of Maltanner Creek, Town of Fairfield	Less than \$500,000



Herkimer County NY Rising Countywide Resiliency Plan

Project/Action Name	Project ID	Description	Cost Estimate
Strategy: Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses			
Develop Maintenance Program for West Canada & Maltanner Creeks	RS 13 – e	Develop a stream repair and maintenance program for the West Canada and Maltanner Creeks that incorporates monitoring of bank failures	Less than \$500,000
Remove Cobble Bar, West Canada Creek	RS 13 – f	Remove cobble bar from the West Canada Creek at Bridge Street (Route 28) in Middleville	Less than \$500,000
Construct Low Flow Channels	RS 13 – g	Construct low-flow channels or v-notches within other streams to reduce risk of ice jams, lower water levels, and increase capacity	Less than \$500,000
Repair Stream Bank Erosion, Fulmer Creek	RS 13 – h	Repair stream bank erosion along Fulmer Creek near Route 168 and Mortz Road in the Town of German Flatts	Less than \$500,000
Stabilize Retaining Wall, Town of Frankfort	RS 13 – i	Repair and improve the retaining wall on the east bank of Moyer Creek near the Edgewood Trailer Park in the Town of Frankfort to ensure structural integrity and protect residences	\$500,000 to \$1 million
Stabilize Nowadaga Creek	RS 13 – j	Stabilize the bank along approximately 200 feet of the Nowadaga Creek (between STA 142+00 and 103+00) and clean sediment and woody debris from channel	Less than \$500,000
Relocate Town of Danube DPW Facility	RS 13 – k	Move the Town of Danube Department of Public Works shed and stockpiled materials away from the Nowadaga Creek, stabilize the Creek in this area and re-establish a floodplain on the right bank to mitigate ongoing erosion	\$500,000 to \$1 million
Modify Operations at the Daniel Green Company Dam	RS 13 – l	Evaluate the feasibility of modifying operations at the Daniel Green Company Dam in Dolgeville in order to reduce water levels behind the dam by opening a low-flow outlet	Less than \$500,000
Modify Operations at the Dolgeville Hydroelectric Dam	RS 13 – m	Evaluate the feasibility of modifying operations at the Dolgeville Hydroelectric Dam to reduce the risk of ice jams and flooding	Less than \$500,000
Strategy: Identify, enhance and expand opens space and recreational opportunities, such as walking/biking trails and fishing access points along streams and rivers			
GIS Inventory of Open Space	RS 3 – e	Perform GIS inventory of county open space to identify opportunities for natural, recreational, and commercial uses	Less than \$500,000
Acquire Land near Frankfort Harbor	RS 14 – e	Evaluate feasibility of the public acquisition of land adjacent to and west of the Frankfort Harbor site to be used as an open space and recreation area, Village of Frankfort	Less than \$500,000
Acquire Land near Confluence of Steele Creek and Mohawk River	RS 14 – f	Evaluate feasibility of the public acquisition of land near the confluence of Steele Creek and the Mohawk River in the Village of Ilion to be used as an open space and recreation area	Less than \$500,000



Section 4. Implementation - Project Profiles



Belling Brook, Village of Herkimer



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 Herkimer’s NYRCR Committee. These projects are needed to repair what was damaged during the June 2013 storms and the previous years’ hurricanes. 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 Herkimer County. Recovery projects defined early in the planning process by the Committee have been updated in this document with new information and more details. The Recovery projects are those that the Planning Committee identified for the \$3 million that the New York Office of Storm Recovery has allotted for Herkimer County.

After the NYRCR Planning Committee identified the Recovery Projects, they developed a set of strategies 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 each proposed recovery and resiliency project identified by the NYRCR Planning Committee and Herkimer County. While developing projects and actions for inclusion in the NYRCR Plan, the Planning Committee took into account cost estimates, cost-benefit analyses, the effectiveness of each project in reducing risk to populations and critical assets, feasibility, and community support. Recovery projects are labeled RC 1 through RC 15 and Resiliency Projects are labeled RS 1 through RS 14. Project numbers are not based on priority ranking.



A. PROPOSED RECOVERY PROJECTS



Moyer Creek, Village of Frankfort



RC 1. Poland Washout Water Transmission Line Repair – Village of Herkimer

Project Description

The summer 2013 flooding washed out and eroded the soil and infrastructure protecting a major water transmission line that serves the Village of Herkimer. The water line originates from a reservoir in Gravesville, NY, travelling adjacent to the Village of Poland and the West Canada Creek as it enters Herkimer County, and travels to the Village of Herkimer for usage. During the 2013 flood event, several cracks in the transmission line developed, causing leaks that undermined soil stability, which in combination with flooding from the West Canada Creek, washed out soil and created a massive hole near the transmission line as it passes adjacent to the Village of Poland. The Village of Herkimer lost potable water directly following the flood event but the transmission line was quickly stabilized and potable water was restored. However, the hole created by the washout threatens the long-term stability and integrity of the water transmission line. This project aims to repair and fill the washout by obtaining gravel from the Ozog pit, building an access road, filling the erosion area, installing an erosion blanket and fence, and replacing 800 linear feet of transmission line that has been compromised. The project would take place in the Village of Poland and the Town of Newport along the West Canada Creek (see Figure 6).

Strategies

The strategy that this project will help advance is: “Invest in key infrastructure facilities and systems to promote economic and ecological sustainability.”

Poland Washout Water Transmission Line Repair

Recovery Support Function:
Infrastructure

Estimated Cost: Total: \$514,251; FEMA share: \$386,688; Local share: \$128,563

Assets Made More Resilient:
Herkimer Village Water Transmission Line

Risk Reduction & Benefits:
Ensure potable water in the hamlet of East Herkimer and Village of Herkimer

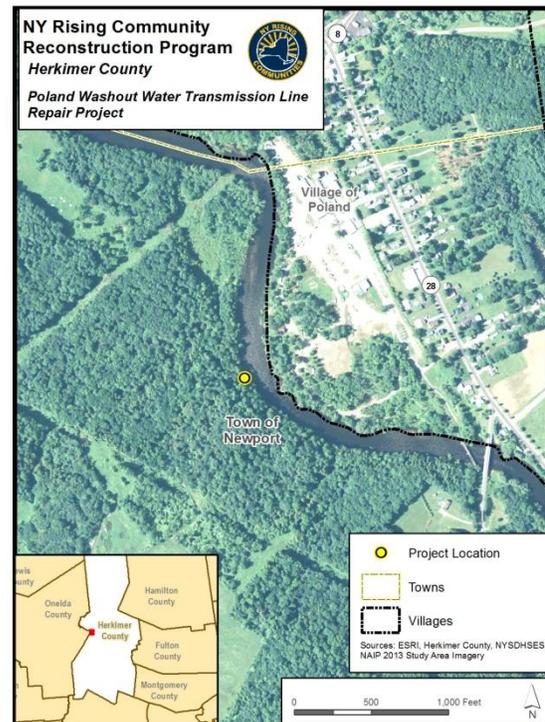


Figure 6. Location of Poland Washout Project



Estimated Project Costs

The total estimated cost of the project is \$514,251, which was estimated using the assumptions outlined in the table below. Cost estimates were provided by the Village of Herkimer and include the cost of labor. The Village of Herkimer has submitted an application to FEMA for funding of this project but does not foresee this project being approved due to the difficult nature of proving that it was the result of the 2013 flooding. If approved by FEMA, \$386,688 would be covered by FEMA and \$128,563 would be requested from the NY Rising program. If not approved by FEMA, the Village would be seeking the total project cost of \$514,251.

Description	Cost/Unit	Units	Cost Estimate
Cost of easement & access to the site	\$1	Lump sum	\$1.00
Bank run gravel from Ozog pit	\$6.25	15,000 cubic yards	\$93,750
Building access road and filling erosion area	\$6.50	15,000 cubic yard	\$97,500
Erosion blanket in place	\$10.00	8,000 square feet	\$80,000
Erosion control fence	\$2.00	2,000 linear feet	\$4,000
Survey – topo and easement	\$10,000	Lump sum	\$10,000
Soils report	\$15,000	Lump sum	\$15,000
Engineering	\$40,000	Lump sum	\$40,000
Transmission Line	\$75	800 linear feet	\$60,000
Subtotal			\$454,251
Contingency		Lump sum	\$60,000
Total			\$514,251

Potential Funding Source

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- U.S. Environmental Protection Agency Drinking Water State Revolving Fund
- Federal Emergency Management Agency Hazard Mitigation Grant Funding¹

Project Benefits

The project, once implemented, would avert a catastrophic event that could leave approximately 9,000 people in the Village of Herkimer and the hamlet of East Herkimer without potable water. The project also protects the transmission line from future storm events. The completion of the project ensures that the residents will have a resilient and reliable source of potable water.

¹ A full description of available funding sources is listed in Section VI – B.



Cost Benefit Analysis

The failure or collapse of the water transmission line poses a dangerous threat for the Village of Herkimer, which is reliant on this utility for potable water. The potential cost of fixing the line if there was another collapse in the future and providing potable water for the Village far outweighs the cost of this project.

Risk Reduction Analysis

Repairing the water line ensures that the primary water transmission line to the Village of Herkimer is no longer in threat of failure or collapse. By stabilizing the area surrounding the water transmission line, the Village would decrease the risk of losing potable water in the event of future extreme weather events. This project reduces the vulnerability of this critical infrastructure asset making it less likely to fail in future flooding events.

General Timeframe for Implementation

This project could be implemented and completed immediately once funding is available. The immediate completion of this project is a high priority.

General Status of Project

The Village of Herkimer has already secured an engineering contract, the required regulatory permits, and a signed agreement with a private property owner to allow the project.

Anticipated Project Lead

Village of Herkimer



(Above) Water Transmission Line in Poland, NY (Below) Site of washout





RC 2. Newport-Gray Road and Stream Bank Protection – Town of Norway

Project Description

The 2013 summer flood caused severe erosion to the northerly bank of White Creek, a tributary to West Canada Creek, located in the Mohawk River Basin. White Creek flows alongside Newport-Gray Road, where channel migration and exposed soils are compromising the integrity of the County road. This project would involve the installation of approximately 150 linear feet of stacked and pinned stone along the stream bank which forms the shoulder and clear zone of Newport-Gray Road (County Route 111) in the Town of Norway. A guiderail would also be installed in the project area.

Newport-Gray Road and Stream Bank Protection

Recovery Support Function:

Infrastructure

Estimated Cost: \$50,000

Assets made more Resilient:

Newport-Gray Road; White Creek

Risk Reduction & Benefits:

Increase resiliency of Newport-Gray Road; reduce risk of failure in future flood events; Reduce sediment load into White Creek

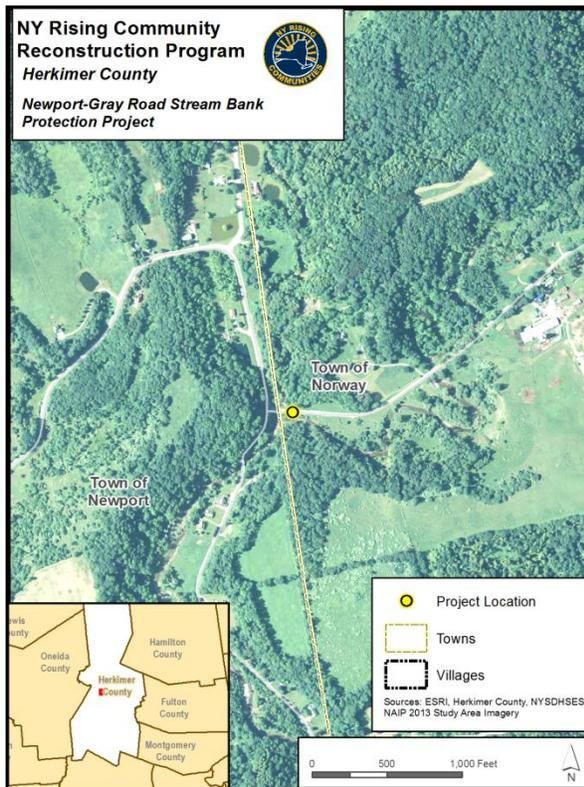


Figure 7. Location of Newport-Gray Road and Stream Bank Protection Project

Strategies

The strategy that this project will help advance is: “Invest in key infrastructure facilities and systems to promote economic and ecological sustainability.”

Estimated Project Costs

The total cost of the project is estimated at \$50,000, which would include engineering, construction and inspection costs. The estimated project cost was provided by the Herkimer County Highway Department. Contract documents would be developed by the Herkimer County Highway Department.



Potential Funding Sources

There are several potential state funding sources that could fund this project, including:

- NY Rising Community Reconstruction Program
- NYS Environmental Facilities Corporation Clean Water State Revolving Fund (CWSRF)
- Environmental Facilities Corporation (EFC) Green Innovation Grant Program (GIGP)
- NYS Research and Development Authority (NYSERDA) Cleaner, Greener Communities Program
- Empire State Development (ESD) Environmental Investment Program (EIP)

Project Benefits

Implementation of the project would ensure the future safety and stability of Newport-Gray Road. The project would also stabilize the streambank and reduce sediment load into the creek, preserving its flow capacity during future storm events. Both the streambank and roadway are made more resilient by this project.

Cost-Benefit Analysis

This is a fairly low cost project that has multiple co-benefits, including the increased resilience and protection of Newport-Gray Road as well as the environmental benefits of decreased sediment load into the Creek.

Risk Reduction Analysis

This project increases the resiliency of Newport Gray Road, making it less vulnerable to failure and collapse during future flood events. Since road flooding and shoulder collapse on major roads poses an important threat to the deployment of emergency vehicles and services, this project also reduces risk to residents of the Town of Norway who will benefit from improved road accessibility and safety.

General Timeframe for Implementation

This project would be implemented and completed in the near term (0 to 18 months) once funding was available.

General Status of Project

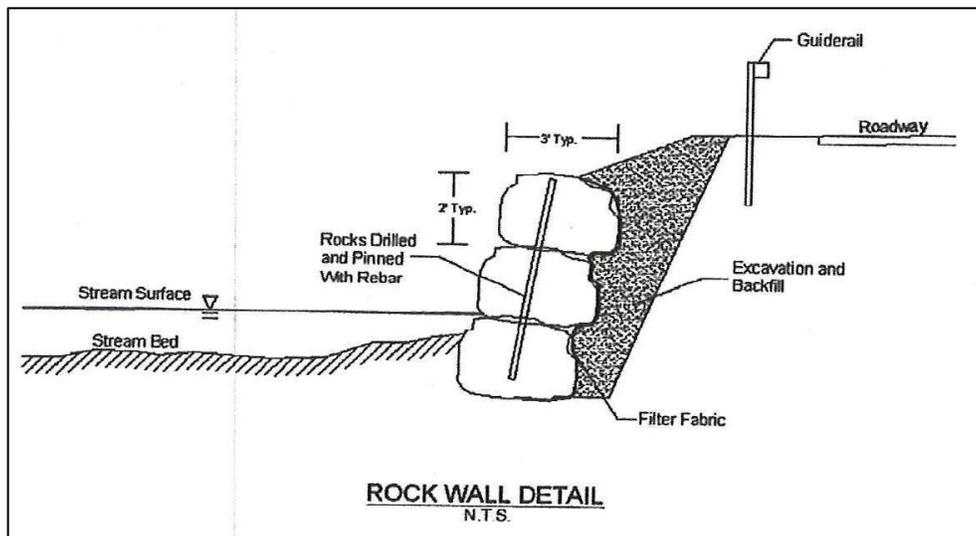
The project is in the conceptual / planning phase and would require engineering design plans and permit approvals. It is anticipated that an US Army Corp of Engineers and NYS Department of Environment permit will be required.

Anticipated Project Lead

Herkimer County Department of Highways and the Town of Norway



(Above) Example of road shoulder damage caused by 2013 flooding



(Above) Newport-Gray Road Stream Bank Protection – Project Rendering



RC 3. Lehman Park Embankment Repair – Village of Frankfort

Project Description

This project is intended to repair an embankment failure along Moyer Creek at the Frankfort Municipal Park (Lehman Park). The repair would cover a section of the embankment measuring 150 feet in length by 25 feet in depth by 45 feet in height. An estimated 15,000 cubic yards of material was washed away from the stream bank in the summer 2013 flooding and needs to be replaced. The slope of the bank is very steep, between 45 and 90 degrees, and is actively subsiding and collapsing, as evidenced by failing vegetation and additional sediment load into the creek. The bank is considered to be highly unstable and continued erosion is taking place during rain events. Upon further geotechnical investigation, additional hydrodynamic issues were discovered that are associated with the bank, including the presence of an active spring at the base of the slope above the creek. The infiltration rates of the bank material are such that larger volumes of rainwater, typically found in flooding events associated with Moyer Creek increases the discharge associated with the spring. Over time, this will erode any fill material placed in its path. Therefore, the project will include the installation of a drainage system to reduce the risk of erosion associated with the spring. Additionally, the project will involve the stabilization benching of existing material, mechanically stabilizing the slope with an earthen wall with 12 foot rise intervals, and planting vegetation with a slope angle of less than 60 degrees.

The embankment failure threatens the stability of the recreational fields at the top of the bank in Lehman Park as well as the homes and infrastructure directly southwest of the bank failure. During the summer 2013 flooding, the bank failure caused the emergency evacuation of over 30 residents from a senior living facility and some families from a nearby low income neighborhood, resulting in over 200 evacuees. After the storm, the NYS DOT conducted emergency action to re-stabilize the Moyer Creek channel but it did not address the entire bank failure area. This project has been submitted to FEMA and is in its final review process. The Village of Frankfort is seeking funding for its 25% cost share obligation if FEMA funding is approved.

Lehman Park Embankment Repair

Recovery Support Function: Natural & Cultural Resources

Estimated Cost: Total: \$860,000; FEMA Share: \$645,000; Local Share: \$214,000

Assets Made More Resilient:

Residences, businesses, streets, bridges, and other critical infrastructure located in the 100 and 500 year flood zones in the Village of Frankfort; the Frankfort Municipal Park; Moyer Creek

Risk Reduction & Benefits:

Reduction of sediment load into Moyer Creek, which will reduce the risk of flooding to nearby properties; Stabilize creek banks and prevent further degradation of the embankment

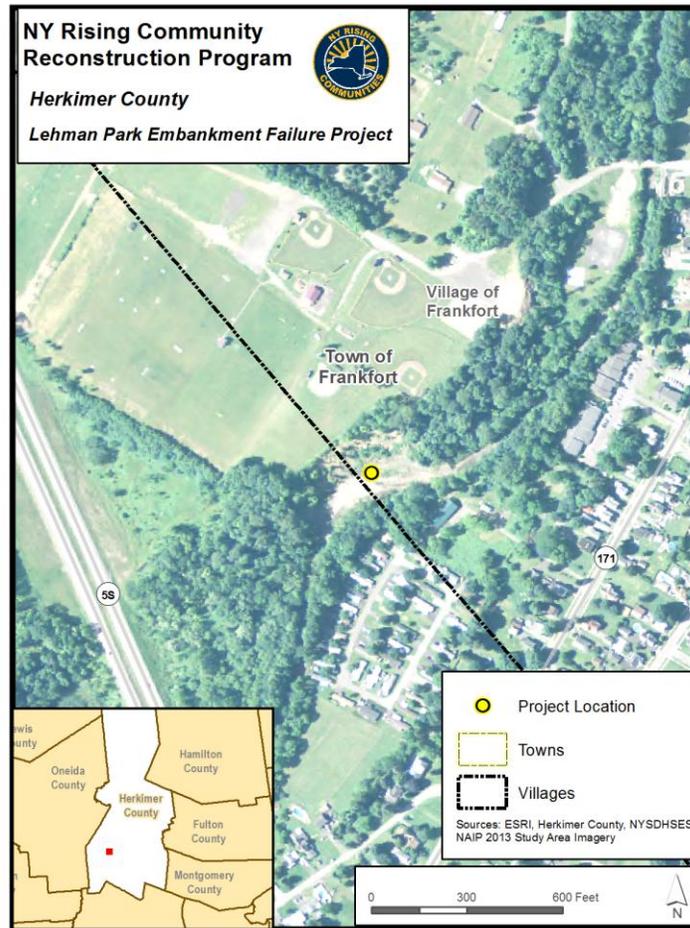


Figure 8. Location of Lehman Park Embankment Repair Project

Strategies

The strategy that this project will help advance is: “Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses.”

Estimated Project Costs

The total cost to repair the embankment is estimated at \$860,000. The Village of Frankfort Maintenance Department will use a contractor to do the work and has already hired an engineering consultant to do a preliminary design and cost estimate for the project (outlined in the following table). The Village of Frankfort has submitted an application to FEMA to fund the repairs and is in the final review process for approval. If approved, FEMA would cover \$645,000 and the Village needs \$215,000 to 25% local matching funds.



Description	Cost/Unit	Units	Cost Estimate
Geotechnical investigation	\$5,000	Lump sum	\$5,000
Tree clearing, grubbing and removal	\$10,000	Lump sum	\$10,000
Erosion and sediment control	\$2,000	Lump sum	\$2,000
Temporary construction for access	\$10,000	Lump sum	\$10,000
Retaining wall components	\$150/basket	2,000 baskets	\$300,000
Crushed stone	\$100/cubic yard	150 cubic yards	\$15,000
Screening gravel	\$10,000	Lump sum	\$10,000
Geotextile fabric	\$4.00/square yard	650 square yards	\$2,600
Geomat	\$13/square yard	2,700 square yards	\$25,100
Perforated pipe	\$10/linear foot	500 linear feet	\$5,000
Cut and backfill	\$10/cubic yard	10,000 cubic yards	\$100,000
Repositioning and/or re-use of existing stone wall	\$5,000	Lump sum	\$5,000
Cut and place topsoil	\$7.50/cubic yard	500 cubic yards	\$3,750
Purchase and place topsoil	\$65/cubic yard	1,000 cubic yards	\$65,000
Seed and mulch for erosion control	\$10,000	Lump sum	\$10,000
<i>Subtotal (hard costs)</i>			<i>\$578,450</i>
Estimated soft costs (design, permitting, and labor)		Lump sum	\$281,550
Total Cost			\$860,000

Potential Funding Sources

The Village of Frankfort has already applied to FEMA to cover 75% of the project cost. In order to cover the 25% local cost share obligation, the Village submitted a 2014 NYS Consolidated Funding Application to cover the local cost share. The other source of funding available is the NY Rising Community Reconstruction program.

Project Benefits

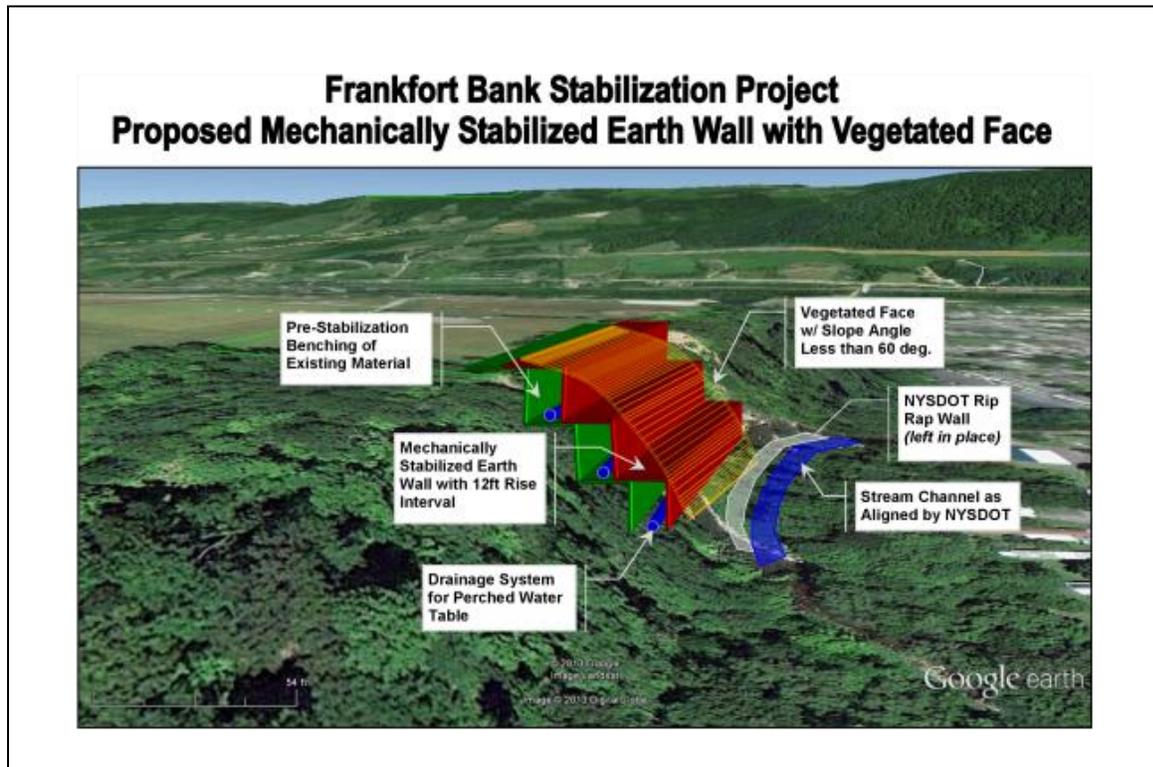
Implementation of the project will repair damages and stabilize a portion of the Moyer Creek embankment. The project will prevent further degradation of the embankment and protect it from future storm events. As such, the project will reduce an immediate threat to public health and safety and the adjacent properties. Additionally, the project will reduce the sediment load into the creek. Increased sediment deposition in the creek bed shallows the creek and makes the formation of ice and ice jams more likely, particularly at bridges, which can cause flooding. Reducing the sediment load into the creek will also help maintain the flow capacity of the creek and further reduce future flooding.

Cost Benefit Analysis

Since the Village of the Frankfort is only requesting the 25% local cost share obligation, this project represents a low-cost project that has multiple co-benefits that outweigh the cost of the project. Co-benefits include a reduced risk of flooding to residential and commercial parcels, roads and bridges, and



utility infrastructure. The project will also help stabilize and protect the Frankfort Municipal Park (Lehman Park), an important recreational resource for the Village of Frankfort that would be expensive to re-locate or replace.



Risk Reduction Analysis

This project is intended to reduce the risk of continued bank erosion that is contributing a large amount of sediment to Moyer Creek that increases the risk of flooding to nearby homes, businesses, and infrastructure. By stabilizing the bank, this project will reduce the risk of flooding to approximately 25 residential parcels and nine commercial parcels that are located in the repetitive flood zone, 38 residential parcels, and nine commercial parcels located in the high risk zone. Other important assets that could experience a reduction in flood risk as a result of this project include the Frankfort Fire Station, two bridges in the Village of Frankfort, the Electrical Substation, and three senior housing facilities.

General Timeframe for Implementation

This project could be implemented and completed in the near term (0 to 18 months) once funding is available.



General Status of Project

The project has already had initial engineering design plans completed but would need the appropriate permit approvals from the Department of Environmental Conservation. The Village of Frankfort has submitted an application to FEMA to fund the repairs and is in the final review process for approval. The Village of Frankfort has received notification from FEMA for an approved work order to do an archeological excavation and assessment of the site. Final approval from FEMA to fund the project will most likely follow this initial excavation and assessment.

Anticipated Project Lead

Village of Frankfort



RC 4. Culvert Repair for Access Road to Water Holding Tank – Village of Frankfort

Project Description

A culvert located at the intersection of Joslin Hill Road and an access road leading to a water holding tank for the Village of Frankfort collapsed and filled with debris as a result of the summer 2013 flooding (see image below). The water holding tank is one of three that provides potable water to the Village of Frankfort. The collapsed culvert is restricting drainage in the area, which could result in water overtopping and flooding the access road to the water holding tank, thus making it inaccessible. This project is intended to replace the collapsed culvert to ensure that the access road is in working order for water operators to access the Village water storage tank.

Culvert Repair for Access Road to Water Holding Tank – Village of Frankfort

Recovery Support Function:

Infrastructure

Estimated Cost: \$10,454

Assets Made More Resilient:

Village of Frankfort water holding tank;
Collapsed culvert pipe

Risk Reduction & Benefits:

Reduces risk of not being able to access water holding tank; ensures reliable potable water supply for Village of Frankfort

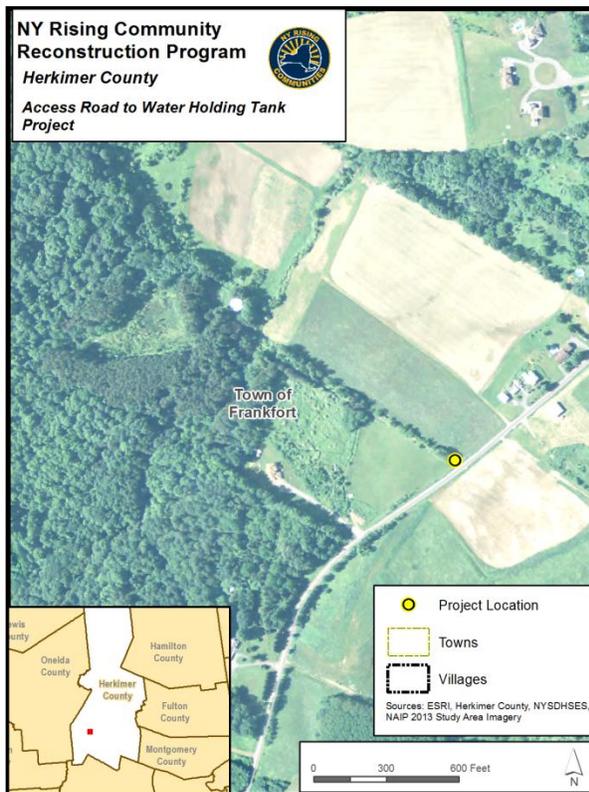


Figure 9. Location of Culvert Repair Project

Strategies

The strategy that this project will help advance is: “Invest in key infrastructure facilities and systems to promote economic and ecological sustainability.”

Estimated Project Costs

The total cost of the repairs is estimated at \$10,454, which would include approximately \$5,050 for materials and \$5,400 for labor (not including employee benefits). Cost estimates were provided by the Village of Frankfort. Construction would be done by the Village of Frankfort Maintenance Department using supplies purchased through a local vendor and any re-usable materials located at the damaged site.



Potential Funding Sources

There are several potential state funding sources for this project that include:

- NY Rising Community Reconstruction Program
- NYS Environmental Facilities Corporation Clean Water State Revolving Fund
- Environmental Protection Agency Drinking Water State Revolving Fund
- NYS Research and Development Authority (NYSERDA) Cleaner, Greener Communities Program
- Empire State Development (ESD) Environmental Investment Program

Project Benefits

Implementation of the project will help ensure safe and reliable access to the primary drinking water holding tank for the Village of Frankfort. Access to the tank is important during and after emergencies so that testing and servicing can be performed.

Cost Benefit Analysis

This is a very low cost project that has important public health and safety benefits for the Village of Frankfort.

Risk Reduction Analysis

This project reduces the risk of flooding on Joslin Hill Road and ensures access to this important water utility infrastructure.



(Above) Collapsed Culvert Pipe

General Timeframe for Implementation

This project could be implemented in the near term (0 to 12 months) once funding is available.

General Status of Project

This project does not require any permitting or engineering design since it involves a simple culvert pipe replacement. The project would be ready to complete once funding is made available.

Anticipated Project Lead

Village of Frankfort Maintenance Department



RC 5. East German Street Extension Repair – Town of Herkimer

Project Description

The project involves the repair of the bank supporting the East German Street Extension, which was structurally compromised by the summer 2013 floods. The recommended solution, as determined by a recent engineering analysis, is to install a Sheet Pile Wall System where the road has been compromised.

Rising flood waters from the West Canada Creek and subsurface ground water breached both sides of the wing wall and retaining wall. The water subsequently removed fine materials from the 600 foot embankment behind the wall, creating voids and ultimately instability. The supporting wall is in such a deteriorated condition that a portion of the Extension Road has been declared an emergency situation and is not open to traffic.

East German Street Extension Repair – Town of Herkimer

Recovery Support Function:

Infrastructure

Estimated Cost: \$567,993

Assets Made More Resilient:

East German Street Extension; Homes & businesses located off of East German Street Extension; utility lines located underneath the road

Risk Reduction & Benefits:

Reduces risk of street and utility collapse, which could result in loss of power, water and gas service for surrounding community; stabilize road

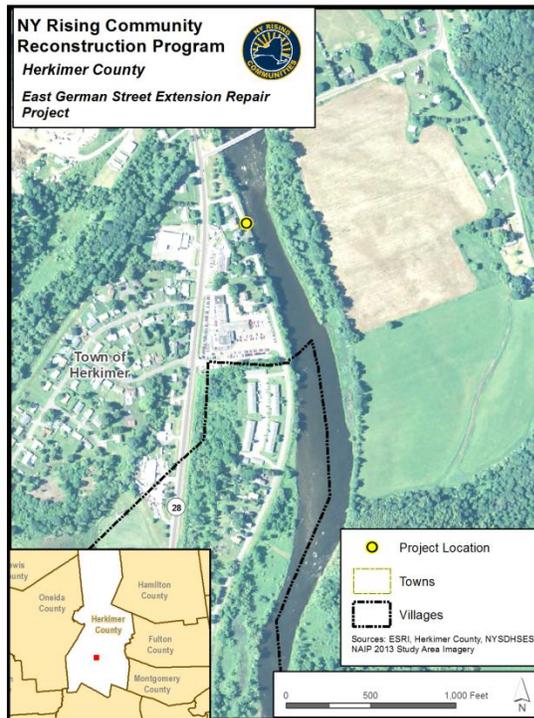


Figure 10. Location of East German Street Extension Repair Project

This road provides access for two businesses employing 85 people and six homes in the Town of Herkimer and a business, 48 homes, and a large apartment complex with 48 units in the Village of Herkimer. There are also water, sewer, gas, and electric utilities, which are located under and alongside the road, which are reliant on the support of the deteriorated wall and support structure.

Strategies

The strategy that this project will help advance is: “Invest in key infrastructure facilities and systems to promote economic and ecological sustainability.”



Estimated Project Costs

The estimated cost for the project is \$567,993, which is based on the estimates outlined in the table below. If approved for funding, FEMA will cover 75% of the cost (\$425,994) and the Town of Herkimer will need \$141,998 to complete the project. If not approved, the Town is seeking the full project of \$567,993 in order to more immediately deal with this problem before the road and utility lines are further compromised. The Town also submitted a 2014 Consolidated Funding Application to fund this entire project since it is unclear whether they will receive funding from FEMA.

Description	Cost/Unit	Units	Cost Estimate
Road Closure & Removal of Soil	\$30,000	Lump sum	\$30,000
Complete Project According to Existing Construction Plans	\$388,430	Lump sum	\$388,430
Asphalt Top – 75 tons	\$8,738	Lump sum	\$8,738
Asphalt Binder – 150 tons	\$15,825	Lump sum	\$15,825
Reinforcing Steel for Wall Cap	\$5,700	Lump sum	\$5,700
Additional 75 feet steel sheet piling	\$61,800	Lump sum	\$61,800
Finish Grade	\$5,000	Lump sum	\$5,000
Quality Insurance	\$7,500	Lump sum	\$7,500
Technical Oversight	\$15,000	Lump sum	\$15,000
Contingency	\$25,000	Lump sum	\$25,000
Bond Counsel	\$5,000	Lump sum	\$5,000
Estimated Construction Total			\$567,993

Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Federal Emergency Management Agency Hazard Mitigation Grant Funding
- 2014 NYS Consolidated Funding Announcement

Project Benefits

Implementing the project would stabilize and protect the East German Street Extension roadway as well as the critical water, sewer, gas and electric transmission lines that run under and alongside it. Stabilization of the bank would ensure that employees and residents could access their places of employment and their homes. Further sediment deposition in the creek would also be prevented as a result of this project.

Cost Benefit Analysis

This is a medium cost (\$500,000 to \$1 million) project that will address a critically important emergency for the Town and Village of Herkimer. If this emergency continues to worsen, the cost of repairing the utilities and any damages to the commercial and residential properties nearby would be much greater than the cost of stabilizing the bank and repairing the street.



(Above) West Canada Creek from East German Street



(Above) Road Closure on East German Street Extension

Risk Reduction Analysis

Implementation of this project would resolve an emergency situation that has evolved as the bank has become increasingly compromised with storms and flooding that have occurred since the summer 2013 storm event. This project would reduce the vulnerability of this road to future collapse and would reduce the risk of collapse and failure to the water, sewer, gas, and electric utilities located alongside the road. This project would also increase the resiliency and reduce the public safety risks to two businesses and six homes in the Town of Herkimer, and one business, 48 homes, and a large apartment complex in the Village of Herkimer that utilize the road for access.

General Timeframe for Implementation

The project could be implemented and completed in the near term (0 to 18 months) once funding is available.

General Status of Project

The Town of Herkimer has submitted an application to FEMA to fund this project but it is unclear whether this project will be approved for funding. The Town has already completed an engineering analysis, a subsurface investigation, and a geotechnical evaluation of the East German Street Extension project.

Anticipated Project Lead

Town and Village of Herkimer



RC 6. Bellinger Creek Repairs – Village of Herkimer

Project Description

The summer 2013 storm event caused water to overtop the banks of Bellinger Creek, causing extensive flooding through a substantial portion of the Village of Herkimer, including hundreds of homes. The flooding, as well as large amounts of debris in the stream channel, caused mudslides and the deterioration of portions of the retaining wall that lines Bellinger Creek from Brookwood Park past Herkimer High School. This project involves the re-establishment of proper channel widths and a floodplain bench, and the stabilization of the banks for a 2,600 linear feet section between the Bellinger Creek headcut and Maple Grove Avenue. This project also includes stabilizing the Creek headcut in Brookwood Park by placing fill against the headcut and armoring with large stone and/or sheet piling grade control structures to create a cascade, filling the headcut area with stone, and stabilizing the deteriorated concrete channel upstream of the grade control structure.³³ This portion of the project has been submitted and approved by FEMA for funding.

Strategies

The strategy that this project will help advance is: “Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses.”

Estimated Project Costs

The total cost of the project is around \$2.194 million, the details of which are outlined in the table below. The cost estimates were provided by the Village of Herkimer. The Village of Herkimer has submitted an application to FEMA to fund this project and \$298,893 of the project proposal, which includes repairs to the headcut, is eligible for FEMA funding. For the remaining balance of \$1.895 million, the Village has submitted a 2014 NYS Consolidate Funding Application to this project.

Bellinger Creek Repairs – Village of Herkimer

Recovery Support Function: Natural and Cultural Resources

Estimated Cost: Total: \$2,193,893, FEMA Share: \$298,893, Local Share \$1.895 million

Assets Made More Resilient:

Residential & commercial properties located in the 100 year and 500 year flood zones; Bellinger Creek; Brookwood Park; Roads and bridges located in the 100 year and 500 year flood zones

Risk Reduction & Benefits:

Reduces risk of flooding to homes and business in the Village of Herkimer; Stabilizes banks of Bellinger Creek and reduces sediment deposition



Description	Cost/Unit	Units	Cost Estimate
<i>Widen Channel, Develop Floodplain Bench, and Stabilize Creek Bank Estimates</i>			
Construction costs to widen channel, develop floodplain bench, and stabilize creek banks	\$675/linear foot	2,600 linear feet	\$1,755,000
Design	\$50/linear foot	2,600 linear feet	\$130,000
Contingency	\$10,000	Lump sum	\$10,000
Project Cost			\$1,895,000.00
<i>FEMA Eligible Repair Estimates</i>			
Head cut below Brookwood Park – Heavy Rip Rap and Bank Stabilization			\$122,393
Bank Stabilization on West Bank adjacent to service road			\$166,234
Head Walls at Sluiceway Channel			\$10,255.60
FEMA Eligible Funding			\$298,892.60
Total Project Cost			\$2,193,893.00

Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Federal Emergency Management Agency Hazard Mitigation Grant Funding
- 2014 NYS Consolidate Funding Application

Project Benefits

Establishing proper channel widths and floodplain benches and stabilizing the banks of Bellinger Creek will reduce the risk of flooding to the adjacent residential and commercial assets of the Village of Herkimer. Stabilizing the banks will also reduce sediment deposition into the Creek. Sediment deposition decreases stream capacity and increases the risk of ice forming at constriction points, which causes ice jamming and flooding. These improvements will protect hundreds of homes and businesses.

Cost Benefit Analysis

The relatively high cost of this project is compensated by the immense potential benefits and reduction of risk that could be achieved. During the summer 2013 flooding, the Village of Herkimer experienced substantial flooding throughout its historic residential and commercial areas, which cost the Village nearly \$8 million in damages. The Village continues to experience flood issues with Bellinger Creek and

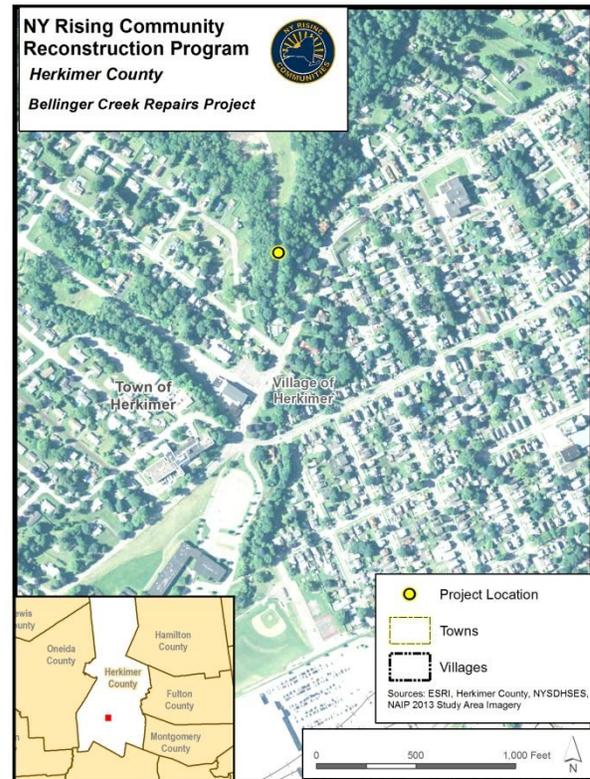


Figure 11. Location of Bellinger Creek Repairs Project



its tributaries on a regular basis, which will continue until a comprehensive approach can be taken to reducing flood waters from Bellinger.

Risk Reduction Analysis

Flooding from Bellinger Creek in the Village of Herkimer caused the worst of the damage and destruction during the 2013 summer flooding. This project will help reduce the risk of flooding to many important assets in the Village, including 94 residential parcels and nine commercial parcels located in the repetitive flooding area, nine residential parcels and four commercial parcels located in the High Risk Zone, and 388 residential parcels and 24 commercial parcels located in the Moderate Risk Zone. This project would also reduce the risk of flood waters overtopping key bridge assets that are at high risk, included the Maple Grove Avenue and West German Street bridges.



(Above) Bellinger Creek looking north;

General Timeframe for Implementation

The project could be implemented and completed in the near to mid-term (12 to 36 months) once funding is available.

General Status of Project

The Village of Herkimer submitted an application to FEMA, which has been approved for \$298,893 of funding to repair the headcut in Bellinger Creek. The project is in the conceptual / planning phase and would require engineering design plans and the relevant permit approvals. An additional consideration for this project is that the National Flood Insurance Program (NFIP) requires that local communities prepare data for a revision of the Flood Insurance Rate Map (FIRM) 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 (LOMR). This requirement may apply specifically to this project in that it could change the base flood elevation. If so, 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.

Anticipated Project Lead

Village of Herkimer



RC 7. Substation Repairs and Hardening – Village of Mohawk

Project Description

The Village of Mohawk has applied to FEMA to fund a major infrastructure project to protect their electrical substation. The electrical substation is located at the northern end of North Richfield Street in the Village of Mohawk along the Mohawk River. The substation is adjacent to Route 5S and is close to where Fulmer Creek empties into the Mohawk River (see Figure 12). The facility was inundated with 10 feet of water during the summer 2013 flooding. This project will relocate the substation to a higher elevation and thus protect it from future flooding. The Village has identified this as a critical project.

Substation Repairs and Hardening – Village of Mohawk

Recovery Support Function:

Infrastructure

Estimated Cost: Total Cost: \$5.5 Million; FEMA Share: \$4.3 million; Local Cost Share: \$1.2 million

Assets Made More Resilient:

Village of Mohawk Electrical Substation; Commercial and residential assets in the Village of Mohawk

Risk Reduction & Benefits:

Reduces risk of flooding to the electrical substation; ensure a reliable electrical power source



Figure 12. Location of Mohawk Village Electrical Substation Repairs Project

Strategies

The strategy that this project will help advance is: “Invest in key infrastructure facilities and systems to promote economic and ecological sustainability.”

Estimated Project Costs

The total estimated cost for the hardening and repair of the electrical substation is \$5.5 million, which was estimated by the Village of Mohawk. The Village is requesting funding for the remaining project balance of \$1.2 million to cover their local cost share obligation under FEMA.



Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Federal Emergency Management Agency Hazard Mitigation Grant Funding

Project Benefits

Implementation of this project will protect the electrical substation from future flooding, ensuring a reliable electrical power supply to many hundreds of area homes and businesses. A reliable electrical supply is important to all, but is critically important to health and social service providers and their vulnerable clients.

Cost Benefit Analysis

The relatively high cost of this project is outweighed by the immense potential benefits and reduction of risk. During the summer 2013 flooding, the Village of Mohawk substation was submerged in 8-10 feet of water, rendering it useless for more than a week. While necessary repairs have been made to the substation to make it operational, the substation continues to run below expected capacity due to the inflicted damage. The substation needs to be located outside of the flood zone to ensure that it does not suffer a similar fate in future storms and leaving the residents of the Village without power for days.

Risk Reduction Analysis

As part of this project, the electrical substation will be moved to a higher elevation and out of the flood zone. By doing so, the substation will reduce its exposure to future flooding, thus reducing its overall risk and vulnerability.

General Timeframe for Implementation

The project would be implemented in the near to mid-term (12 to 36 months) once funding is available.

General Status of Project

The project is in the conceptual/ planning phase and would require engineering design plans and permit approvals.

Anticipated Project Lead

Village of Mohawk

(Below) Village of Mohawk Electrical Substation





RC 8. Fulmer Creek Rehabilitation – Village of Mohawk

Project Description

Flooding of Fulmer Creek caused extensive damage in the Village of Mohawk. The banks of the creek were severely eroded and overtopped during the summer 2013 flooding. To reduce the future risk of flooding to nearby property and infrastructure the Village of Mohawk proposes a project that contains two phases:

1. A study to assess the feasibility of widening the Fulmer Creek floodplain between the Columbia Street Bridge and the West Main Street Bridge in the Village of Mohawk and developing preliminary designs to comprehensively mitigate flooding; and
2. Stream bank stabilization and the creation of floodplain benches where appropriate and feasible.

The first component of the project would assess the feasibility of creating a natural stream channel and floodplain bench in Fulmer Creek from the West Main Street Bridge to the Columbia Street Bridge (Route 28) to reduce the risk of flooding to adjacent properties. The study would look at widening the Fulmer Creek floodplain to better accommodate bankfull flows, the potential for property acquisition to restore floodplain, removing fill from the floodplain to create a floodplain bench, and restoring 3,300 linear feet of the creek channel to create a floodplain bench and a more natural channel configuration.

The second component of the project involves stabilizing the banks of Fulmer Creek in areas damaged and eroded by the 2013 flood event and developing floodplain benches where appropriate and feasible. The feasibility study completed in the first phase will better inform the locations of bank stabilization efforts and floodplain bench creation. The two components of this project would focus on the stretch of Fulmer Creek between the West Main Street Bridge and the Columbia Street/Route 28 Bridge in the Village of Mohawk (see Figure 13).

Fulmer Creek Rehabilitation – Village of Mohawk

Recovery Support Function: Natural and Cultural Resources

Estimated Cost: \$550,000

Assets Made More Resilient:

Residences and streets in the Extreme, High and Moderate risk area of the Village of Mohawk; Fulmer Creek; Roads and bridges in Extreme and High risk zones

Risk Reduction & Benefits:

Decreased vulnerability to flooding impacts from storm events; Restore natural floodplain for Fulmer Creek



Strategies

The strategy that this project will help advance is: “Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses.”

Estimated Project Costs

In first phase of the project, the initial feasibility study is estimated to cost \$150,000. The second phase of the project, which involves stream bank stabilization and floodplain bench creation, is estimated to cost \$400,000. The total project cost is estimated at \$550,000.

Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- 2014 NYS Consolidated Funding Application

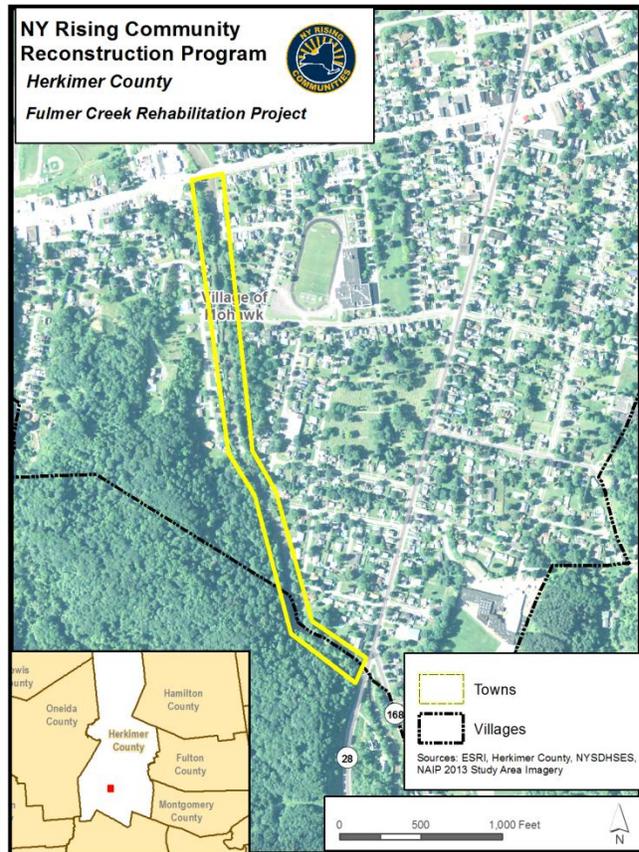


Figure 13. Location of Fulmer Creek Rehabilitation Project

Project Benefits

The preliminary feasibility study will establish the necessary project design criteria. Once implemented, this project will substantially reduce the risk of flooding and structural damage to the large areas in the Village of Mohawk during future storm events. Additionally, the second component of the project is anticipated to reduce sediment load into the creek near the West Main Street Bridge, thus reducing the risk of ice formation, ice jamming, and additional flood risk.



Cost Benefit Analysis

This project represents the first critical component of a needed flood mitigation strategy for the Village of Mohawk, which has historically experienced regular flooding from Fulmer Creek. In order to maintain its tax base and protect its residents, this project would signify a relatively small cost that would help stimulate a comprehensive approach to flood hazard mitigation that is important for the long-term viability of the Village of Mohawk.

Risk Reduction Analysis

Implementation of this project, with the eventual creation of floodplain benches along this portion of Fulmer Creek, has the potential to reduce flood risk to 325 residential parcels within the Village of Mohawk that are located in the repetitive flood area, three residential parcels in the High Risk Zone and three residential parcels in the Moderate Risk Zone. Many of these residences have repeatedly experienced flooding throughout the years as a result of extreme weather events and ice jamming that cause Fulmer Creek to flood. Approximately thirty commercial properties within the Village of Mohawk would also be at reduced risk of flooding if the recommendations of this evaluation were implemented. Additionally, the roads and bridges located in the Extreme and High Risk Zones, particularly the Main Street Bridge, will have reduced risk of flooding if Fulmer Creek has a more natural floodplain bench.

General Timeframe for Implementation

The project could be implemented and completed in the mid- term (12 to 36 months) once funding is available.

General Status of Project

The project is in the conceptual / planning phase. The Village of Mohawk, with assistance from the Herkimer-Oneida Counties Comprehensive Planning Department, submitted an application to the 2014 NYS Consolidated Funding Application to fund this project. An additional consideration for this project is that the NFIP requires that local communities prepare data for a revision of the FIRM within six months of the completion of any project that changes the base flood elevation at any location. This process is accomplished through a LOMR. This requirement may apply specifically to this project in that it could change the base flood elevation. If so, 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.

Anticipated Project Lead

Village of Mohawk



(Above) Fulmer Creek at Erie St & Lock St during 2013 flooding – Photo Credit: George Cryer

(Below) Fulmer Creek at the West Main Street Bridge





RC 9. Slip Bank Repair near former Wilkerson Property – Town of German Flatts

Project Description

A 400-foot long, 200-foot high (at its highest point) bank along Fulmer Creek failed during the summer 2013 storm event. The failure sent large amounts of sediment into the creek. This project involves the repair and stabilization of this bank to protect bridges and homes along NYS Route 168. The project includes the relocation and armoring of 850 linear feet of Fulmer Creek, construction of a wall along the toe of the existing bank failure, installation of rock vanes, and planting of vegetation on the failed slope. Sediment resulting from this bank failure reduced creek capacity and exacerbated debris jams and flooding through the Village of Mohawk to the confluence of the Creek with the Mohawk River.

Slip Bank Repair near former Wilkerson Property – Town of German Flatts

Recovery Support Function: Natural and Cultural Resources

Estimated Cost: \$1.15 million

Assets Made More Resilient: Residences and streets in the extreme and high risk areas along Route 168 in the Town of German Flatts and the Village of Mohawk

Risk Reduction & Benefits: Decreased vulnerability to flooding impacts from storm events

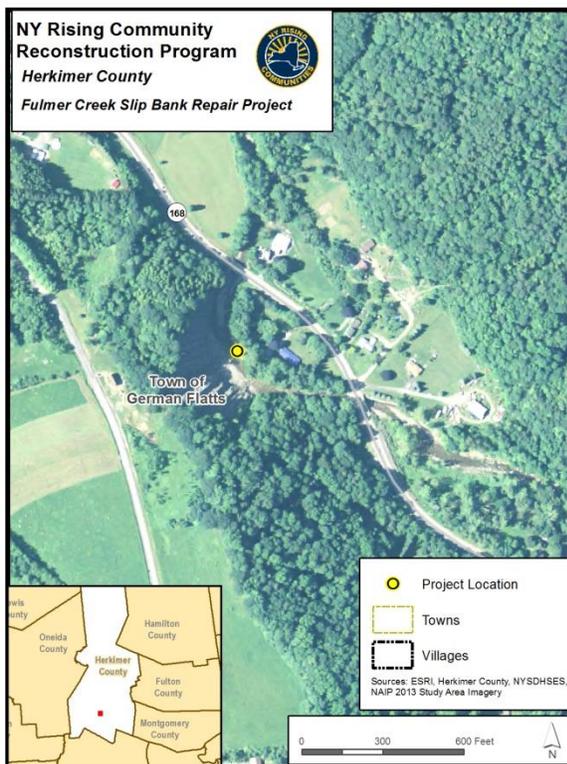


Figure 14. Location of Slip Bank Repair Project

The bank failure also threatens Casey Road, which is now less than 150 feet from the top of the embankment.

The project is located along Fulmer Creek between the County Route 168 double bridges.

Strategies

The strategy that this project will help advance is: “Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses.”



Estimated Project Costs

The total cost of this project is estimated to be \$1.15 million. The cost estimate was provided by the Town of German Flatts.

Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Federal Emergency Management Agency Hazard Mitigation Grant Funding

Project Benefits

Stabilizing the bank along Fulmer Creek and relocating the stream channel will help protect downstream properties by reducing the risk of flooding. Stabilization of the slope will also ensure the continued integrity and safety of Casey Road, located within 150 feet of the top of the embankment. Additionally, slope stabilization will reduce future sediment loads into Fulmer Creek, thus preserving creek flow capacity and reducing the risk of flooding caused by ice jams.

Cost Benefit Analysis

This project represents a critical component of a comprehensive flood mitigation strategy that will benefit both the Town of German Flatts and the Village of Mohawk. The potential benefits and cost savings from a reduced risk of repetitive flooding to property and infrastructure in the Town of German Flatts and the Village of Mohawk outweighs the high cost of this project.

Risk Reduction Analysis

Implementation of this project has the potential to reduce flood risk to residences located in the repetitive flood area and the



Fulmer Creek Bank Failure (pictured above and below)





High Risk Zones in both the Town of German Flatts and further downstream in the Village of Mohawk. Many of these residences have repeatedly experienced flooding throughout the years as a result of the increased sediment load in the Creek that is exacerbated by this bank failure. Additionally, the roads and bridges located in the Extreme and High Risk Zones, particularly Route 168 and its many bridges that cross over Fulmer Creek, will have reduced risk of flooding if the Creek has a more natural floodplain in this area and the sediment load is reduced.

General Timeframe for Implementation

The project could be implemented in the near to mid-term (12 to 36 months) once funding is available.

General Status of Project

The Town of German Flatts, with assistance from the Herkimer-Oneida Comprehensive Planning Department, submitted a 2014 NYS Consolidated Funding Application to fund this project. The project is in the conceptual phase and would require planning, engineering design, property acquisition and the appropriate permits and approvals from DEC. An additional consideration for this project is that the NFIP requires that local communities prepare data for a revision of the FIRM within six months of the completion of any project that changes the base flood elevation at any location. This process is accomplished through a LOMR. This requirement may apply specifically to this project in that it could change the base flood elevation. If so, 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.

Anticipated Project Lead

Town of German Flatts



RC 10. Left Bank Stabilization near Creekside Trailer Park Property – Town of German Flatts

Project Description

A bank along Fulmer Creek spanning approximately 160 feet long and 90 feet high failed as a direct result of the summer 2013 storm event. The project involves the armoring of 250 linear feet of Fulmer Creek along the left bank, the construction of a floodplain bench with incorporated rock vanes and wall along the toe of the existing bank failure, and planting of vegetation on the failed slope. This project will stabilize the eroded bank that continues to contribute sediment to Fulmer Creek exacerbating debris jams and increasing flooding downstream.

The project is located along Fulmer Creek and NYS Route 168 near the Creekside Trailer Park (see Figure 15).

Strategies

The strategy that this project will help advance is: “Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses.”

Estimated Project Costs

The total cost of this project is estimated to be approximately \$300,000. This cost estimate was provided by the Town of German Flatts.

Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Federal Emergency Management Agency Hazard Mitigation Grant Funding

Left Bank Stabilization near Creekside Trailer Park Property – Town of German Flatts

Recovery Support Function: Natural and Cultural Systems

Estimated Cost: \$300,000

Assets Made More Resilient:

Residences and streets in the Extreme and High risk area of the Town of German Flatts downstream of bank failure; Residences, streets and bridges in the Extreme and High risk zones of the Village of Mohawk

Risk Reduction & Benefits:

Decreased risk of flooding to residential property and road infrastructure; Protection and stabilization of truck ramp on Route 28; Decreased sediment load and improved environmental quality in Fulmer Creek



Project Benefits

Repairing the bank failure along Fulmer Creek will reduce the risk of flooding and thereby protect NYS Route 168, the homes near the project site, and the mobile homes located in the Creekside Trailer Park property. Implementation of the project will also ensure the structural integrity of the NYS Route 28

runaway truck ramp located at the top of the embankment and ultimately Route 28 itself, which is currently threatened by the embankment failure. Additionally, the project will stabilize the slope and reduce sediment load into Fulmer Creek, thus reducing the risk of ice formation and ice jams.

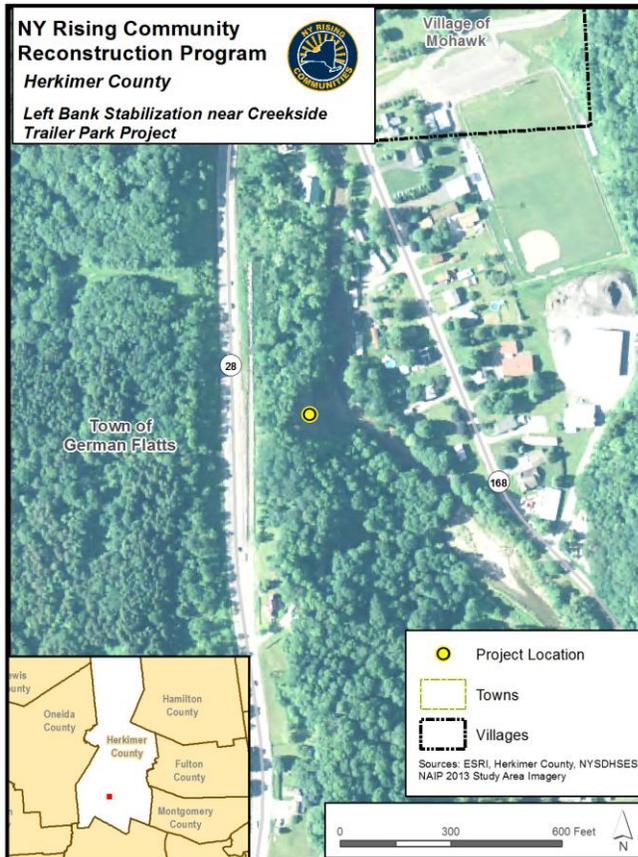


Figure 15. Location of Left Bank Stabilization Project

located in the repetitive flood area and the High Risk Zones in both the Town of German Flatts and further downstream in the Village of Mohawk. Many of these residences have repeatedly experienced flooding throughout the years as a result of the increased sediment load in the Creek that is exacerbated by this bank failure. Additionally, the roads and bridges located in the Extreme and High Risk Zones, particularly Route 168 and its many bridges that cross over Fulmer Creek, will have reduced risk of flooding if the Creek has a more natural floodplain in this area and the sediment load is reduced. This project will also reduce the risk to a runaway truck ramp along NYS Route 28 located at the top of the embankment that is at risk of collapse if this bank failure becomes worse.

Cost Benefit Analysis

This project represents a critical component of a comprehensive flood mitigation strategy that will benefit both the Town of German Flatts and the Village of Mohawk that can be achieved at a low cost. The potential benefits and cost savings from a reduced risk of repetitive flooding to property and infrastructure in the Town of German Flatts and the Village of Mohawk far outweighs the low cost of this project.

Risk Reduction Analysis

Implementation of this project has the potential to reduce flood risk to residences



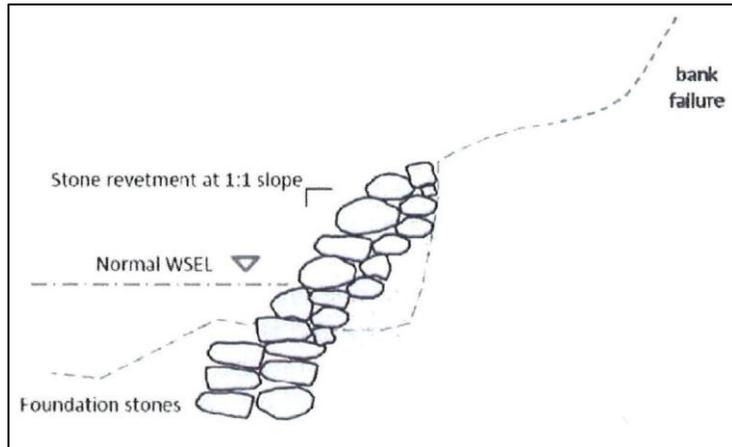
General Timeframe for Implementation

The project could be implemented and completed in the near-term (0 to 18 months) once funding is available.

General Status of Project

The Town of German Flatts, with assistance from the Herkimer-Oneida Counties Comprehensive Planning Department, submitted a 2014 NYS Consolidated Funding Application to fund this project. The project is in the conceptual phase and would require

planning, engineering design and the appropriate permits and approvals from DEC. An additional consideration for this project is that the NFIP requires that local communities prepare data for a revision of the FIRM within six months of the completion of any project that changes the base flood elevation at any location. This process is accomplished through a LOMR. This requirement may apply specifically to this project in that it could change the base flood elevation. If so, 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.



(Above) Bank Repair Project Rendering



(Above) Bank Failure along Fulmer Creek

Anticipated Project Lead

Town of German Flatts



RC 11. Leatherstocking Trailer Park Property Recovery Project – Town of German Flatts

Project Description

The 2013 summer flood event caused flooding of the Leatherstocking Trailer Park Property located adjacent to Fulmer Creek along Route 168 near Fulmer Lane Drive in the Town of German Flatts. To reduce the future risk of flooding to the trailer parks, nearby property, and infrastructure, the Town of German Flatts proposes a project that contains two phases:

1. Acquisition of the Leatherstocking Trailer Park property, and
2. Restoration of Fulmer Creek’s natural floodplain.

The first phase of this project would be the acquisition of the Leatherstocking Trailer Park property. The Town of German Flatts has been in conversations with the property owner who has indicated a willingness to sell. Once the property is acquired, two damaged mobile homes and any additional infrastructure would be removed.

The second phase of the project would involve stabilizing Fulmer Creek and repairing the site to allow flood waters to more naturally access the floodplain.

Strategies

The strategy that this project will help advance is:

“Increase the resiliency of the housing stock by increasing housing in downtowns and outside of flood zones and acquiring at-risk properties to reduce flood losses and spur revitalization.”

Estimated Project Costs

The total cost of this project is estimated to be approximately \$340,000. The first phase of the project involving acquisition of the property is estimated to cost \$145,000. The second phase of the project is estimated to cost \$195,000, which includes estimated costs for planning, engineering and design (\$10,000) and construction (\$185,000).

Leatherstocking Trailer Park Property Recovery Project – Town of German Flatts

Recovery Support Function:

Housing/Natural and Cultural Resources

Estimated Cost: \$340,000

Assets Made More Resilient:

Residences, streets, and bridges in the Extreme and High risk areas downstream of the trailer park property in the Town of German Flatts; Residences, streets and bridges in the Extreme and High risk zones of the Village of Mohawk

Risk Reduction & Benefits:

Decreased vulnerability to flooding through floodplain restoration and enhancements



Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- 2014 NYS Consolidated Funding Application

Project Benefits

Acquiring this property will remove damaged residential structures from the floodplain and prevent re-establishment of residential use on the site. Removal of the structures and dedication of the property as open space will make it possible to reestablish the Fulmer Creek floodplain. Allowing the creek to flood naturally across its floodplain will reduce downstream flooding and the threat to public health and safety. Developing open space here could also act as a catalyst for the construction of a “greenway”

along Fulmer Creek that could be used for recreation.

Cost Benefit Analysis

This project represents a critical component of a comprehensive flood mitigation strategy that will benefit both the Town of German Flatts and the Village of Mohawk that can be achieved at a low cost. The potential benefits and cost savings from a reduced risk of repetitive flooding to property and infrastructure in the Town of German Flatts and the Village of Mohawk far outweighs the low cost of this project.

Risk Reduction Analysis

Implementation of this project has the potential to reduce flood risk to residences located in the repetitive flood area and the High Risk Zones in both the Town of German Flatts and further downstream in the Village of Mohawk. In a more immediate sense, it removes the potential for future residential development on this site which is frequently at risk of flooding, thus eliminating an immediate threat to public health and safety. Additionally, the roads and bridges located in the Extreme

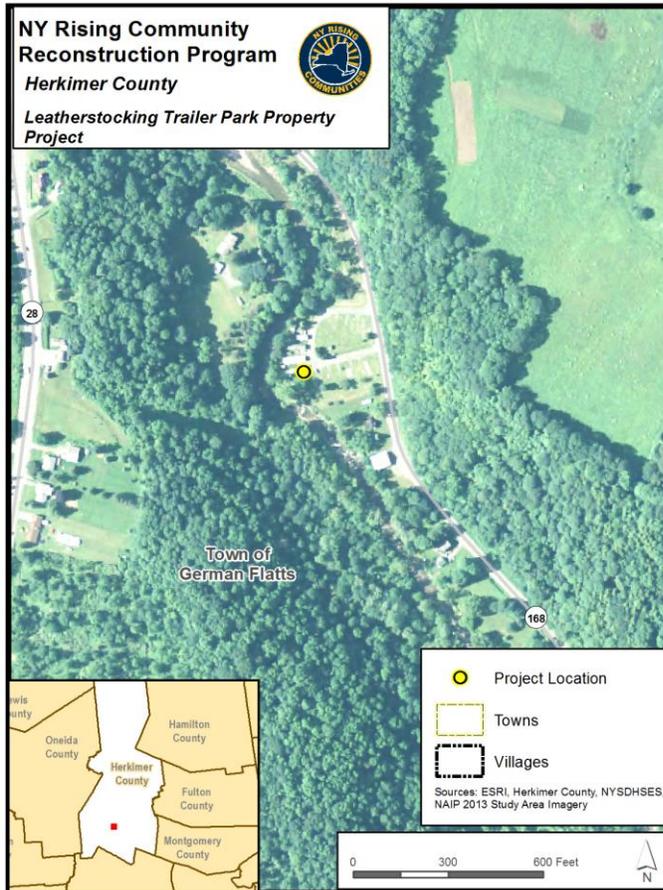


Figure 16. Location of Leatherstocking Trailer Park Recovery Project

immediate threat to public health and safety. Additionally, the roads and bridges located in the Extreme



and High Risk Zones, particularly Route 168, will have a reduced risk of flooding if the Creek has a more natural floodplain in this area.

General Timeframe for Implementation

The project could be implemented and completed in the near term (0 to 18 months) once funding is available.

General Status of Project

The Town of German Flatts, with assistance from the Herkimer-Oneida Comprehensive Planning Department, submitted a 2014 NYS Consolidated Funding Application to fund this project. The project is in the conceptual/planning phase but initial contact has been made with the property owner who has indicated a willingness to sell. An additional consideration for this project is that the NFIP requires that local communities prepare data for a revision of the FIRM within six months of the completion of any project that changes the base flood elevation at any location. This process is accomplished through a LOMR. This requirement may apply specifically to this project in that it could change the base flood elevation. If so, 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.

Anticipated Project Lead

Town of German Flatts



(Above) Leatherstocking Trailer Park



RC 12. Debris Removal and Stabilization of Cemetery Creek Headwaters – City of Little Falls

Project Description

The headwaters of Cemetery Creek consist of a multitude of ground cover types, including fields, brush and forest areas. The creek banks were compromised from the heavy flooding of the summer 2013 rain events. Erosion increased due to the unstable banks. The eroded banks released material downstream, consisting of soil, gravel, rock, vegetation, and even trees. That material partially blocked the culverts through which the creek flows on its way to the Mohawk River. The blockage decreased the allowable flow volume through the system and created a substantial risk to public and private property, along with the potential for compromised public safety. This project would require debris removal near the headwaters and bank stabilization along the creek. The bank area that would be addressed is approximately one-half mile in length.

This project spans approximately 4,900 feet of Cemetery Creek beginning at its headwaters on the north end of the creek at Dise Road (edge of city limits) prior to it entering the underground structure by St. Mary’s Cemetery in the City of Little Falls. The Cemetery Creek headwaters area was exempt from FEMA coverage except for 220 feet of the drainage system on the Number 5 Fairway of the Municipal Golf Course, which is not included in this project proposal.

Strategies

The strategy that this project will help advance is: “Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses.”

Estimated Project Costs

The estimated cost of the project is \$400,000, which was provided by the City of Little Falls Board of Public Works.

Debris Removal and Stabilization of Cemetery Creek Headwaters – City of Little Falls

Recovery Support Function: Natural and Cultural Resources

Estimated Cost: \$400,000

Assets Made More Resilient:

The City of Little Falls Municipal Golf Course and residences in the Extreme and High risk areas downstream of Creek headwaters

Risk Reduction & Benefits:

Reduce the risk of clogging in drainage system; reduce the risk of flooding to residences and business in the City of Little Falls



Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- NYS Environmental Facilities Corporation Clean Water State Revolving Fund
- Environmental Facilities Corporation (EFC) Green Innovation Grant Program (GIGP)
- NYS Research and Development Authority (NYSERDA) Cleaner, Greener Communities Program
- Empire State Development (ESD) Environmental Investment Program (EIP)

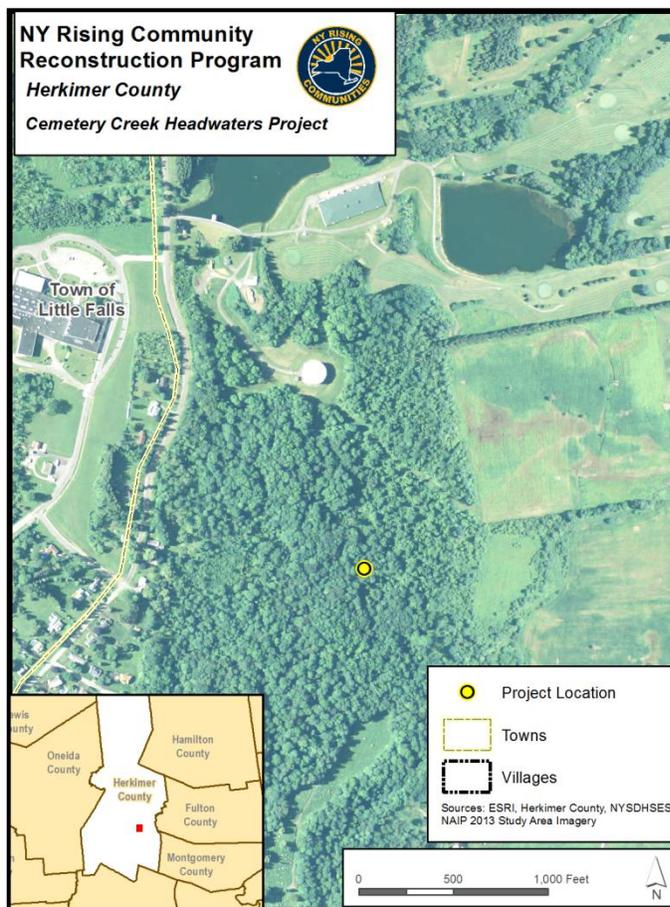


Figure 17. Location of Cemetery Creek Headwaters Project

further downstream, thus reducing the risk of flooding to residences and business in the City of Little Falls. This project will also reduce the risk of flooding to the Municipal Golf Course through which the Creek flows.

Project Benefits

There are a number of homes downstream of the Cemetery Creek headwaters that are at risk of flooding due to the buildup of debris within the creek as it goes underground. Implementation of the project will reduce the risk of flooding to private and public property downstream and adjacent to Cemetery Creek, including the municipal golf course.

Cost Benefit Analysis

The cost of recurring flood damage to homes, businesses, and municipal property that are adjacent to and downstream from Cemetery Creek can be avoided or reduced through implementation of this project, and thus outweighs the relatively low cost of the project.

Risk Reduction Analysis

This project will decrease the amount of debris and large sediment load that has accumulated in the Creek from previous storms and flooding, which will help reduce the risk of clogging the drainage channels



General Timeframe for Implementation

The project could be implemented and completed in the near term (0 to 18 months) once funding is available.

General Status of Project

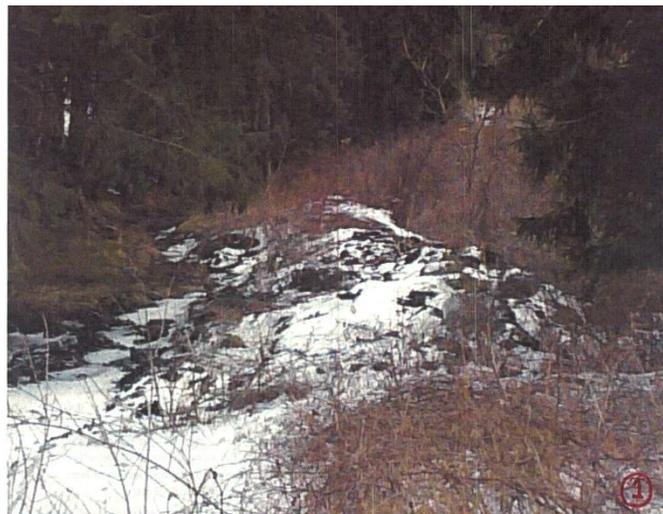
The project is in the conceptual / planning phase and would require the appropriate permits and approvals from DEC.

Anticipated Project Lead

City of Little Falls



*(Above) Cemetery Creek prior to entering underground structure;
(Below) Cemetery Creek at Dise Road*





RC 13. Timmerman Road Ditch Repair, Town of Manheim

Project Description

The drainage ditch on the west side of Timmerman Road in the Town of Manheim was washed out in the summer 2013 flooding. Immediately following the flooding, the Town of Manheim received funding from FEMA to make minimal and necessary repairs to the road for it to be accessible for use. However, repairing the ditch along Timmerman Road did not qualify for emergency funding from either the NYS Department of Transportation or FEMA. If the ditch is not repaired, Timmerman Road will continue to be at risk of failure during even minimal rain events and storms.

Timmerman Road is located near the bottom of a relatively steep hill and water draining down the hill has continued to exacerbate the severity of the ditch washout. Repairs would include: (1) grade the ditch on its bottom and sides; (2) line the ditch with filter fabric; (3) fill in the bottom of the ditch with heavy stone; (4) chink in with medium stone roughly 4' thick; (5) cover the slopes with filter fabric and overlay with medium and light stone fill mix; (6) repair shoulder with crusher run; and (7) repair roadway with binder asphalt pavement. The estimated measurements of the ditch repair are 450 feet long, 15 feet wide and seven feet deep.

Strategies

The strategy that this project will help advance is: "Invest in key infrastructure facilities and systems to promote economic and ecological sustainability."

Estimated Project Costs

The estimated cost of the project is \$264,000, which includes the cost of materials, equipment, labor, and road paving. Project cost estimates are detailed below. The estimated project cost was provided by the Town of Manheim.

Timmerman Road Ditch Repair

Recovery Support Function:

Infrastructure

Estimated Cost: \$264,000

Assets Made More Resilient:

Timmerman Road; Residences located along Timmerman Road

Risk Reduction & Benefits:

Reduces risk of road destabilization and flooding; Ensures road access via Timmerman Road for residences with no other alternative transportation routes

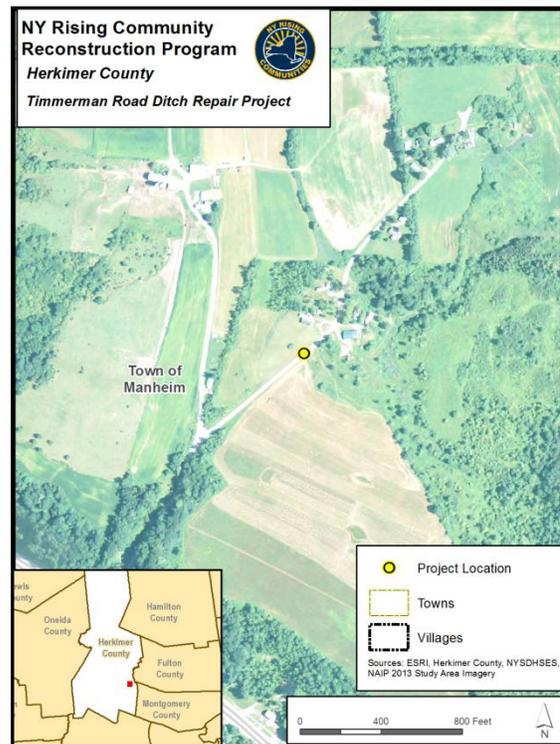


Figure 18. Location of Timmerman Road Repair Project



Description	Cost/Unit	Units	Cost Estimate
Materials			
Filter Fabric	\$2,000	Lump sum	\$2,000
Heavy stone	\$80/ton	1,250 tons	\$100,000
Medium & light stone	\$60/ton	1,000 tons	\$60,000
Crusher run	\$25/ton	80 tons	\$2,000
Equipment price	\$40,000	Lump sum	\$40,000
Labor price	\$25,000	Lump sum	\$25,000
Road paving (3" x 18' x 500') - Includes materials, equipment & labor	\$35,000	Lump sum	\$35,000
Total			\$264,000

Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Environmental Facilities Corporation Clean Water State Revolving Fund)
- Environmental Facilities Corporation (EFC) Green Innovation Grant Program
- NYS Research and Development Authority (NYSERDA) Cleaner, Greener Communities Program
- Empire State Development (ESD) Environmental Investment Program (EIP)

Project Benefits

Implementation of the project will repair damages to and stabilize Timmerman Road to ensure that it is safe to travel for the homes and farm that rely on the road for everyday and emergency access. As such, the project will reduce the threat to public health and safety.

Cost Benefit Analysis

The potential flood reduction benefits that could be achieved on Timmerman Road, thus maintaining access to the surrounding properties, offset the low cost of the project.

Risk Reduction Analysis

Improved drainage along Timmerman Road would reduce the risk of flooding on this road, thus enabling access to those residents and emergency vehicles that depend on the road to go to their homes.

General Timeframe for Implementation

This project could be implemented and completed in the near term (0 to 18 months) once funding is secured.



General Status of Project

The project is in the conceptual/planning phase and would require engineering design and permit approvals.

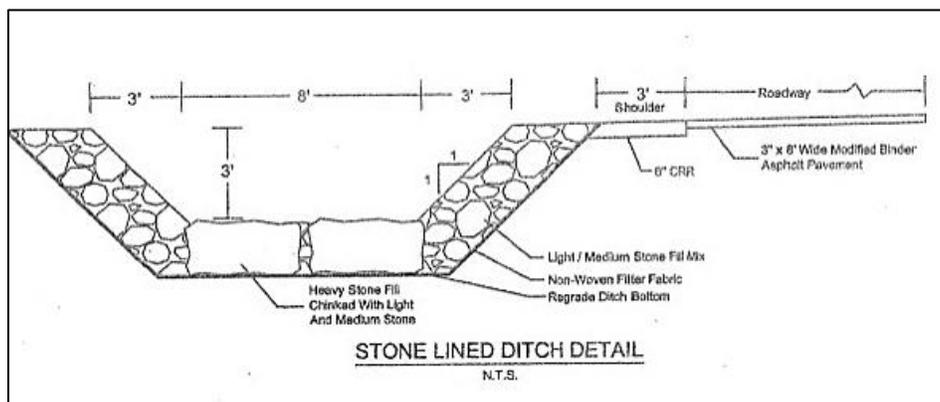
Jurisdiction

Town of Manheim



(Above) Example of ditch repairs needed after summer 2013 floods;

(Below) Project rendering of Timmerman Road project





RC 14. Creek Road Stream Bank Stabilization, Town of Danube

Project Description

The 2013 summer flood caused severe erosion to the southern bank of the Nowadaga Creek, which also forms the roadway shoulder and clear zone for Creek Road, County Route 102 in the Town of Danube. This project would involve the installation of approximately 300 linear feet of stacked and pinned stone along the stream bank on Creek Road. The stacked stone wall would be approximately 300 feet long, six feet high, and three feet wide. A guiderail would also be installed in the project area.

Creek Road Stream Bank Stabilization

Recovery Support Function: Natural and Cultural Resources/Infrastructure

Estimated Cost: \$100,000

Assets Made More Resilient: Creek Road; Nowadaga Creek

Risk Reduction & Benefits: Increase resiliency of Creek Road; reduce risk of failure of roadway in future flood events; Reduce sediment load into Nowadaga Creek

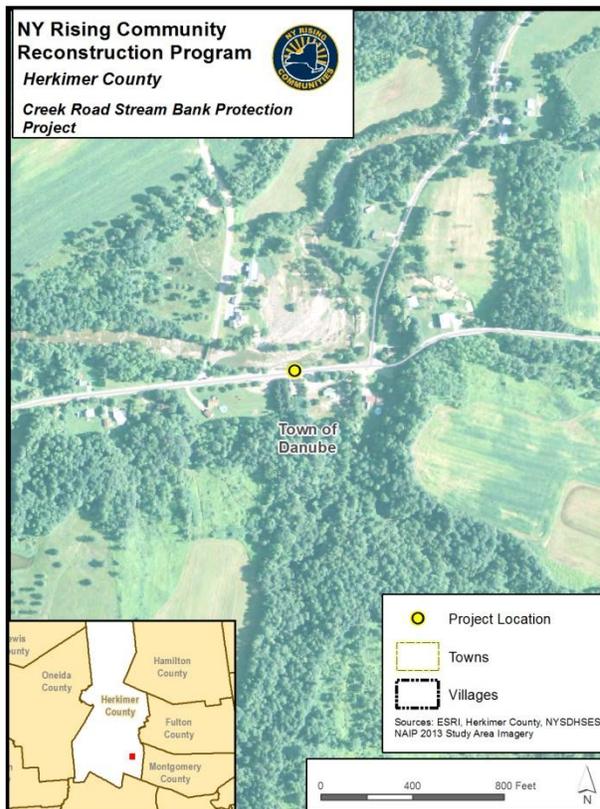


Figure 19. Location of Creek Road Stream Bank Stabilization Project

Strategies

The strategy that this project will help advance is: "Invest in key infrastructure facilities and systems to promote economic and ecological sustainability."

Estimated Project Costs

The total cost of the project is estimated at \$100,000, which would include engineering, construction and inspection costs. The estimated project cost was provided by the Herkimer County Highway Department. Contract documents would be developed by the Herkimer County Highway Department.



Potential Funding Sources

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Environmental Facilities Corporation Clean Water State Revolving Fund
- Environmental Facilities Corporation Green Innovation Grant Program
- NYS Research and Development Authority Cleaner, Greener Communities Program
- Empire State Development Environmental Investment Program

Project Benefits

Implementation of the project would ensure the future safety and stability of Creek Road and would protect it from future erosion and collapse. Implementation of the project would stabilize the streambank and reduce sediment loading into Nowadaga Creek preserving its flow capacity.

Cost Benefit Analysis

This is a fairly low cost project that has multiple co-benefits, including the increased resilience and protection of Creek Road as well as the environmental benefits of decreased sediment load into the Nowadaga Creek.

Risk Reduction Analysis

This project increases the resiliency of Creek Road, making it less vulnerable to failure and collapse during future flood events. Since road flooding and shoulder collapse on major roads poses an important threat to the deployment of emergency vehicles and services, this project also reduces risk to residents of the Town of Danube who will benefit from improved road accessibility and safety.

General Timeframe for Implementation

This project would be implemented in the near term (0 to 18 months) once funding is available.

General Status of Project

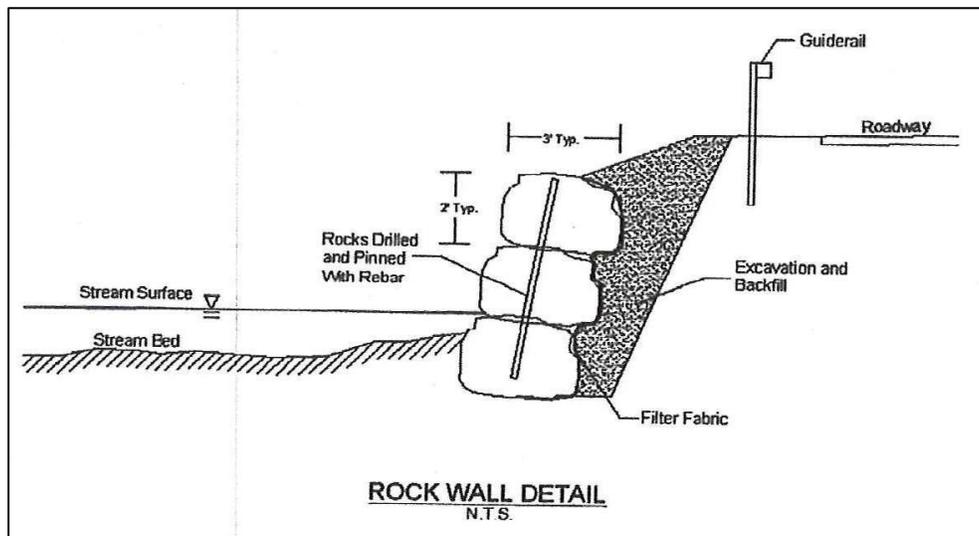
The project is in the conceptual / planning phase and would require engineering design plans and permit approvals. It is anticipated that US Army Corp of Engineers and DEC permits will be required.

Anticipated Project Lead

Herkimer County Department of Highways and the Town of Danube



(Above) Example of damage caused to road shoulder from 2013 flooding



(Above) Creek Road Stream Stabilization Project Rendering



RC 15. Gulf Road Bank Repairs and Stabilization, Town Of Winfield

Project Description

The 2013 summer flood caused severe erosion to the common area of soil that forms the bank of a tributary of the Unadilla River and the road edge of Gulf Road, County Route 153 in the Town of Winfield. In several areas there is less than five feet separating the road from the creek. This project would involve the installation of approximately 900 linear feet of stacked and pinned stone along five different locations on Gulf Road, County Route 153. The stacked stone wall would be approximately five feet high by three feet wide. A box beam guiderail would also be installed along these areas and for a length of 1,800 feet with 22 end sections.

Gulf Road Bank Repairs and Stabilization

Recovery Support Function:

Infrastructure

Estimated Cost: \$300,000

Assets Made More Resilient:

Gulf Road; Unadilla River

Risk Reduction & Benefits:

Increase resiliency of Gulf Road; reduce risk of failure of roadway in future flood events; Reduce sediment load into Unadilla River

Strategies

The strategy that this project will help advance is: “Invest in key infrastructure facilities and systems to promote economic and ecological sustainability.”

Estimated Project Costs

The total cost of the project is estimated at \$300,000, which would include engineering, construction and inspection costs. The estimated project cost was provided by the Herkimer County Highway Department. Contract documents would be developed by the Herkimer County Highway Department.

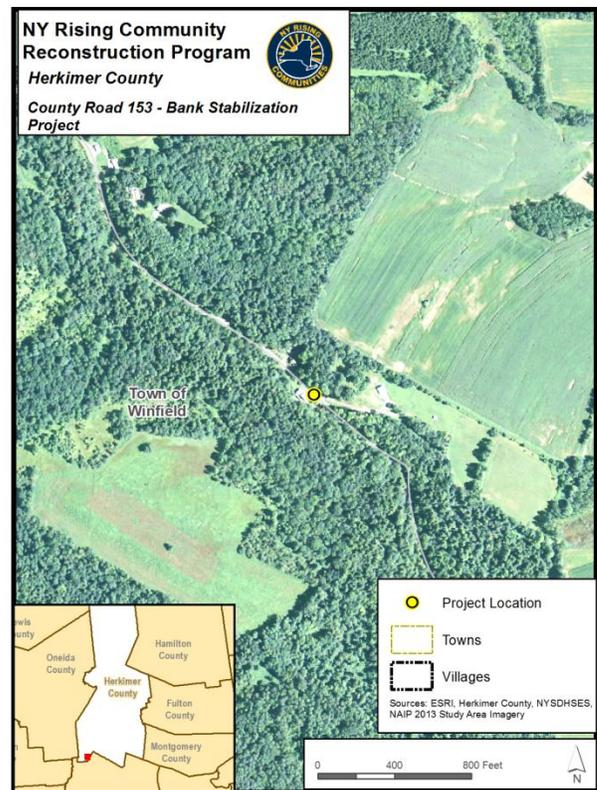


Figure 20. Location of Gulf Road Bank Stabilization Project



Potential Funding Source

Funding sources available for this project include:

- NY Rising Community Reconstruction Program
- Environmental Facilities Corporation Clean Water State Revolving Fund
- Environmental Facilities Corporation Green Innovation Grant Program
- NYS Research and Development Authority Cleaner, Greener Communities Program
- Empire State Development Environmental Investment Program

Project Benefits

Implementation of the project would ensure the safety and stability of Gulf Road and would protect the integrity the road even during future flood events.

Cost Benefit Analysis

This is a fairly low cost project that has multiple co-benefits, including the increased resilience and protection of Gulf Road as well as the environmental benefits of decreased sediment load into the Unadilla River.

Risk Reduction Analysis

This project increases the resiliency of Gulf Road, making it less vulnerable to failure and collapse during future flood events. Since road flooding and shoulder collapse on major roads poses an important threat to the deployment of emergency vehicles and services, this project also reduces risk to residents of the Town of Winfield who will benefit from improved road accessibility and safety.

General Timeframe for Implementation

This project would be implemented in the near term (0 to 18 months) once funding is secured.

General Status of Project

The project is in the conceptual / planning phase and would require engineering design plans and permit approvals. It is anticipated that US Army Corp of Engineers and DEC permits will be required.

Anticipated Project Lead

Herkimer County Department of Highways and the Town of Winfield



(Above) Example of road damage from summer 2013 flooding



B. PROPOSED RESILIENCY PROJECTS



Steele Creek, Village of Ilion

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 to complete the projects listed below, which could include permits from the NYS Department of Environmental Conservation, 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.



RS 1. Watershed Planning, Regulation, and Compliance

Project Description

The short-term objective of projects that fall under the Watershed Planning, Regulation, and Compliance category is to equip local governments and decision makers with advanced strategies, policies, and procedures to effectively manage the land use practices, development, and stormwater issues that affect creeks and contribute to local flooding. The long-term goal of projects in this grouping is to gradually help communities progress toward a safer, more flood resilient future.

Improved planning is needed at the local, watershed, and Countywide scales in the form of comprehensive plans and floodplain management. Due to the dispersed and systemic nature of stormwater runoff, creek ecology, and flooding issues, a holistic approach is critical for the consideration of upstream actions and downstream impacts. Planning offers the opportunity to increase collaboration across municipal borders to ensure comprehensive and uniform approaches to watershed management. Such collaborative efforts could be codified in official watershed planning commissions. Another benefit of planning is the ability to utilize tools such as Geographic Information Systems (GIS), future data projections, scenario testing, and public involvement to balance the needs for long-term risk reduction and economic development.

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. Projects that seek to commence or enhance a community’s level of participation can be found in the Watershed Planning, Regulation, and Compliance project category.

Regulation of development in the floodplain is necessary because of the negative externalities that result downstream from such development as well as the high costs to the Community that result from unnecessary repetitive flood damages. Regulatory tools can take many forms, but typically involve policies aimed at the gradual phasing out of new development in the floodplain through local zoning and building code ordinances, floodplain overlays, and stream buffer districts. Permitted improvements to structures already existing in flood-prone areas can also be limited unless the property owner takes measures to reduce the structure’s vulnerability, such as by elevating the structure and its utilities. Regulation should also address development outside of the floodplain because stormwater runoff from developments with impervious surfaces upstream contributes to flooding downstream. To that end,

Watershed Planning, Regulation, and Compliance

Recovery Support Function:

Community Planning and Capacity Building

Risk Reduction & Benefits:

Policy and enforcement frameworks upon which to build long-term flood risk reduction and resiliency



municipalities should coordinate to enact uniform stormwater management ordinances and flood prevention laws throughout the watershed.

Projects directed at compliance ensure that regulatory policies and programs, established to reduce risk to life and property, are upheld and provided with adequate resources to be effective. Compliance measures may include, but are not limited to, adequately staffed and trained building inspection departments, a fastidious site plan review process, and on-site stormwater management performance standards and testing. Stronger regulation of development and land uses in the floodplain, as well as incentives designed to encourage development outside of flood risk areas, may result in property owners wishing to relocate to less flood-prone areas. To accommodate this, and also facilitate compliance with flood prevention regulations, a program of property acquisition and relocation could be developed under this project category.

Strategies

The strategies that these types of projects will help advance include:

- *Develop appropriate zoning and land use policies at the local level to manage the use of land in floodplains to reduce risk and susceptibility to flood damages*
- *Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses*

Locations

Watershed Planning, Regulation, and Compliance projects in Herkimer County would take place on a countywide scale.

Potential Funding Sources

Many regulatory actions can be taken by the County Board of Legislators or local legislative bodies in towns, villages, and cities at a low cost to the County or municipality. Developing a comprehensive master plan for a village or town in Herkimer County would cost around or under \$100,000 and changing the zoning regulations would likely cost under \$50,000.



Projects that would benefit from outside planning or engineering expertise, such as the development of a watershed study, a comprehensive plan, an economic redevelopment plan, or a local waterfront revitalization plan, may find funding through a variety of funding sources²:

- Empire State Development Strategic Planning and Feasibility Studies,
- NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants,
- U.S. Environmental Protection Agency Clean Water State Revolving Fund,
- EPA’s Wetlands Funding
- U.S. Army Corps of Engineers (USACE) Floodplain Management Services Program, and
- USACE’s Planning Assistance to States Program

Funding to support local municipal staff for compliance efforts—such as a building inspectors and floodplain managers—would typically be sourced at the local level. However, there may be funding opportunities for workshops and training of local staff.

Benefits

Several long-term benefits can be taken from Watershed Planning, Regulation, and Compliance. The very act of planning and developing policies to improve the ecology of the watershed and the safety of nearby residents can lead to greater community awareness of flood risks and sustainable floodplain management. Municipal representatives will make policy and development decisions based on better information, with the planning studies to back up their choices. Enforcement officers will be better trained to understand the gravity of compliance with flood prevention laws and codes. Over the long term, improved planning, regulation, and compliance will lead to fewer at-risk structures in the floodplain and/or enhanced resiliency of structures that remain there. This includes the gradual relocation of residential structures, commercial buildings, and public and non-profit facilities alike that need not be directly in harm’s way. These translate to reduced risk to the life and property of residents, business owners, and government facilities, lower future flood damages and associated repair costs, and decreased impact to government services, Community functions, and the local economy.

Project List

Table 55 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.

² A full description of available funding sources is listed in Section IV-B.



Table 55. Planning, Regulation, and Compliance Projects

Project #	Project Title	Project Description	Project Location
RS 1 - a	Develop Comprehensive Master Plans	Update or create Comprehensive Master Plans for the Towns and Villages most at risk of flood damage	Municipalities Countywide
RS 1 – b	Uniform Floodplain & Land Use Regulations	Develop uniform floodplain and land use regulations based on a watershed scale for consistency throughout watershed, upstream and downstream	Municipalities Countywide
RS 1 – c	NFIP Community Rating System	Participate in the National Flood Insurance Program’s Community Rating System	Municipalities Countywide
RS 1 - d	Establish Inter-municipal Drainage Districts	Establish inter-municipal drainage districts to address stormwater management and watershed issues from their source to their discharge	Countywide



RS 2. Education and Communication

Education and Communication

Recovery Support Function:

Community Planning and Capacity Building

Risk Reduction & Benefits:

Increased awareness of flood risk, emergency management, and sustainable development that will lead to long-term risk reduction and resiliency

Project Description

Education and communication of risk and risk management go hand in hand for influencing long-term hazard mitigation and resiliency. Not only do residents need to know when they may be at risk, they need to know what to do with that information to remove themselves from that risk in both the immediate and long term.

The immediate-term goal of Education and Communication projects is to put in place means of sharing hazard information that is reliable and consistent; both easily accessible and able to be broadcasted widely; and ideally, able to be updated in real time. One example of this is the installation of stream gauges that transmit water levels in creeks and lakes in real time and alert municipal representatives, emergency response personnel, and the public when they reach a certain threshold. Another example is the

establishment of an online repository of emergency management related information to which residents can be directed preceding and following a flood event. Such a site would have static information, such as emergency shelter locations, as well as live feed information pulled from official and social media sites, including road closures and open grocery stores and gas stations.

The long-term goal of Education and Communication projects is to equip the public and local leaders with a better understanding of the factors that contribute to risk in the Community and strategies for addressing each of those factors. Educational projects may address personal preparedness by holding public events on evacuation procedures and distributing preparedness kits. Educational projects may also strive to influence development decisions that tend to affect flood risk by informing the public, developers, decision makers, and others on the best practices of sustainable development, resilient construction, floodplain restoration, and green infrastructure.

Strategies

The strategies that these types of projects will help advance include:

- *Develop appropriate zoning and land use policies at the local level to manage the use of land in floodplains to reduce risk and susceptibility to flood damages*
- *Develop a multi-tiered system to alert emergency personnel and residents of flood events and to manage and communicate emergency-related info and resources*
- *Centralize flood preparation and response efforts to foster regional cooperation in approaching flooding and related issues*
- *Expand educational efforts geared towards residential and business property owners*



Locations

Education and Communication projects in Herkimer County would take place at a countywide scale.

Potential Funding Sources

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 curriculum, employee trainings, and public workshops. The County and municipalities may find funding through State or Federal programs, such as:

- FEMA Independent Study Program (ISP),
- FEMA's Hazard Mitigation Assistance Program (HMAP), and
- EPA Clean Water Act Nonpoint Source Grant (Section 319 Grants).

Benefits

Improved education and communication of risk and long-term resiliency can lead to risk reduction, as well as social, environmental, and economic benefits. An informed public will be better prepared for extreme precipitation and flood events with an understanding of the dangers they face and an evacuation plan in place. Early warning systems transmitting real-time flood information will give proper notice for residents to evacuate to shelters, as well as for emergency responders to mobilize their services. These examples of improved emergency management procedures will reduce risk to residents and create economic benefits by cutting down on costly rescue and response operations. In many cases, residents who are most vulnerable to emergency events, including economically disadvantaged populations, live in flood-prone areas. Educational programming and emergency communications that are targeted to vulnerable populations will result in social benefits.

Over the long term, it is expected that informed residents and business owners will choose to locate in safer, less flood-prone areas, allowing for the establishment of riparian buffers and an expanded floodplain. This gradual migration to higher elevation areas will have social and economic benefits to citizens via lower insurance premiums and less frequent flood damages, as well as environmental benefits to the Community overall through the clean water and healthier habitat of the restored creek corridor.

Project List

Table 56 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.



Table 56. Education and Communication Projects

Project #	Project Title	Project Description	Project Location
RS 2 – a	Enhanced Educational Programs	Enhance educational programs for local officials on floodplain regulations and enforcement needs	Countywide
RS 2 – b	Install Stream Gauges & High Water Markers	Install stream gauges and high water markers along bridges in Bellinger Brook, Fulmer Creek, East Canada Creek, Moyer Creek, and Steele Creek	Countywide
RS 2 – c	Enhance Mohawk River Monitoring System	Enhance the monitoring system being put in place by the Canal Corporation along the Mohawk River; evaluate following installation.	Along Mohawk River Countywide
RS 2 – d	Integrated Public Alert Warning System	Adopt and utilize FEMA’s Integrated Public Alert Warning System	Countywide
RS 2 – e	Enhance Emergency Services website	Maintain and enhance the Herkimer County Emergency Services website so that it can serve as a single point repository for web-based information	Countywide
RS 2 – f	Outreach Campaign	Develop an outreach campaign to increase participation by the Villages, Towns, and public in the Countywide Alert System, which provides automatic messages (via various electronic means – e.g., text, email) to a voluntary contact registry.	Countywide
RS 2 – g	Circulate Pre-Disaster Information	Circulate relevant pre-disaster information via flyers with tax bills or municipal mailings.	Countywide
RS 2 – h	Public Workshops and Information Sessions	Routinely schedule workshops and public information meetings on emergency preparedness.	Countywide



RS 3. Capacity Building

Project Description

The purpose of Capacity Building projects is to reduce risk to County residents by improving the coordination, effectiveness, and decision-making capabilities of local governments. The Community identified an opportunity to share risk and emergency-related information and services between municipalities and the County, which would lead to improved collaboration, communication, and delivery of services.

Improved data transmission and communications technology, combined with decreasing village and town populations, have created an opportunity to share and consolidate services. Rather than every village having its own 911 call center, for example, several local governments can pool funds to create a shared emergency call center. Shared staffing, training, equipment, and facility costs translate to lower operating budgets for each community. The smallest villages might consider dissolution or consolidation with an adjoining village.

Shared or consolidated funding can free up capital from local communities to carry out resiliency projects. Furthermore, shared operations can lead to improved coordination in times of emergency. For instance, consolidated emergency services could mean all communities use communications equipment from the same manufacturer, over the same frequency, etc., thereby coordinating and simplifying communications and response.

There is also a need at the municipal and county levels for additional staffing to be able to apply for the many State and Federal programs that fund hazard mitigation, environmental, and economic development projects. Slim tax revenue, slashed operating budgets, and bare-bones levels of public employment mean that existing staff lack the time and resources necessary to apply for grants. The provision of staff dedicated to grant applications and grants management at the municipal, inter-municipal, or County level, would help communities capitalize on these funding opportunities.

Finally, the Committee expressed a need for more accurate and complete data that relates to flooding, including mapping of watersheds and flood-prone areas, hydraulic and hydrologic modeling of creeks, and mapping and capacity studies of storm sewer infrastructure. Projects under the Capacity Building category would increase the availability and accessibility of such data to local and County governments, non-profits, and the public, to inform decisions on flood prevention policies, adoption of long-term plans, allocation of infrastructure improvement funding, and approval or denial of development projects.

Capacity Building

Recovery Support Function:

Community Planning and Capacity Building

Risk Reduction & Benefits:

Improved knowledge and resources for informed decision-making to build long-term flood risk reduction and resiliency



Strategies

The strategies that these types of projects will help advance include:

- *Centralize flood preparation and response efforts to foster regional cooperation in approaching flooding and related issues*
- *Invest in key infrastructure facilities and systems to promote economic and ecological sustainability*
- *Identify, enhance and expand open space and recreational opportunities, such as walking/biking trails and fisheries, along streams and rivers*

Locations

Capacity Building projects in Herkimer County would take place at a countywide scale.

Potential Funding Sources

Projects under Capacity Building that involve the development of data to inform watershed planning decisions—such as watershed GIS data and H&H studies—will require outside planning or engineering expertise. Projects that consolidate services or establish shared government services may require outside consultation and coordination amongst the sharing communities. Communities may find funding for these activities through programs such as:

- NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants,
- NYS DEC/Environmental Facility Corporation’s Wastewater Infrastructure Engineering Planning Grant,
- NYS DOS Local Government Efficiency Program,
- U.S. Environmental Protection Agency (EPA) Clean Water State Revolving Fund,
- EPA’s Wetlands Funding
- U.S. Army Corps of Engineers (USACE) Floodplain Management Services Program, and
- USACE’s Planning Assistance to States Program

Funding for capacity building in the form of local municipal staff—such as for grants application and management—would typically be sourced at the local level. However, there may be funding opportunities for workshops and training of local staff.

Benefits

Projects under the Capacity Building category can expand the resources available to the Community to support long-term resiliency. Resources, in this context, include staff, funding, services, and information. The primary benefits of these projects will be improved government services and increased availability of capital for worthwhile resiliency projects. Additional and specialized staff can apply for a greater



number of grants and then manage the implementation of the funded grants. Consolidated services or municipalities can generate operational savings. The increased funding from grants and savings from consolidated services can make additional funds available to carry out critical resiliency projects. Shared or consolidated services can also improve the efficacy of government services that require cross-municipal coordination, such as emergency response. Finally, availability of funding for resiliency projects is only as good as the projects implemented, which should be based on solid watershed and risk reduction data. The benefit of building capacity in the form of GIS and H&H data is that decisions regarding creek restoration, hazard mitigation, and development will be reasonable, informed, and justifiable.

Project List

Table 57 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.

Table 57. Capacity Building Projects

Project ID	Project Title	Project Description	Project Location
RS 3 – a	Shared Recovery Manager	Share recovery manager/grant writer with other area municipalities to secure and administer grants and implement recommendations of the NYRCR program	Countywide
RS 3 – b	Flood Recovery Office	Develop a regional flood recovery and revitalization office. The shared recovery manager and grant writer would be positioned with this office to help coordinate recovery and revitalization efforts.	Countywide
RS 3 – c	Enhance Capacity Herkimer GIS	Support a designated staff member at the Herkimer/Oneida Comprehensive Planning Department for Herkimer County to enhance and expand the existing geographic information system (GIS) capacity and data collection efforts.	Countywide
RS 3 – d	GIS Infrastructure Mapping	Undertake GIS inventory and mapping of infrastructure including component features.	Countywide
RS 3 – e	GIS Inventory of Open Space	Perform GIS Inventory of county open space to identify opportunities for natural, recreational, and commercial uses.	Countywide



RS 4. Business Retention and Incentives

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 Committee expressed the need to ensure that existing business owners do not face the same flooding issues in the future. 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 witnessed business closures and economic decline over the last many years. The provision of upgraded drainage and stormwater infrastructure and creek restoration will go a long way to safeguarding these businesses and making it safer for new businesses to become established.

Business Attraction and Retention

Recovery Support Function:

Economic Development

Risk Reduction & Benefits:

Maintains and grows the tax base by reducing flood risk for existing commercial areas and improving infrastructure to attract and support new and expanding industries

Many projects in the Business Attraction and Retention category are directed toward upgrading infrastructure to attract new businesses to the area. Companies will be more likely to consider locating in Herkimer County if assured that water, sewer, transportation, and telecommunications infrastructure is capable of handling modern operations. Furthermore, infrastructure projects are a selling point and incentive for attracting large-scale corporate and educational investments, such as the Healthcare Program Initiative and business park concept at the Herkimer County Community College. Infrastructure projects that are designed to deliver adequate and sustainable levels of service to these centers of economic activity and employment will help to build economic resiliency for Herkimer County in the future.

Other projects in the Business Attraction and Retention category focus on mitigating flooding in commercial areas that affects both the business locations and the access routes to the commercial areas. Though the floodwaters have receded, several commercial areas around Herkimer County face frequent flooding due to excess stormwater runoff, inadequate drainage infrastructure that backs up or becomes clogged with debris, and creek systems that have been channelized and constricted. Some areas include, but are not limited to the downtown commercial areas in the Village of Herkimer, the Village of Mohawk, the Village of Ilion, and the City of Little Falls, While managing the floodwaters of the magnitude faced in the summer of 2013 may not be feasible, infrastructure upgrades, creek stabilization and restoration, and the incorporation of green infrastructure can significantly reduce flooding in these areas in the future.



Strategies

The strategies that these types of projects will help advance include:

- Support efforts and investments that encourage an employer's ability to retain jobs or attract new businesses.
- Reduce overlapping municipal jurisdictions and governmental fragmentation that contributes to governmental inefficiency
- Enhance the resiliency and visual character of downtowns
- Preserve and build upon abundant natural, cultural and geographical resources

Locations

Business Attraction and Retention projects in Herkimer County would take place on both a countywide scale and in specific locations (see Figure 21), which include:

- Towns of Schuyler, Danube, German Flatts, Little Falls and Manheim
- Herkimer County Community College, Herkimer
- City of Little Falls
- Town of Ohio

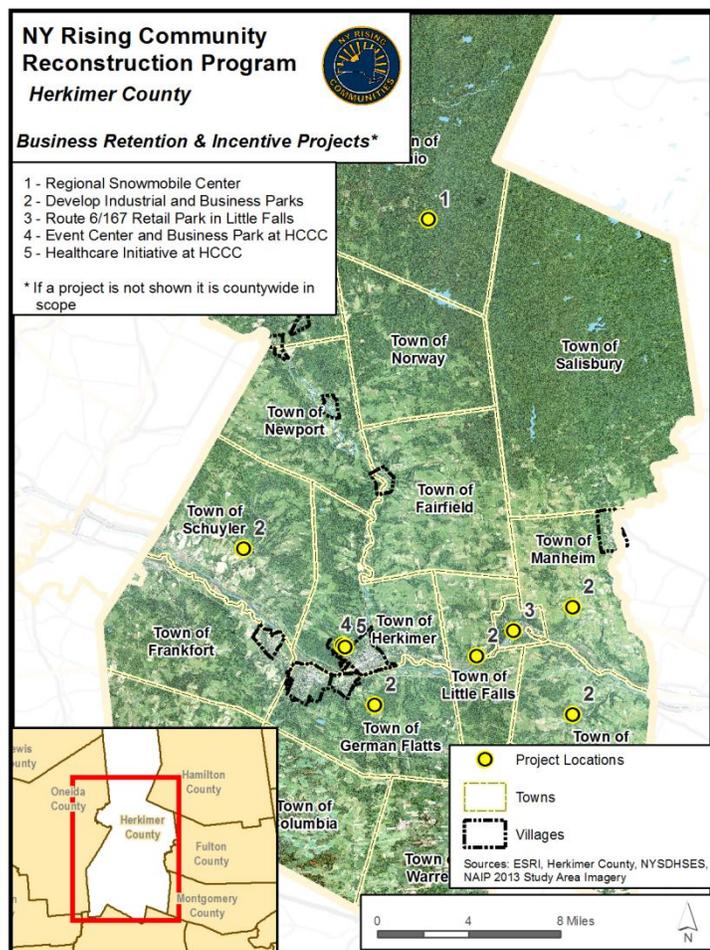


Figure 21. Locations of Business Retention & Incentive Projects



Potential Funding Sources

Projects that aim to reduce flooding near existing economic areas and to enhance infrastructure for new economic areas may find funding through programs such as:

- Empire State Development Grant Funds,
- NYS Community Development Block Grant Program,
- New York Main Street Technical Assistance,
- NYS DEC/Environmental Facility Corporation's Wastewater Infrastructure Engineering Planning Grant,
- Environmental Facilities Corporation – Green Innovation Grant Program
- NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants
- NYS DOS Local Waterfront Revitalization Program,
- U.S. Environmental Protection Agency (EPA) Clean Water State Revolving Fund,
- EPA's Wetlands Funding
- USACE's Floodplain Management Services Program, and
- USACE's Planning Assistance to States Program

Projects can also be undertaken by the local community or County through a variety of funding strategies, including special tax districts, stormwater fees, and tax increment financing.

Benefits

The main benefits of projects in the Business Attraction and Retention category are economic; however, risk reduction, as well as social and environmental benefits can also be captured. The mitigation of flooding in commercial areas will help to retain existing businesses and maintain the local tax base. Less frequent and severe creek bank overflows and drainage infrastructure back-ups leads to a risk reduction for residents and properties. Because businesses are able to maintain or resume operations more quickly, employment and income will be more stable, leading to social benefits for the employees. Attracting new businesses to the area will bring direct and indirect economic benefits of construction, employment, tax revenue, and ancillary support services. Infrastructure upgrades for new and existing economic developments should incorporate green infrastructure techniques to the greatest extent possible. This will result in environmental benefits from reduced stormwater runoff, improved water quality in the creeks, and less damage to the creeks in extreme precipitation events.

Project List

Table 58 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project, including a brief project description, in Section V: Schedule for Implementation.



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Table 58. Business Attraction and Retention

Project ID	Project Title	Project Description	Project Location
RS 4 – a	Develop Industrial and Business Parks	Develop business and industrial parks in the Towns of Schuyler, Danube, German Flatts, Little Falls, and Manheim as recommended by the Mohawk Valley Economic Development District.	Towns of Schuyler, Danube, German Flatts, Little Falls and Manheim
RS 4 – b	Build an Event Center and Business Park at HCCC	Develop an event center and business park at Herkimer County Community College as recommended by the Mohawk Valley Economic Development District	Herkimer County Community College, Herkimer
RS 4 – c	Develop Route 167 Retail Park in Little Falls	Develop the Route 167 Retail Park in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls
RS 4 – d	Improve Access to Industrial Park	Improve access routes to the Industrial Park in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls
RS 4 – e	Expand Healthcare Initiative at HCCC	Expand the Growing Healthcare Initiative at the Herkimer County Community College	Herkimer County Community College, Herkimer
RS 4 – f	Create a Pop-up Store Incentive Program	Develop an incentive program for pop-up stores where retailers can lease space for a short time to test retail concepts without the risk of a long-term lease	Countywide
RS 4 – g	Shared Services	Evaluate potential for shared services and municipal consolidation	Countywide
RS 4 – h	State Efficiency Grants	Utilize state government efficiency grant for evaluation and implementation	Countywide
RS 4 – i	Regional Snowmobile Center	Develop and construct a regional snowmobile center in the Town of Ohio as recommended by the Mohawk Valley Economic Development District	Town of Ohio
RS 4 – j	Protect Main Street Business Areas	Relocate and flood proof Main Street / downtown businesses in high risk areas. For example, businesses along West Main Street in the Village of Mohawk that have repetitively flooded in the past could be flood proofed or moved to vacant buildings that are located outside of the flood zone.	Countywide
RS 4 – k	Herkimer County Tourism Map	Develop a Herkimer County specific map with coordinated way finding and signage for waterway tourist destinations	Countywide
RS 4 – l	Develop Marketing Plan	Develop a plan to market County to outdoor enthusiasts and heritage tourists	Countywide



RS 5. Community Development

Project Description

Economic resiliency is critical for communities faced with susceptibility to natural hazards because a downturn in economic activity following a disaster will prolong the recovery process. Remarkably, the heritage attached to Herkimer County’s creeks and rivers, the same water bodies that pose the flood hazards, may be a key to future economic resiliency. The Community expressed the desire to capitalize on its historic, natural, and cultural resources to revitalize its downtowns and build a more robust tourism industry.

Herkimer County is fortunate to have a number of historic buildings, factories, and mills, quaint village and town centers, all of which harken back to its history as a major transportation and manufacturing hub. These heritage areas are connected with the beautiful Mohawk River and tributaries and the celebrated Erie Canal. In recent decades, development trends have taken the commercial activity away from these historic areas to the outskirts of cities and towns, resulting in some unintended adverse impacts. Two important consequences include the large-scale conversion of green space to impermeable surfaces for buildings and parking lots, which contributes significantly to excess stormwater runoff and sewer backups, and disinvestment in existing downtowns, which has led to deteriorating historic landmarks and struggles for small businesses.

Projects under the Community Development category seek to reverse both of these trends by turning economic investments towards the revitalization of downtowns and the restoration of water resources. Projects aim to implement infrastructure improvements, streetscape improvements, and economic development incentives in downtown areas to attract new business owners and residents to invest in homes and commercial establishments in these areas. Projects also seek to reinvent Herkimer County’s tourism industry by capitalizing on the Mohawk River and Erie Canal with new and enhanced access points, recreational opportunities, waterfront destinations, and recreational heritage/nature trails connecting them all. Working together, these projects will redirect investments in housing and businesses to existing downtown areas that are less flood-prone, while enhancing waterfront areas for flood-resilient natural and cultural activities.

Community Development

Recovery Support Function:

Economic Development

Risk Reduction & Benefits:

Directs housing and business investments to less flood-prone areas and enhances historic, cultural, and recreational opportunities along waterfronts

Strategies

The strategies that these types of projects will help advance include:

- *Support efforts and investments that encourage an employer’s ability to retain jobs or attract*



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new businesses.

- Reduce overlapping municipal jurisdictions and governmental fragmentation that contributes to governmental inefficiency
- Enhance the resiliency and visual character of downtowns
- Preserve and build upon abundant natural, cultural and geographical resources

Locations

Community Development projects in Herkimer County include sites in the Village of Frankfort, the City of Little Falls, the Towns of Frankfort, Schuyler, and Newport,, and Countywide (see Figure 22 below).

Potential Funding Sources

Projects focused on community development that seek to redevelop downtown areas or enhance water- and tourism-related infrastructure may find funding through programs such as:

- Empire State Development Grant Funds,
- Market New York,
- NYS Council on the Arts – Arts, Culture, and Heritage Projects,
- NYS Community Development Block Grant Program,
- New York Main Street Technical Assistance,
- Office of Parks, Recreation, & Historic Preservation – Environmental Protection Fund Municipal Grant Program,
- NYS DOS – Local Waterfront Revitalization Program,
- Canalway Grants Program,

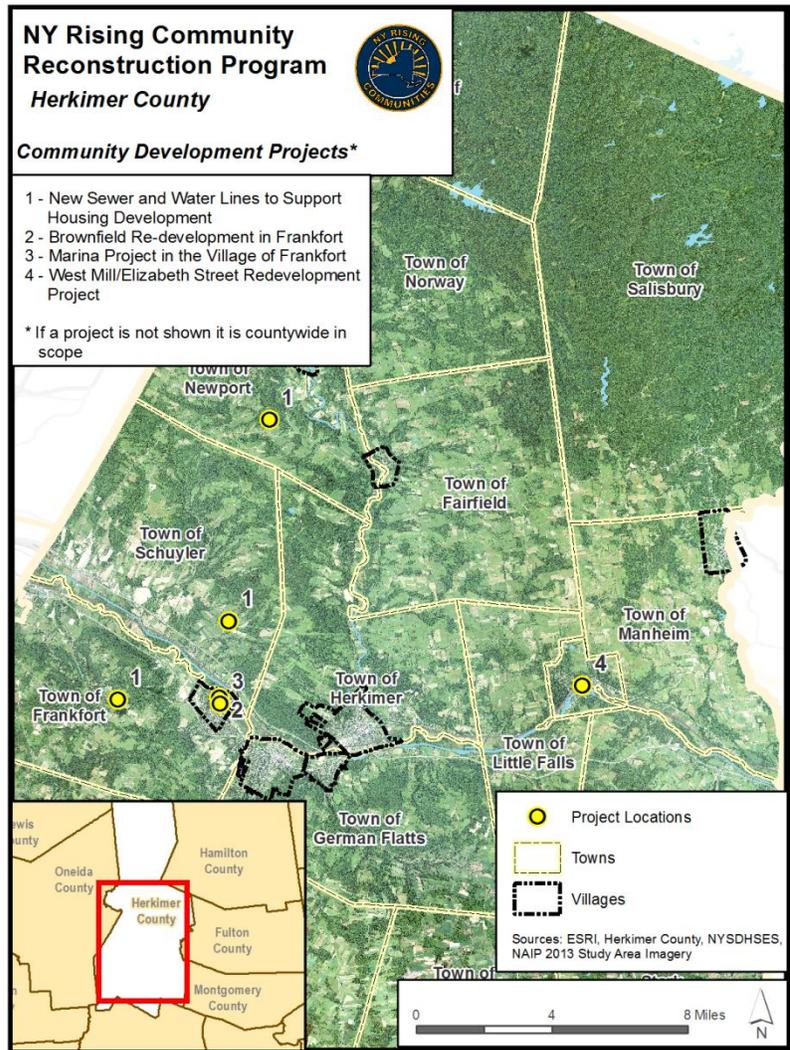


Figure 22. Locations of Community Development Projects



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- Environmental Facilities Corporation – Green Innovation Grant Program, and
- NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants.

Projects can also be undertaken by the local community or County through a variety of funding strategies, including special tax districts, stormwater fees, and tax increment financing.

Benefits

The benefits of Community Development projects include risk reduction and environmental and economic benefits. Risk reduction is achieved by reigning in new development in the watershed, which is contributing to stormwater runoff and flooding, and instead incentivizing investment in existing downtown areas and brownfield sites outside of the floodplain. Environmental benefits are captured by reversing the development trends that create impervious surfaces and degrade water quality. Environmental benefits will also be realized by restoring waterfronts and creating greenways, which create riparian buffers and serve to improve wildlife habitat and water quality in and around rivers and creeks. The restoration of the waterways is also good for the economy by attracting tourists to the local recreational and cultural activities, such as boating, fishing, and heritage travel.

Project List

Table 59 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project, including a brief project description, in Section V: Schedule for Implementation.

Table 59. Community Development

Project ID	Project Title	Project Description	Project Location
RS 5 – a	Brownfield Redevelopment in Frankfort	Implement recommendations from the Pre-Nomination brownfield redevelopment study completed for an approximately 470-acre area located along Main Street and the Mohawk River in the Village of Frankfort	Village of Frankfort
RS 5 – b	New Sewer and Water Lines to Support Housing Development	Construct new water and sewer lines in the Towns of Frankfort, Schuylers, and Newport to support a new housing development as recommended by the Mohawk Valley Economic Development District	Towns of Frankfort, Schuylers, and Newport
RS 5 – c	Smart Growth Infrastructure	Integrate Smart Growth and green infrastructure into downtowns and waterfront revitalization efforts	Countywide
RS 5 – d	West Mill/Elizabeth Street Redevelopment Project	Implement the West Mill/Elizabeth Street redevelopment project in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls



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Project ID	Project Title	Project Description	Project Location
RS 5 – e	Implement Marina Project in the Village of Frankfort	Implement the marina project in the Village of Frankfort to enhance recreational and economic opportunities near the waterfront as recommended by the Mohawk Valley Economic Development District	Village of Frankfort
RS 5 – f	Preserve Historic Structures		Countywide



RS 6. Protection of Vulnerable Populations and Enhancing Health and Social Service Programs

Project Description

Vulnerable populations are characterized by groups of people whose needs may not be addressed by traditional emergency management plans or their circumstances may create barriers to accessing emergency services. Vulnerable populations include people with disabilities, low and very low-income populations, non-English speaking populations, the elderly, young children, the homeless, and people at risk of becoming homeless. During an emergency, vulnerable populations may have lower mobility making them unable to evacuate their home without assistance, have fewer resources to recover from a catastrophic event, and may have lower communication abilities – either not having access to standard communication channels or not being able to understand the emergency messages. As such, municipalities should be proactive and forward thinking in how they can meet the various needs of their most vulnerable populations during an emergency.

The County identified the need to ensure that the most vulnerable populations have the necessary information to adequately prepare for disasters and temporary shelter in the event of an emergency. To meet this need, the Committee identified several projects that increase the County’s ability to meet the needs of its vulnerable populations during and after an emergency event. 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 database would be populated by the County from existing information and would allow residents to voluntarily add their names. The County also identified the need to have a good understanding of the existing emergency preparedness plans in place at senior and nursing home facilities to better understand and prepare for potential medical emergencies and confirm the necessary shelter capacity.

Several communities cannot access the normal County emergency communication channels. They include migrant, seasonal farm workers that may not speak English as their first language and the Amish community. A plan to reach out to these communities and understand their needs during an emergency should be implemented and culturally appropriate outreach materials developed to help them better prepare for future disasters.

Lastly, it was identified that volunteer emergency response organizations were an invaluable resource to the residents following the summer 2013 flooding; providing food, water and other supplies to those

Protection of Vulnerable Populations and Enhancing Health & Social Service Programs

Recovery Support Function:
Health and Social Services

Risk Reduction & Benefits:
Improved capacity to prepare for and respond to future storm events; increased resiliency and protection for most vulnerable populations



who needed it the most. It is important that the County and State continue to provide support and resources to these organizations to ensure that they can provide future emergency response efforts that complement the County's own emergency services.

Strategies

The strategies that these types of projects will help advance include:

- *Develop a plan to ensure emergency services for vulnerable populations, including provision of medical supplies and temporary housing.*

Location

All of the projects included in this category would be implemented countywide.

Potential funding sources

A few potential funding sources that could be utilized to support these projects include:

- Centers for Disease Control's Public Health Emergency Preparedness Cooperative Agreement grant, and
- Federal Emergency Management Administration's Hazard Mitigation Assistance Funding.

Benefits

These projects are expected to improve the capacity of the County Emergency Services Operations as well as the County Public Health Department and Office of Aging to prepare for and respond to future storm events. These projects will help protect the most vulnerable populations, such as seniors, people with disabilities, and those who do not speak English as their first language. The projects include provisions for persons displaced during future emergencies by ensuring that they have access to shelter and resources required for human health and safety including 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.



Project List

Table 60 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.

Table 60. Protection of Vulnerable Populations and Enhancing Health and Social Service Programs

Project ID	Project Title	Project Description	Project Location
RS 6 – a	Enhance Vulnerable Population Registry	Update and enhance existing vulnerable population registry maintained by the Herkimer County Office of Aging. Develop public relations campaign to increase participation in the registry. Convert registry into a GIS database to enhance response efforts during an emergency.	Countywide
RS 6 – b	Emergency Preparedness Plans for Vulnerable Population Housing Facilities	Create mandate requiring nursing homes and other vulnerable population housing facilities to submit their emergency response plans to the Herkimer County Department of Health for review to ensure that the County has adequate sheltering capacity for persons with special medical needs and is fully prepared for any outstanding health issues.	Countywide
RS 6 – c	Develop Outreach Materials to Vulnerable Populations	Develop culturally appropriate outreach materials and outreach campaign for hard-to-reach vulnerable populations, such as migrant and seasonal farm workers that may not speak English and Amish populations.	Countywide
RS 6 – d	Support Volunteer and Non-profit Organizations	Continue to share resources with Herkimer-Oneida Organizations Active in Disasters (HOOAD), Catholic Charities, and others during and following disasters.	Countywide



RS 7. Improving Shelter Capacity

Project Description

Providing shelter before, during, and after an emergency is a critical determinant of survival during natural or manmade disasters. Shelters play an important role in reducing a community's vulnerability by providing a safe place where people can access food, water, healthcare, and important information on available services. Shelters also provide a refuge and supportive community space for those whose homes become uninhabitable during an emergency.

Provision of additional shelter capacity and safe accessibility of shelters were cited by the Committee as important needs. Many residents needed to evacuate before during and even after the storm, but did not because many primary and secondary roads were flooded and the nearest shelter could be miles away. Additionally, several of the schools that served as shelters, flooded during the 2013 summer storms and are located within the flood zone. Expanding emergency shelter options would help protect residents during and after a storm event or other disaster. Due to the large geographic size of Herkimer County, it is important that several emergency shelters are available to residents that will meet critical needs during a disaster, including the provision of emergency shelter, distribution of food, water and other supplies, and the dissemination of information. Additionally, shelters should be prepared to provide emergency medical attention if needed to evacuees. It is also critical that emergency shelters have emergency back-up power with multiple points of access in the event that key roads are flooded.

To meet these needs, the County needs to strategically evaluate existing shelter options to determine whether they are meeting the County's needs and identify potential alternative shelter locations. An important consideration for any shelter should be whether they are located in a flood zone and the potential flooding of roads that serve as access routes to the shelter. If a potential location being considered for a shelter cannot be accessed during an event due to road flooding, mitigation efforts should be considered to reduce or eliminate flooding on the roads of concern. Once alternative shelter locations have been established, appropriate provisions and back-up electricity generators should be purchased to prepare the facilities for any future emergency and the shelter should be registered with the American Red Cross.

Improving Shelter Capacity

Recovery Support Function:
Health and Social Services

Risk Reduction & Benefits:
Improved shelter capacity and access; reduced risk to public safety, particularly for vulnerable populations



Strategies

The strategy that these types of projects will help advance is, *“Work with Town of German Flatts and Herkimer County Community College to provide emergency shelter.”*

Location

The projects included in this category are located countywide and include the Town of German Flatts and the Herkimer County Community College in the Village of Herkimer (see Figure 23).

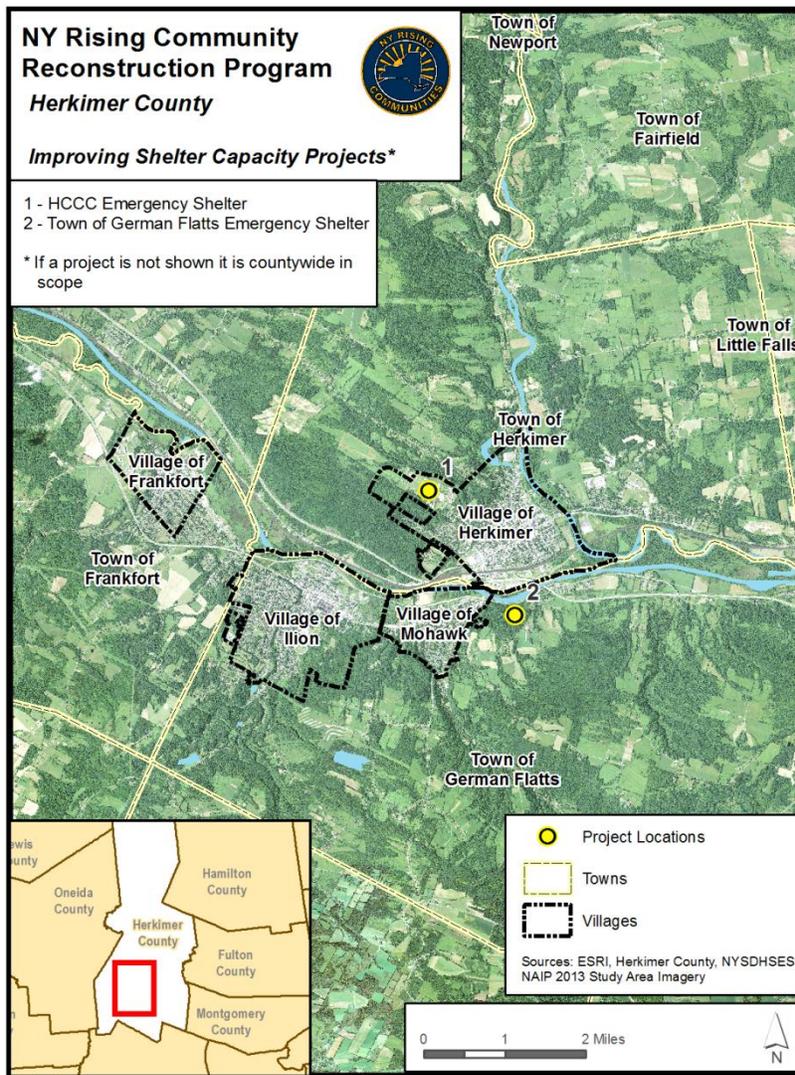


Figure 23. Locations for Emergency Shelter Projects



Potential funding sources

A potential funding source that could be utilized to support these projects includes the Federal Emergency Management Administration’s Hazard Mitigation Assistance Program funds.

Benefits

These projects are expected to improve the sheltering capacity of the County and build community resilience to respond to future storm events. The projects include provisions for persons displaced during future emergencies by ensuring that they have access to shelter and resources required for human health and safety including potable water, medical attention, heat, food, and electricity. These projects will help protect the most vulnerable populations, such as seniors, people with disabilities, and low to moderate income populations who may be most adversely affected during an emergency. Additionally, this project would reduce the risk of injury or poor health outcomes for all Herkimer County residents who are displaced from their home by providing a safe refuge.

Project List

Table 61 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project, including a brief project description, in Section V: Schedule for Implementation.

Table 61. Improved Shelter Capacity

Project ID	Project Title	Project Description	Project Location
RS 7 – a	Town of German Flatts Emergency Shelter	Utilize the new Town of German Flatts emergency shelter that is currently under construction to increase shelter capacity for vulnerable populations and purchase back-up generator to ensure continued operations during an emergency	Town of German Flatts
RS 7 – b	Register Shelters	Register all shelters in the County of Herkimer with the National Storm Shelter Registry (http://www.nssr.info/) to ensure that the Herkimer Emergency Operations Department is aware of all possible shelters and can share that information with the public	Countywide
RS 7 – c	HCCC Emergency Shelter	Develop and implement a plan to use Herkimer County Community College as an emergency shelter. Include improvements to ensure consistent road access to the College and back-up power generation	Village of Herkimer



RS 8. Flood Protection for Health and Social Service Facilities

Project Description

These projects will ensure adequate, safe, and reliable access to health and social service facilities during and after flooding events. Provision of shelter, food, and healthcare during and after storm events was cited by the Committee as an important need for many of the County’s municipalities in preparation for future storm events. The summer 2013 storm event in Herkimer County subjected roads and bridges to flooding that made them impassible, even for some emergency vehicles like fire trucks and ambulances. Road flooding isolated residents and made accessing emergency services dangerous and, in some cases, impossible until flood waters receded. For example, although the Little Falls Hospital (the only hospital in Herkimer County) did not flood, the access road did. Ambulances were unable to enter the hospital parking lot forcing emergency responders to perilously transport incoming patients across the flooded road by foot.

Flood Protection for Health and Social Service Facilities

Recovery Support Function:
Health and Social Services

Risk Reduction & Benefits:
Ensure safe and reliable access for emergency responders and residents to critical healthcare and social service facilities in the event of flooding

To meet these needs, the Committee suggested that the County identify roadways in close proximity to healthcare and social service facilities that are at risk of flooding. That evaluation would then determine alternate access routes or recommend mitigation strategies to reduce flooding on the at-risk roadways. Flood mitigation efforts around critical health and social service facilities could include improving the stormwater drainage system at critical choke points to reduce flooding and/or installing green infrastructure along roadways at highest risk of flooding. Green infrastructure along or upstream of roadways can help mitigate flood risk by recharging groundwater, slowing runoff velocities, and reducing stormwater volumes.³⁴ The Committee also recommended that the County undergo a comprehensive mapping and planning exercise as part of its Hazard Mitigation Plan to identify areas that could be physically isolated by floodwaters. After those areas have been identified, the County would develop plans to protect those residents and Community assets that could become isolated during flooding and determine contingency routes for evacuation.

Strategies

The strategy that these types of projects will help advance is, “Evaluate feasibility of elevating or re-aligning roads prone to flooding.”



Herkimer County NY Rising Countywide Resiliency Plan

Location

The projects included in this category are located countywide.

Potential funding sources

Potential funding sources that could be utilized to support these projects include:

- Federal Emergency Management Administration’s Hazard Mitigation Grant and the Pre-Disaster Mitigation Program
- U.S Housing and Urban Development Community Development Block Grant program
- U.S. Environmental Protection Agency Clean Water State Revolving Fund
- U.S. Army Corps of Engineers Floodplain Management Services Program
- EPA Wetlands Funding,
- EPA’s Hardships Grants Program for Rural Communities,
- USACE’s Planning Assistance to States Program, and
- New York State offers a Green Infrastructure Grant Program

Benefits

Accessing health and social service facilities during storm events will be made easier and safer by implementing flood mitigation techniques for at-risk roadways, such as improved stormwater drainage systems or green infrastructure. Safe and more reliable transportation routes to healthcare facilities could mean the difference between life and death during an emergency for someone with a critical health issue. These projects therefore provide health and safety benefits for Herkimer County residents, particularly for vulnerable populations with pre-existing medical conditions. Providing flood protection for health and social service facilities also protects emergency responders, who might otherwise put themselves at risk attempting to access facilities surrounded by floodwaters.

Project List

Table 62 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.



Table 62. Flood Protection for Health and Social Service Facilities

Project ID	Project Title	Project Description	Project Location
RS 8 – a	Evaluation of Roadway Flooding	Conduct flood evaluation for roadways in close proximity to healthcare facilities as well as emergency operation facilities and determine alternate routes of access or implement mitigation strategies to reduce flooding on roadways	Countywide
RS 8 – b	Evaluate and Map Areas that Become Physically Isolated by Flooding	Identification and mapping of areas which cannot be reached during a storm to develop plans to address residents and Community assets that may become isolated during flooding; and contingency routes for evacuation	Countywide



RS 9. Resilient Housing

Project Description

The project category Resilient Housing encompasses many housing-related resiliency strategies meant to reduce risk to Herkimer County residents and their homes. Residential areas were hit hard by the summer 2013 flooding. Floodwaters inundated basements and first floors of predominantly single-family, destroyed belongings and keepsakes, prevented automobile access to residential streets and driveways, and in some cases necessitated water rescues. Much of the damages have been covered by FEMA and insurance, but the Community expressed the need to ensure that homeowners do not face the same flooding issues in the future.

There are essentially two options for increasing the resiliency of housing in Herkimer County: 1) relocating the most flood-risk homes to areas of higher elevation and converting the former residential land to open space to manage floodwaters, or 2) strengthening regulation of new and existing housing in 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 Community 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.

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,

Resilient Housing

Recovery Support Function:

Housing

Risk Reduction & Benefits:

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



and elevated utilities and electrical outlets.

The Community may also consider regulations that seek to limit stormwater runoff from new and existing residential properties, which contributes to flooding downstream. Stormwater requirements should address development both inside and outside of the floodplain because stormwater runoff from impervious surfaces upstream (including roofs and driveways) contribute to flood levels downstream. To that end, municipalities should enact uniform stormwater management ordinances and flood prevention laws throughout the watershed.

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.

Strategies

The strategy that these types of projects will help advance is to "Increase the resiliency of the housing stock by increasing housing in downtowns and outside of flood zones with flood resilient construction."

Locations

Resilient Housing projects in Herkimer County would take place on a countywide scale.

Potential Funding Sources

Projects that aim to increase affordable housing in less flood-prone areas or reduce flooding near existing residential areas may find funding through programs such as:

- NYS Homes & Community Renewal Community Development Block Grant Program,
- Environmental Facilities Corporation – Green Innovation Grant Program,
- NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants,
- U.S. Housing and Urban Development (HUD) Community Development Block Grant Program, and
- Federal Emergency Management Administration's Hazard Mitigation Grant Program.

Benefits

Reducing the number of housing units in areas of frequent flooding, increasing the number that are located outside of flood areas, and incorporating resilient housing construction into new and existing housing will result in risk reduction and social, environmental, and economic 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 Community.

There is a further economic benefit to the overall Community of fewer residents in the floodplain because less government funding would need to go to emergency response services and evacuations for flooded residential areas. There is also an economic development benefit to creating attractive housing outside of the floodplain 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.

Environmentally, the overall Community 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 the creek corridor, and buffer the Community from future flood events.

For residents who do not relocate to higher elevation locations, requirements, and incentives for more resilient housing construction will reduce their life safety risk, reduce risk of flood damage to their property, and lower their flood insurance premiums.

Project List

Table 63 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.

Table 63. Resilient Housing

Project ID	Project Title	Project Description	Project Location
RS 9 – a	Acquire Condemned or Foreclosed Homes Outside of Floodplain	Work with various state and federal agencies, including the Office of Community Renewal, and financial institutions to acquire condemned or foreclosed homes outside the floodplain for rehabilitation and low-cost sale to relocated and income qualified residents	Countywide
RS 9 – b	NFIP Enforcement	Develop a working agreement with the appropriate state agency to assume responsibilities for enforcement of the National Flood Insurance Program (NFIP) due to lack of capacity at local level	Countywide
RS 9 – c	Coordinate Housing Assistance	Coordinate state, federal and private disaster assistance for housing need	Countywide
RS 9 – d	Provide Diverse Housing Options	Incentivize projects that would undertake housing rehabilitation or new housing to provide diversity of housing types and costs	Countywide



Herkimer County NY Rising Countywide Resiliency Plan

Project ID	Project Title	Project Description	Project Location
RS 9 – e	Improve Buy-out Programs	Initiate conversations with state and federal regional representatives to review and redraft policies, and/or develop new programs to improve state and federal buy-out programs that will: lessen overly restrictive eligibility criteria; reduce costs to local governments for participation and property maintenance; and encourage voluntary residential and business owner participation	Countywide



RS 10. Improve Power and Telecommunications Systems

Project Description

These projects will ensure more reliable, sustainable, and cost-effective power generation and expand the telecommunication infrastructure in Herkimer County, which should also promote economic growth and resiliency. Enhanced emergency power provisions and protection of existing power infrastructure have 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. Once flood waters recede, communities and residents are often still without power or cell phone coverage leaving the municipalities unable to communicate with residents in regards to where to locate emergency supplies and essential storm recovery information. For example, in the Village of Mohawk, their electrical substation was inundated with eight to ten feet of water, leaving the Village without power for days until the water receded and emergency repairs could be made to the substation.

In addition to damage to electrical power systems, the 2013 flooding also damaged natural gas infrastructure, exposing distribution pipe lines that could pose a serious danger to the public if there was a leak or break in the line. Protecting these critical infrastructure systems against future flood risk is important in maintaining a reliable and safe system.

In the days before and immediately following storm events, residents found refuge in the emergency shelters established throughout the County. Some of these shelters were not equipped with emergency back-up power and also lost power, which limits their ability to provide the crucial recovery functions and services needed. To ensure adequate electrical power to the emergency shelters and other critical facilities during future disasters, back-up generators should be purchased.

Both the Mohawk Valley Regional Economic Development Council (REDC) and the Committee noted that high energy costs in the region represent an economic burden for both residents as well as current and potential employers. To help make their infrastructure and economy more resilient, the Committee would like to expand their energy generation portfolio to include more sustainable and locally produced energy. Projects to meet this need would include evaluating the feasibility of renewable energy generation, such as wind turbines, solar photovoltaic, and micro-hydropower generation throughout the County.

Power and Telecommunications Systems

Recovery Support Function:

Infrastructure; Economic Development

Risk Reduction & Benefits:

Increased resilience and reliability of energy systems; improved emergency communication capabilities; reduced vulnerability to power outages at critical facilities; Expanded opportunities for economic development and growth



Aging and outdated telecommunications infrastructure poses a challenge both for communications during an emergency and economic development. Improving the region's broadband internet access is cited as a key strategic in the REDC Strategic Plan. Building faster and better telecommunication networks can improve the efficacy and reach of emergency messaging and provide an incentive for employer investment in the region that is important for long-term economic growth.

Strategies

The strategies that these types of projects will help advance include:

- *Invest in key infrastructure facilities and systems to promote economic and ecological sustainability*
- *Support efforts and investments that encourage an employer's ability to retain jobs or attract new businesses*

Location

Projects in this category are countywide in their focus.

Potential Funding Sources

Projects under Power and Communication Systems will involve feasibility studies, regional private and public collaboration, and substantial upfront capital. Potential funding sources for these types of projects include:

- NYS Energy Research and Development Authority (NYSERDA) – Flexible Technical Assistance,
- NYS Energy Research and Development Authority (NYSERDA) Cleaner, Greener Communities Program , and
- Empire State Development (ESD) Grants for Infrastructure Investment.

Benefits

Power and telecommunications projects have the potential to reduce risks of life and safety to the public (including vulnerable populations) by providing enhanced communication and advanced warning during severe storms and flooding. By providing current and accurate information related to storm events, evacuation instructions, and other official notifications, risks to public health and safety could potentially be reduced. 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. 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. Investment in renewable energy generation could help increase the resilience of the power grid and spur economic investment, through both lower energy costs and the growth of green technology-type businesses. Additionally, enhancements in



telecommunication systems are important to spur economic development and to maintain long-term economic growth.

Project List

Table 64 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.

Table 64. Improve Power and Telecommunications Systems

Project ID	Project Title	Project Description	Project Location
RS 10 – a	Investigate Utility Infrastructure at Highest Risk of Flooding	Investigate where utility infrastructure is most at risk from flooding damage and encourage the utilities to protect or relocate utility lines most at risk of failure, collapse or breakage	Countywide
RS 10 – b	Back-up Power Generation	Provide critical facilities with backup power generation	Countywide
RS 10 – c	Evaluate Opportunities to Expand Hydropower Generation	Undertake engineering feasibility studies for micro-hydropower generation and flood flow attenuation on high risk streams	Countywide
RS 10 – d	Investigate Opportunity for Renewable Energy	Investigate the use of renewable energy (such as wind turbines) to serve as alternative sources of energy during and after storms	Countywide
RS 10 – e	Investigate Opportunities for Solar Photovoltaic Systems	Evaluate feasibility of municipal- and community-owned solar photovoltaic systems	Countywide
RS 10 – f	Northland Communications Project	Expand the Northland Communications project to increase broadband internet access	Countywide (regional)



RS 11. Resilient Water, Wastewater, Stormwater, and Green Infrastructure Systems

Project Description

The summer 2013 storm event and past events caused widespread flooding, resulting in damages to water systems within Herkimer. The Herkimer NYRCR Committee identified the need to improve the resiliency of water systems, as these systems are often considered critical facilities that communities and residents rely on for daily activities. Water systems projects relate to drinking water, stormwater management, including culverts and green infrastructure, and sanitary and combined sewers.

Drinking water supply systems are hydrologically and hydraulically engineered and usually include components such as: drainage basin, raw water collection (lake, river, and groundwater), water purification or treatment facilities, storage facilities (reservoirs, tanks, and towers), pumping stations, piping networks and fire hydrants. Public or municipal water-supply systems are vitally important to all populations.³⁵ Often in rural areas, residents do not have access to a municipal water system and rely on wells and storage tanks. Flooding during storm events can lead to the failure of potable water infrastructure, which may result in loss of the essential service to residents. Loss and damage to property may also result. Mitigation measures may include locating facilities outside of the floodplain, flood proofing measures, repairing damaged and aging infrastructure, locating and developing a secondary source, or the installation of a pre-filter.

Stormwater is water from rain or melting snow that does not permeate into the ground but runs off into waterways.³⁶ Runoff flows from rooftops, over paved areas and bare soil, and through sloped lawns while picking up a variety of materials on its way.³⁶ 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.³⁶ 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.

Culverts are used to convey water underneath roadways. The Community expressed concern about the substantial flooding and damaged produced from the obstruction of culverts by tree branches and other debris during the summer 2013 flooding. Culverts may become pinch points for water during severe

Resilient Water, Wastewater, Stormwater, and Green Infrastructure Systems

Recovery Support Function:
Infrastructure; Economic Development

Risk Reduction & Benefits:

Increased resilience and reliability of drinking water, wastewater, and stormwater systems; reduced risk of public health threats during flood events; Expanded opportunities for economic development and growth



storm events when they are located under roads to allow vehicular traffic to cross the stream. When the culvert is obstructed with debris carried by floodwater, it will reduce flow capacity or block conveyance of the elevated water through the established flow channel. An obstructed culvert impeding water flow can cause the water to rise over the streambanks, flooding adjacent areas and sometimes undermining the structural integrity of the roadway, which passes over it. These roadway damages can prevent vehicles from safely traversing the stream and potentially cutoff areas of the community from one another. Especially vulnerable to obstruction are double culverts, which are culverts that have a center pier. Mitigation measures may include hydrologic analysis and engineering analysis to install appropriately sized culverts to handle the water flow during storm events.

Green infrastructure practices maintain or restore stormwater's natural flow pattern by slowing runoff velocities and reducing stormwater volumes.³⁷ 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.³⁸ These practices include rain gardens, bio-retention 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.³⁷

Wastewater collection infrastructure may include pump stations, force mains, sanitary and combined sewers, and treatment facilities. Flooding during storm events can lead to the failure of wastewater infrastructure, which may result in discharge of untreated wastewater into the community's surface waters and groundwater, resulting in environmental contamination. Mitigation measures may include locating facilities outside of the floodplain, flood proofing measures such as the installation of backflow valves, inflow and infiltration studies (I&I) and repairing damaged and aging infrastructure.

Strategies

The strategies that these types of projects will help advance include:

- *Invest in key infrastructure facilities and systems to promote economic and ecological sustainability*
- *Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses*

Location

Projects are located throughout Herkimer. Specific locations include: City of Little Falls, the Villages of Herkimer and Mohawk, the Town of Herkimer, the Village and Town of Frankfort, and the Hinckley Reservoir (see Figure 24 below).



Potential Funding Sources

Outside of the NY Rising Community Reconstruction Program, there are several potential state and federal funding sources that could be utilized to implement the Water Systems projects, including:

- NYS DEC/EFC Wastewater Infrastructure Engineering Planning Grant,
- Environmental Facilities Corporation Clean Water State Revolving Fund,
- Environmental Facilities Corporation Green Innovation Grant Program,
- NYS Research and Development Authority Cleaner, Greener Communities Program,
- Department of State Community Services Block Grant,
- Empire State Development Grants for Strategic Planning and Feasibility Studies,
- Empire State Development Environmental Investment Program,
- Empire State Development Grant Funds,
- Office of Community Renewal Community Development Block Grant Program,
- U.S. Environmental Protection Agency Clean Water State Revolving Fund,
- EPA’s Hardships Grants Program for Rural Communities, and
- U.S. Army Corps of Engineers Planning Assistance to States Program.

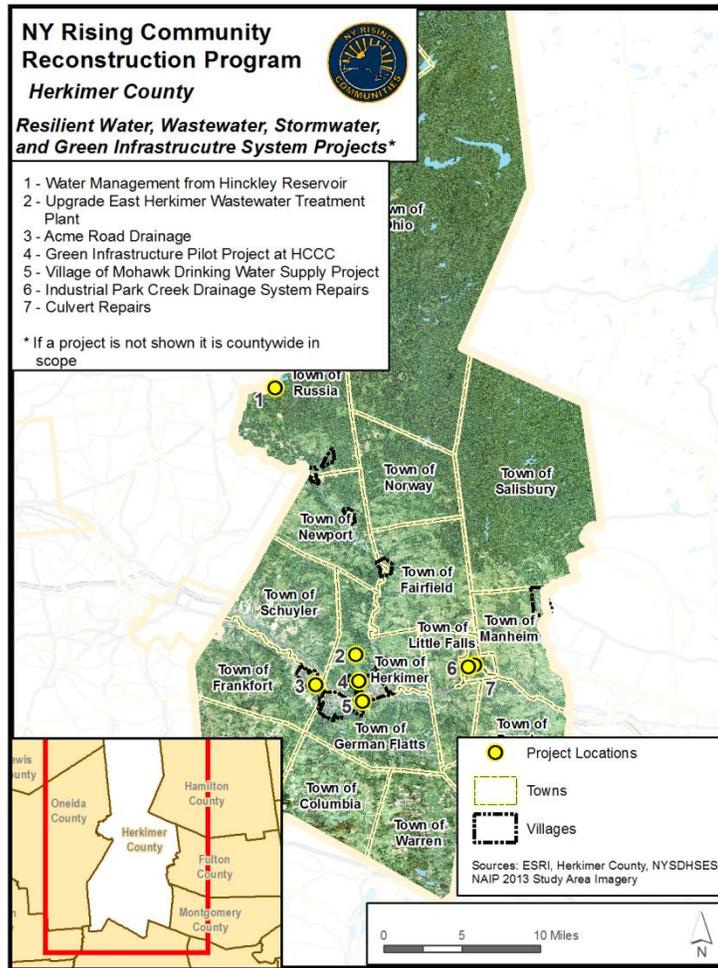


Figure 24. Locations of Resilient Water System Projects

Funding to support local municipal staff for compliance efforts—such as a floodplain manager 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.



Benefits

Several long-term benefits can be provided by the Water System projects. The projects would increase the resiliency for Herkimer’s potable water facilities, wastewater facilities, storm sewers, and sanitary sewers. Potable water projects would benefit residents and communities by providing reliable and safe drinking water and minimizing the potential for loss of service during storm events. Sanitary and combined sewer projects have the potential to reduce communities’ 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. Properly function stormwater systems and culverts would prevent infrastructure damage and failure during storm events, allowing residents to safely travel on roadways.

The improvement of public water and sewer lines would also allow Herkimer County to better meet regulatory requirements related to water quality. Stormwater projects could result in reduced runoff, flooding, erosion, habitat destruction, and contamination in streams. In addition to managing stormwater, green infrastructure projects could recharge groundwater, provide wildlife habitat, beautify neighborhoods, cool urbanized areas, improve air quality, and reduce stress on combined sewer systems.³⁷ These projects could also partially reuse existing infrastructure, thereby reducing or eliminating environmental impacts associated with new construction. Projects would benefit all communities, residents and businesses in service areas, including low to moderate income neighborhoods.

Project List

Table 65 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project, including a brief project description, in Section V: Schedule for Implementation.

Table 65. Resilient Water, Wastewater, Stormwater, and Green Infrastructure System Projects

Project ID	Project Title	Project Description	Project Location
RS 11 – a	Increase Resilience of the Village of Mohawk Drinking Water Supply Project	Identify and develop supplemental water supply location for Village of Mohawk, which could increase resiliency, increase capacity, and attract new business/ residential development. Additionally, raise the existing water supply and water treatment plant above base flood elevation.	Village of Mohawk
RS 11 – b	Repair Drainage System in the City of Little Falls Industrial Park	Perform repairs to the Industrial Park Creek drainage system in the City of Little Falls, particularly to the Carden and Frederick Creek underground drainage lines.	City of Little Falls
RS 11 – c	Upgrade East Herkimer Wastewater Treatment Plant	Upgrade the East Herkimer Wastewater Treatment Plan and install sewer extension	Town of Herkimer



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Project ID	Project Title	Project Description	Project Location
RS 11 – d	Improve Acme Road Drainage	Replace aging stormwater drainage infrastructure along Acme Road in the Village and Town of Frankfort to reduce flooding on the road.	Village/ Town of Frankfort
RS 11 – e	Repair Culverts in City of Little Falls	Repair or replace culverts at Smith Street, Frederick Creek, and Carden Creek in City of Little Falls. Identify roads at high risk for closure and alternate routes of access	City of Little Falls
RS 11 – f	Stormwater Management along Lou Ambers Drive	Reconstruct Lou Ambers Drive between West German Street and Johnson Avenue in the Village of Herkimer with a new box culvert that will be constructed to convey the flow of an unnamed tributary of Bellinger Brook.	Village of Herkimer
RS 11 – g	Green Infrastructure Pilot Project at HCCC	Work with Herkimer County Community College to install a demonstration green infrastructure project on campus to reduce stormwater runoff, which could include bioswales in their parking lot or subsurface detention areas for stormwater	Village of Herkimer
RS 11 – h	Promote Green Infrastructure	Promote utilization of green infrastructure for parking facilities and business district improvements.	Countywide
RS 11 – i	Water Management from Hinckley Reservoir	Leverage existing partnerships with the NYS Canal Corporation to begin a dialogue regarding the management of water releases from the Hinckley Reservoir.	Hinckley Reservoir



RS 12. Enhance Transportation Systems

Project Description

The Herkimer County NYRCR Committee included resilience measures for various transportation systems including roadways and bridges. Roadways play a dual role during emergencies - they provide access to emergency facilities and function as evacuation routes. Many Herkimer County roadways were constructed adjacent to creeks as that is where the land tends to be flattest. The shoulders and embankments of a number of those roadways have been eroded and washed out by creek flooding. In some locations, the roadway itself was compromised and needed replacement. In other cases, utilities located in the road right-of-way were exposed by flood water induced erosion and are now at risk of collapsing. According to NYS Department of Transportation and local highway department officials, during the summer 2013 rainstorms several bridges in the County were completely washed-out while others experienced bridge scour, increasing their risk of failure or collapse in the future. Repair of these roads, bridges, and utilities has been an important recovery priority, but protection of both is also a strategy for resiliency.

Enhance Transportation Systems

Recovery Support Function:
Infrastructure

Risk Reduction & Benefits:

Increased resilience and protection of transportation infrastructure;
Improved emergency response capacity with reduction of flooding on roadways; Reduced risk of public safety threats during flood events

The 2014 Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives studies (2014 DEC/DOT Water Basin Studies) commissioned by the NYS Department of Environmental Conservation and NYS Department of Transportation cited a number of the bridges as too undersized to pass storm flows. In those cases, the studies found that the cross sectional area beneath the bridges was insufficient to pass the volume of water estimated for future storm events. In fact, storm debris constricted by several undersized bridges in Herkimer County was responsible for flooding in residential and commercial districts during the June 2013 rainstorms. The 2014 DEC/DOT Water Basin Studies recommended these bridges be evaluated and considered for replacement with longer span bridges to alleviate flooding. In at least one case, the 2014 studies recommended that it might be most useful to eliminate a bridge and turn the road into a cul-de-sac in order to reduce constrictions in the creek.

Maintaining key road and bridge infrastructure is also important in promoting economic growth and resiliency, particularly as the County hopes to attract new employers and promote tourism. This challenge is a regional issue that is highlighted in the Mohawk Valley Regional Economic Development Council 2011 Strategic Plan. As noted in the Strategic Plan, the lack of funding to support transportation improvements and expansion is a major threat to long-term economic development.



Strategies

These projects advance the following strategy: *“Invest in key infrastructure facilities and systems to promote economic and ecological sustainability.”*

Location

Projects are located throughout Herkimer. Specific locations include: the Villages of Herkimer, Ilion and Middleville, and the Towns Danube and Manheim (see Figure 25 below).

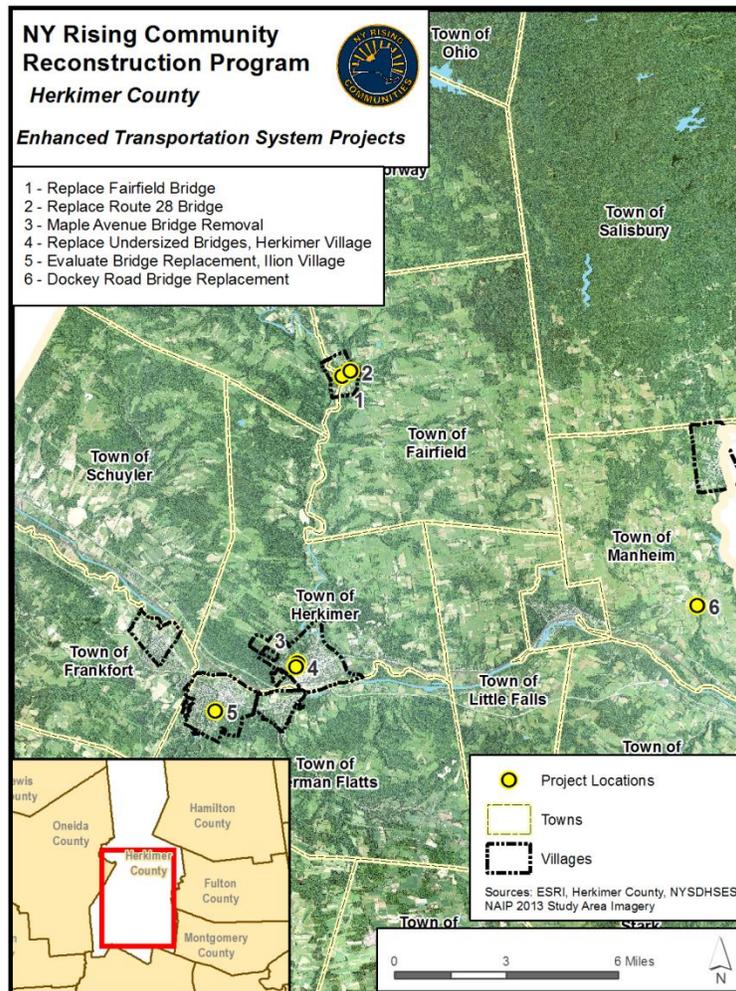


Figure 25. Locations of Enhanced Transportation System Projects



Potential funding sources

Funding for these projects could be derived from:

- Federal Emergency Management Administration’s Hazard Mitigation Grant Funding and
- U.S. Department of Transportation programs, such as the Transportation Investment Generating Economic Recovery program

Benefits

Passable roadways are critically important during an emergency. Residents must be assured of access to roadways for evacuation during storm and flooding events. They must also be able to utilize roadways to access emergency shelters, medical and social welfare sites during those storms. Inadequately sized bridges can be damaged by floodwaters making them unstable and potentially dangerous. Repairing and in some cases replacing bridges reduces the likelihood of debris and ice jams occurring at bridges during flooding events or even during normal winter storms, thus reducing the risk of flooding to adjacent neighborhoods. These projects also improve public safety by replacing bridges that have experienced bridge scour, eliminating the risk of bridge failure and collapse.

Project List

Table 66 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project, including a brief project description, in Section V: Schedule for Implementation.

Table 66: Enhance Transportation System Projects

Project ID	Project Title	Project Description	Project Location
RS 12 – a	Maple Avenue Bridge Removal	In Herkimer Village, remove the Maple Grove Avenue Bridge and convert the road to a cul-de-sac.	Herkimer Village
RS 12 – b	Replace Undersized Bridges, Village of Herkimer	In Herkimer Village, replace the West German and Church Street bridges with new 45-foot minimum span bridges.	Herkimer Village
RS 12 – c	Replace Fairfield Bridge	Replace Fairfield Street bridge (Route 29) as it crosses over Maltanner Creek with a wider span and a flatter more appropriately armored channel to reduce water velocities and limit erosive forces.	Village of Middleville
RS 12 – d	Replace Route 28 Bridge	Replace the Main Street (Route 28) bridge in Middleville as it passes over Maltanner Creek with a wider structure, a lower bed, and appropriate bed roughening to reduce flood risk in the village.	Village of Middleville



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Project ID	Project Title	Project Description	Project Location
RS 12 – e	Evaluate Bridge Replacement in the Village of Ilion	Assess feasibility for replacement/resizing of the Otsego Street, Third Street, Second Street, and Main Street bridges along Steele Creek in the Village of Ilion with consideration for historical significance of certain bridges.	Village of Ilion
RS 12 – f	Dockey Road Bridge Replacement	Replace the Dockey Road (County Route 42) bridge.	Town of Manheim



RS 13. Creek Restoration and Capacity Improvements

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 Herkimer County. In some ways, the extent and degree of damage from the 2013 flooding was a result of the existing streambank erosion and sediment obstruction that existed before the storm. Streams in the County that experienced these issues and were further damaged by the 2013 flooding include: Fulmer, Steele, Moyer, East Canada, West Canada, Nowadaga, Maltanner, and Otsquago Creeks and Bellinger Brook. Projects in this grouping include streambank stabilization, stream channel realignment, floodplain management, and expansion, and stream dredging and maintenance programs.

The goals of these projects are to stabilize streambanks, prevent additional erosion, and to promote natural channel and floodplain design. Implementation of the restoration and resiliency measures will help protect streambanks from further erosion during future storms, improve functionality of natural drainage systems, and protect assets located within or near the flood zone. Physical measures implemented will also improve the health of the streams and the resiliency of the stream corridors. Examples of specific projects include:

- Developing maintenance dredging guidelines and applying for renewable maintenance dredging permits.
- Identification and removal of stream debris and large sediment deposits that cause significant alteration to stream dynamics and/or exasperate damages to adjacent lands and infrastructure during future flooding events. Removal of these blockages will restore proper water flow and channel alignment. Work may include bank stabilization where necessary.
- Streambank and channel restoration feasibility and engineering studies. Feasibility and engineering studies will build on the 2014 Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives studies (2014 DEC/DOT Water Basin Studies) commissioned by the NYS Department of Environmental Conservation and NYS Department of Transportation. The engineering studies will determine the overall scope of improvements that are recommended by the studies. The studies will determine the technical feasibility and estimated cost of the most effective measures for restoring and enhancing damaged waterways and stream corridors, which may include the relocation buildings to allow

Creek Restoration and Capacity Improvements

Recovery Support Function:
Natural & Cultural Resources;
Infrastructure

Risk Reduction & Benefits:

Reduces risk of flooding across the County; improved emergency response capacity with reduction of flooding on roadways; reduced risk of public safety threats during flood events; Improved environmental conditions in creeks and streams



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streams to have a more natural watercourse. Improved functionality of the natural drainage systems are anticipated to result from implementation of these restoration measures.

- Altering the operations of dams along creeks and streams. As reported in the 2014 DEC/DOT Water Basin Studies, the dams along certain creeks in Herkimer County, particularly the East Canada Creek, impose a strong influence on sediment transportation and deposition in the creeks. The dams in Dolgeville have been known to be locations where ice jam flooding has occurred in the past. Conversations with dam operators must be initiated to understand the best methods to reduce flood risk.

Strategies

The strategies that these types of projects will help advance include:

- *Invest in key infrastructure facilities and systems to promote economic and ecological sustainability*
- *Utilize a combination of streambank restoration/re-alignment and maintenance, green infrastructure, and other tools to reduce erosion and stormwater runoff and mitigate flooding and losses*

Location

Projects are located throughout Herkimer County. Specific locations include: East Canada Creek along Saltsman Road, the Maltanner Creek, the Village of Middleville, and Steele Creek in the Town of German Flatts (see Figure 26).

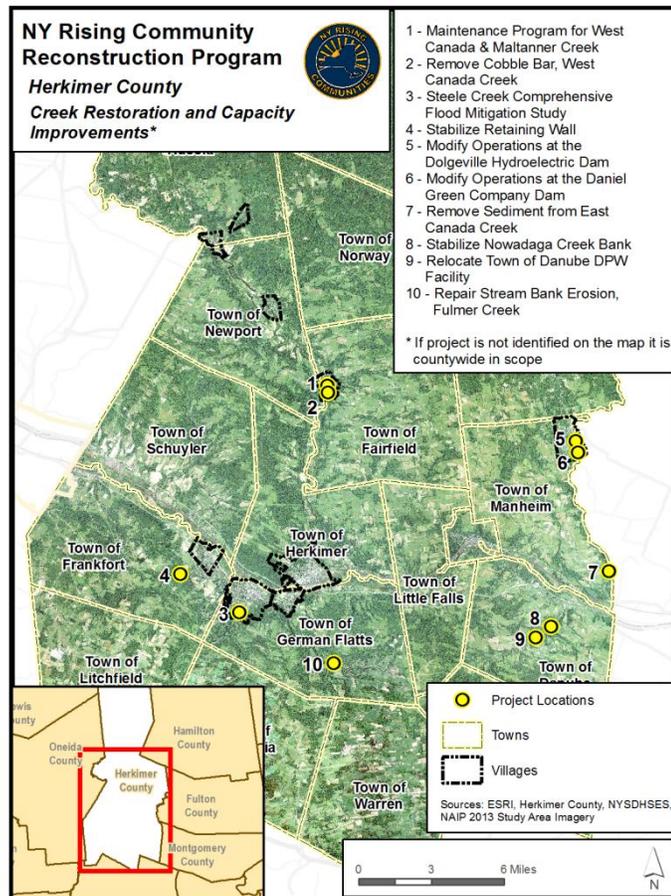


Figure 26. Locations of Creek Restoration and Capacity Improvement Projects



Potential Funding Sources

Projects that would benefit from outside planning or engineering expertise, such as the development of a feasibility study to assess the feasibility of constructing a sediment control structure, may find funding through programs such as:

- Empire State Development Strategic Planning and Feasibility Studies,
- NYS Energy Research and Development Authority – Cleaner, Greener Communities Program, Phase II Implementation Grants,
- NYS DOS Local Waterfront Revitalization Program,
- U.S. Environmental Protection Agency Clean Water State Revolving Fund,
- EPA’s Wetlands Funding,
- EPA’s Hardships Grants Program for Rural Communities
- U.S. Army Corps of Engineers Floodplain Management Services Program, and
- USACE’s Planning Assistance to States Program.

Funding to support local municipal staff for compliance efforts—such as a floodplain manager 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.

Benefits

The goal of these projects is to permanently mitigate flooding along stream corridors as a means to increase resiliency and sustainable benefits. Streambank and stream channel restoration projects would provide flood mitigation along stream corridors while potentially enhancing their appeal as recreational and tourist attractions. 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 (many of which serve socially vulnerable populations) located near waterways would be at a lesser risk to flooding with the implementation of these resiliency projects. Long-term protection of municipal assets, such as businesses and homes, is crucial to the economic strength of communities, maintaining a sustainable tax base, and retention of residents. The reduced scope of damage to adjacent properties and community assets would incur fewer costs for the County, individual municipalities, and property owners as a result of reduced damages, thus increasing economic resiliency.

Creek improvements such as streambank stabilization, debris removal, and the upsizing of culverts and bridges all have the potential to reduce streambank erosion and sediment transport in the various creeks and streams throughout Herkimer County. Stream restoration would also stabilize the biological components such as adjacent wetlands and fishing habitat making it more resilient and sustainable.



Properly functioning streams and would decrease the risk of flooding of roadways and overtopping of bridges, allowing residents to safely travel on roadways during storm events. Projects would benefit all communities, residents, and businesses, including vulnerable populations. Minimized roadway flooding of communities will also improve access to residential areas 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 List

Table 67 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project, including a brief project description, in Section V: Schedule for Implementation.

Table 67. Creek Restoration and Capacity Improvements

Project ID	Project Title	Project Description	Project Location
RS 13 – a	Steele Creek Comprehensive Flood Mitigation Study	Evaluate feasibility of a comprehensive flood mitigation approach along Steele Creek near and upstream from the existing concrete dam, “The Falls,” which may include removal of the dam, multiple bridge replacements or removals, property acquisition, floodplain bench creation, and channel resizing	Town of German Flatts, Village of Ilion
RS 13 – b	Develop Maintenance Dredging Guidelines that Includes Streambank Stabilization	Develop maintenance dredging guidelines and apply for renewable maintenance dredging permits from DEC for sensitive areas within the major creek and stream systems.	Countywide
RS 13 – c	Remove Sediment from East Canada Creek	Regularly remove sediment from East Canada Creek along Saltsman Road to reduce risk of flooding to the road.	Saltman Road, Town of Manheim
RS 13 – d	Evaluate Sediment Control Dam along Maltanner Creek	Evaluate the feasibility of constructing a sediment control dam for the upper portions of Maltanner Creek.	Town of Fairfield
RS 13 – e	Develop Maintenance Program for West Canada and Maltanner Creek	Develop a stream repair and maintenance program for the West Canada and Maltanner Creeks that incorporates monitoring of bank failures.	Towns of Fairfield and Newport, Villages of Middleville and Newport
RS 13 – f	Remove Cobble Bar, West Canada Creek	Remove cobble bar from the West Canada Creek at Bridge Street (Route 28) in Middleville.	Village of Middleville
RS 13 – g	Construct Low Flow Channels	Construct low-flow channels or v-notches within other streams to reduce risk of ice jams, lower water levels, and increase capacity.	Countywide



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Project ID	Project Title	Project Description	Project Location
RS 13 – h	Repair Stream Bank Erosion, Fulmer Creek	Repair stream bank erosion along Fulmer Creek near Route 168 and Mortz Road in the Town of German Flatts	Town of German Flatts, near Route 168 and Mortz Road
RS 13 – i	Stabilize Retaining Wall, Town of Frankfort	Repair and improve the retaining wall on the east bank of Moyer Creek near the Edgewood Trailer Park in the Town of Frankfort to ensure structural integrity and protect residences.	Town of Frankfort
RS 13 – j	Stabilize Nowadaga Creek Bank	Stabilize the bank along approximately 200 feet of the Nowadaga Creek (between STA 142+00 and 103+00) and clean sediment and woody debris from channel	Town of Danube
RS 13 – k	Relocate Town of Danube DPW Facility	Move the Town of Danube Department of Public Works shed and stockpiled materials away from the Nowadaga Creek, stabilize the Creek in this area and re-establish a floodplain on the right bank to mitigate ongoing erosion	Town of Danube
RS 13 – l	Modify Operations at the Daniel Green Company Dam	Evaluate the feasibility of modifying operations at the Daniel Green Company Dam in Dolgeville in order to reduce water levels behind the dam by opening a low-flow outlet	Village of Dolgeville
RS 13 – m	Modify Operations at the Dolgeville Hydroelectric Dam	Evaluate the feasibility of modifying operations at the Dolgeville Hydroelectric Dam to reduce the risk of ice jams and flooding	Village of Dolgeville



RS 14. Natural Resource Enhancements

Project Description

Some of Herkimer County's most valuable assets are its natural resources and cultural resources. The County is home to large open spaces, creeks, rolling hills, and the Mohawk River Valley. The County has large and small farms, historic village homes and downtowns, and the Erie Canal. These resources not only make it an attractive place to live, but also serve as economic assets, drawing visitors that can help support local businesses. The same creeks are also the source of the flooding that has affected so many of the County's villages and hamlets.

Enhancements to natural and cultural resources were proposed that could help reduce flood risks, support tourism, attract businesses and new residents, and spur economic development. Open space acquisitions were proposed to expand some floodplains and in other cases for recreational purposes. Pedestrian and bicycle linkages could be constructed to existing trails and paths and to the NYS Canal Recreational Trail system.

Strategies

These projects advance the following strategies:

- *Preserve and build upon abundant natural, cultural and geographical resources*
- *Identify, enhance and expand opens space and recreational opportunities, such as walking/biking trails and fisheries, along streams and rivers*

Location

The projects included in this category are located along Countywide along the Mohawk River, the City of Little Falls, the Town of Salisbury and the Village of Dolgeville, and the Villages of Ilion and Frankfort (see Figure 27).

Potential funding sources

Funding for these projects could be derived from the following sources:

- NYS Department of Environmental Conservation,
- NYS Office of Parks, Recreation, and Historic Preservation ,

Natural Resource Enhancements

Recovery Support Function:

Natural & Cultural Resources;
Economic Development

Risk Reduction & Benefits:

Increased access to recreational opportunities for Herkimer residents and tourists; Stimulate economic development and increase economic resiliency;



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- NYS Department of Transportation,
- NYS Environmental Facilities Corporation,
- U.S. Environmental Protection Agency, and
- NYS Department of State, Local Waterfront Revitalization Program.

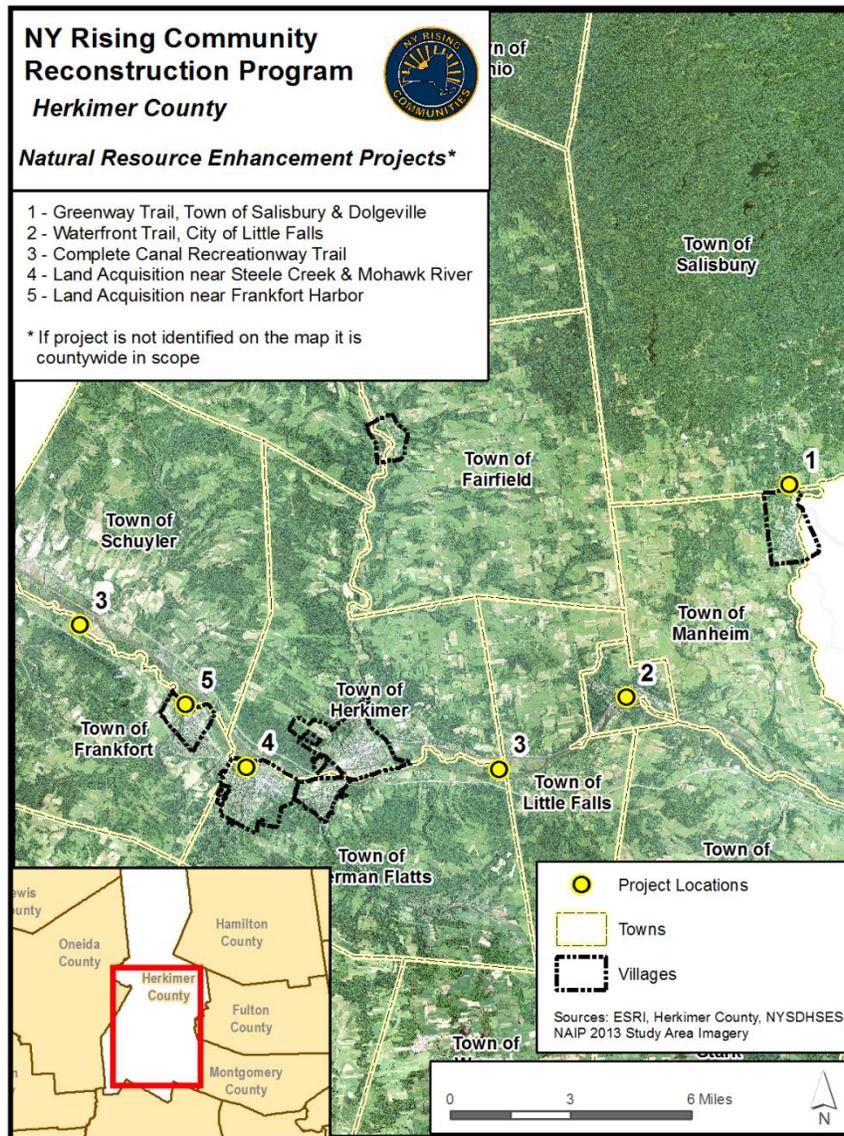


Figure 27. Locations of Natural Resource Enhancement Projects



Benefits

Natural resource enhancement projects will reduce flooding risk and spur economic development. Improvements to the County’s creek systems are needed to expand the floodplains to accommodate predicted increases in rainfall and storm intensity. Floodplain expansion increases creek capacity, reducing flood risk. Other creek improvement measures will stabilize banks and adjacent hillsides to reduce erosion and the accumulation of sediment in creek channels. Creek capacity is maintained when sediment loads are reduced and managed and properly sized culverts and bridges are installed. Open space acquisitions and recreational enhancements can attract tourists who can help support existing businesses and attract new ventures to the County.

Project List

Table 68 below displays the list of projects developed by the Community that are included in this grouping. Further information can be found about each project in Section V: Schedule for Implementation.

Table 68.

Project ID	Project Title	Project Description	Project Location
RS 14 –a	Develop Greenway Trail	Develop and implement a greenway trail in the Town of Salisbury and the Village of Dolgeville as recommended by the Mohawk Valley Economic Development District	Town of Salisbury and Village of Dolgeville
RS 14 –b	Develop Waterfront Trail	Implement a waterfront trail system in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls
RS 14 –c	Complete Canal Recreationway Trail	Implement the Canal Recreationway trail plan to create a continuous trail from the City of Little Falls east to Utica	Along Erie Canal from City of Little Falls to Utica
RS 14 –d	Develop Bike and Pedestrian Trail Spurs from the Canal Recreationway Trail	Plan and implement bike and pedestrian trail spurs off the Canalway Trail that follow the Mohawk River tributaries to increase tourism and recreational opportunities.	Countywide
RS 14 –e	Land Acquisition near Frankfort Harbor	Evaluate feasibility of the public acquisition of land adjacent to and west of the Frankfort Harbor site to be used as an open space and recreation area.	Village of Frankfort
RS 14 –f	Land Acquisition near Steele Creek and Mohawk River	Evaluate feasibility of the public acquisition of land near the confluence of Steele Creek and the Mohawk River in the Village of Ilion to be used as an open space and recreation area.	Village of Ilion



Section 5. Schedule for Implementation



Riverside path along Erie Canal in the City of Little Falls



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Table 69 below presents all of the Recovery and Resiliency projects developed by the NYRCR Herkimer County Planning Committee and reviewed by the overall Community and the third public engagement event held. Note that each project is listed with a project ID number (RC# for recovery projects and RS# for resiliency projects) that is not meant to indicate project ranking or prioritization.

Table 69: Schedule for Implementation

ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
Recovery Projects						
RC 1	Poland Washout Water Transmission Line Repair	Repair washout that exposed the water transmission line for the Village of Herkimer.	Village of Poland	Total: \$514,251; FEMA: \$386,688; NYRCR: \$128,563	Village of Herkimer	Short term (0-2 years)
RC 2	Newport-Gray Road and Stream Bank Protection	Install stacked and pinned stone along the streambank that forms the shoulder and clear zone of Newport-Gray Road in the Town of Norway.	Town of Norway	\$50,000	Town of Norway, Herkimer County Department of Highways	Short term (0-2 years)
RC 3	Lehman Park Embankment Repair	Repair the bank failure near Lehman Park in the Village of Frankfort.	Village of Frankfort	Total: \$860,000 FEMA: \$645,000 NYRCR: \$215,000	Village of Frankfort	Short term (0-2 years)
RC 4	Culvert Repair for Access to Road to Water Holding Tank	Repair the collapsed culvert pipe along Joslin Road in the Town of Frankfort to ensure continued access to a water holding tank.	Joslin Road, Town of Frankfort	\$10,454	Village of Frankfort	Short term (0-2 years)
RC 5	East German Street Extension Repair	Repair the bank supporting the East German Street Extension.	Town of Herkimer	Total: \$567,993; FEMA: \$425,995; NYRCR: \$141,998	Town of Herkimer	Short term (0-2 years)

³ Anticipated completion time range would be applicable once funding is made available for the project.



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RC 6	Bellinger Creek Repairs	Bellinger Creek repairs downstream of Brookwood Park in the Village of Herkimer.	Village of Herkimer	Total: \$2,193,893 , FEMA: \$298,893, Local: \$1.895 million	Village of Herkimer	Short term (0-2 years)
RC 7	Substation Repairs and Hardening	Modify Village of Mohawk electrical substation to protect it from flooding.	Village of Mohawk	Total: \$5.5 million FEMA: \$4.3 million NYRCR: \$1.2 million	Village of Mohawk	Mid-term (2-5 years)
RC 8	Fulmer Creek Rehabilitation	Perform feasibility study on Fulmer Creek to assess restoration opportunities within the Village of Mohawk and perform streambank stabilization.	Village of Mohawk	Less than \$500,000	Village of Mohawk	Short term (0-2 years)
RC 9	Slip Bank Repair near former Wilkerson Property	Repair bank failure along Fulmer Creek between the two bridges on Route 168 (formerly the Wilkerson property) in the Town of German Flatts.	Town of German Flatts, along Fulmer Creek at double Route 168 bridges	\$1.15 million	Town of German Flatts	Short term (0-2 years)
RC 10	Left Bank Stabilization near Creekside Trailer Park Property	Stabilize eroded bank along Fulmer Creek near the Creekside Trailer Park in the Town of German Flatts.	Town of German Flatts	\$300,000	Town of German Flatts	Short term (0-2 years)
RC 11	Leatherstocking Trailer Park Recovery Project	Acquire the Leatherstocking Trailer Park property in the Town of German Flatts, remove damaged structures and restore a more natural floodplain for Fulmer Creek.	Town of German Flatts	\$340,000	Town of German Flatts	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RC 12	Debris Removal and Stabilization of Cemetery Creek Headwaters	Stabilize streambank and perform necessary debris removal within Cemetery Creek in the City of Little Falls.	City of Little Falls	\$400,000	City of Little Falls	Short term (0-2 years)
RC 13	Timmerman Road Ditch Repair	Repair the ditch along Timmerman Road in the Town of Manheim.	Timmerman Road, Town of Manheim	\$264,000	Town of Manheim	Short term (0-2 years)
RC 14	Creek Road Stream Bank Stabilization	Install stacked and pinned stone along streambank on Creek Road in Town of Danube.	Town of Danube	\$100,000	Town of Danube, Herkimer County Department of Highways	Short term (0-2 years)
RC 15	Gulf Road Bank Repairs and Stabilization	Install stacked and pinned stone along five different locations on Gulf Road in the Town of Winfield.	Town of Winfield	\$300,000	Town of Winfield, Herkimer County Department of Highways	Short term (0-2 years)
Resiliency Projects						
<i>RS 1: Watershed Planning, Regulation, and Compliance</i>						
RS 1-a	Develop Comprehensive Master Plans	Update or create Comprehensive Master Plans for the Towns and Villages most at risk of flood damage	Countywide	Less than \$500,000	Herkimer County, Village, City and Town governments, Herkimer-Oneida Counties Comprehensive Planning Department	Short term (0-2 years)
RS 1 – b	Develop Uniform Floodplain & Land Use Regulations	Develop uniform floodplain and land use regulations based on a watershed scale for consistency throughout watershed, upstream and downstream	Countywide	Less than \$500,000	Herkimer County, Village, City and Town governments	Short term (0-2 years)
RS 1 – c	NFIP Community Rating System	Participate in the National Flood Insurance Program’s Community Rating System	Countywide	Less than \$500,000	Herkimer County, Village, City and Town governments	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 1-d	Establish Inter-municipal Drainage Districts	Establish an inter-municipal drainage district to address stormwater management and watershed issues from their source to their discharge.	Countywide	Less than \$500,000	Countywide	Short term (0-2 years)
<i>RS 2: Education and Communications</i>						
RS 2-a	Enhance Educational Programs for Local Officials	Enhance educational programs for local officials on floodplain regulations and enforcement needs	Countywide	Less than \$500,000	Herkimer County, Herkimer-Oneida Counties Comprehensive Planning Department	Short term (0-2 years)
RS 2-b	Install Stream Gauges & High Water Markers	Install stream gauges and high water markers along bridges in Bellinger Brook, Fulmer Creek, East Canada Creek, Moyer Creek, and Steele Creek	Countywide	Less than \$500,000	Herkimer County, NYS Canal Corporation	Short term (0-2 years)
RS 2-c	Enhance Mohawk River Monitoring System	Enhance the monitoring system being put in place by the Canal Corporation along the Mohawk River; evaluate following installation.	Along Mohawk River Countywide	\$500,000 - \$1 million	NYS Canal Corporation	Short term (0-2 years)
RS 2-d	Utilize Integrated Public Alert Warning System	Adopt and utilize FEMA's Integrated Public Alert Warning System	Countywide	Less than \$500,000	Herkimer County, Village, City and Town governments	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 2-e	Enhance Emergency Services website	Maintain and enhance the Herkimer County Emergency Services website so that it can serve as a single point repository for web-based information	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)
RS 2-f	Implement Outreach Campaign	Develop an outreach campaign to increase participation by the Villages, Towns, and public in the Countywide Alert System that provides automatic messages (via various electronic means - e.g. text, email) to a voluntary contact registry.	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)
RS 2-h	Circulate Pre-Disaster Information	Circulate relevant pre-disaster information via flyers with municipal mailings.	Countywide	Less than \$500,000	Herkimer County, Village, City and Town governments	Short term (0-2 years)
RS 2-i	Public Workshops & Information Sessions	Routinely schedule workshops and public information meetings on emergency preparedness.	Countywide	Less than \$500,000	Herkimer County, Village, City and Town governments	Short term (0-2 years)
<i>RS 3: Capacity Building</i>						
RS 3-a	Shared Recovery Manager	Share recovery manager/grant writer with other area municipalities to secure and administer grants and implement recommendations of the NYRCR program	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 3-b	Create a Flood Recovery Office	Develop a regional flood recovery and revitalization office. The shared recovery manager and grant writer would be positioned with this office to help coordinate recovery and revitalization efforts.	Countywide	Less than \$500,000	Herkimer County; other regional County governments	Short term (0-2 years)
RS 3-c	Enhance Herkimer GIS Capacity	Support a designated staff member at the Herkimer/Oneida Comprehensive Planning Department for Herkimer County to enhance and expand the existing geographic information system (GIS) capacity and data collection efforts; establish a central repository for disaster related GIS information and make accessible to departments participating in emergency response efforts.	Countywide	Less than \$500,000	Herkimer/Oneida Comprehensive Planning Department	Short term (0-2 years)
RS 3-d	GIS Infrastructure Mapping	Undertake detailed GIS mapping of infrastructure including component features.	Countywide	Less than \$500,000	Herkimer County, Herkimer/Oneida Comprehensive Planning Department	Short term (0-2 years)
RS 3-e	GIS Inventory of Open Space	Perform GIS inventory of county open space to identify opportunities for natural, recreational, and commercial uses.	Countywide	Less than \$500,000	Herkimer County, Herkimer-Oneida Counties Comprehensive Planning Department	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
<i>RS 4: Business Retention and Incentives</i>						
RS 4-a	Develop Industrial and Business Parks	Develop business and industrial parks in the Towns of Schuyler, Danube, German Flatts, Little Falls, and Manheim as recommended by the Mohawk Valley Economic Development District.	Towns of Schuyler, Danube, German Flatts, Little Falls and Manheim	Over \$5 million	Towns of Schuyler, Danube, German Flatts, Little Falls and Manheim	Long term (5+ years)
RS 4-b	Build an Event Center and Business Park at HCCC	Develop an event center and business park at Herkimer County Community College as recommended by the Mohawk Valley Economic Development District	Herkimer County Community College, Herkimer	Over \$15 million	Herkimer County	Mid-term (2-5 years)
RS 4-c	Develop Route 167 Retail Park in Little Falls	Develop the Route 167 Retail Park in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls	\$1 million	City of Little Falls	Mid-term (2-5 years)
RS 4-d	Improve Access to Industrial Park	Improve access routes to the Industrial Park in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls	\$500,000 to \$1 million	City of Little Falls	Short term (0-2 years)
RS 4-e	Expand Healthcare Initiative at HCCC	Expand the Growing Healthcare Initiative at the Herkimer County Community College	Herkimer County Community College, Herkimer	Over \$1 million	Herkimer County	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 4-f	Create Pop-up Store Incentive Program	Develop an incentive program for pop-up stores where retailers can lease space for a short time to test retail concepts without the risk of a long-term lease	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)
RS 4-g	Shared Services	Evaluate potential for shared services and municipal consolidation	Countywide	Less than \$500,000	Countywide	Short term (0-2 years)
RS 4-h	State Efficiency Grants	Utilize state government efficiency grant for evaluation and implementation	Countywide	Less than \$500,000	Countywide	Short term (0-2 years)
RS 4-i	Build a Regional Snowmobile Center	Develop and construct a regional snowmobile center in the Town of Ohio as recommended by the Mohawk Valley Economic Development District	Town of Ohio	Over \$1 million	Town of Ohio	Mid-term (2-5 years)
RS 4-j	Protect Main Street Business Areas	Relocate and flood proof Main Street / downtown businesses in high risk areas. For example, businesses along West Main Street in the Village of Mohawk that have repetitively flooded in the past could be flood proofed or moved to vacant buildings that are located outside of the flood zone.	Countywide	Over \$1 million	Countywide	Mid-term (2-5 years)
RS 4-k	Develop Herkimer County Tourist Map	Develop a Herkimer County specific map with coordinated way finding and signage for waterway tourist destinations	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 4-l	Develop Marketing Plan	Develop a plan to market area to outdoor enthusiasts and heritage tourists	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)
<i>RS 5: Community Development</i>						
RS 5-a	Redevelop the Village of Frankfort Brownfield	Implement recommendations from the Pre-Nomination brownfield redevelopment study completed for an approximately 470-acre area located along Main Street and the Mohawk River in the Village of Frankfort.	Village of Frankfort	Over \$1 million	Village of Frankfort	Mid-term (2-5 years)
RS 5-b	New Sewer and Water Lines to Support Housing Development	Construct new water and sewer lines in the Towns of Frankfort, Schuyler, and Newport to support a new housing development as recommended by the Mohawk Valley Economic Development District	Towns of Frankfort, Schuyler, and Newport	Over \$1 million	Towns of Frankfort, Schuyler, and Newport	Mid-term (2-5 years)
RS 5-c	Integrate Smart Growth Infrastructure	Integrate Smart Growth and green infrastructure into downtowns and waterfront revitalization efforts	Countywide	\$500,000 to \$1 million	Herkimer County Villages	Mid-term (2-5 years)
RS 5-d	West Mill/Elizabeth Street Redevelopment Project	Implement the West Mill/Elizabeth Street redevelopment project in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls	\$3 million	City of Little Falls	Mid-term (2-5 years)



Herkimer County NY Rising Countywide Resiliency Plan

ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 5-e	Implement Marina Project in the Village of Frankfort	Implement the marina project in the Village of Frankfort to enhance recreational and economic opportunities near the waterfront as recommended by the Mohawk Valley Economic Development District	Village of Frankfort	\$500,000 to \$1 million	Village of Frankfort	Short term (0-2 years)
RS 5-f	Preserve Historic Structures	Develop plan to preserve and re-purpose historic structures	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)
<i>RS 6: Protection of Vulnerable Populations and Enhancing Social Service Facilities</i>						
RS 6-a	Enhance Vulnerable Population Registry	Update and enhance existing vulnerable population registry maintained by the Herkimer County Office of Aging. Develop public relations campaign to increase participation in the registry. Convert registry into a GIS database to enhance response efforts during an emergency.	Countywide	Less than \$500,000	Herkimer County Office of Aging	Short term (0-2 years)



Herkimer County NY Rising Countywide Resiliency Plan

ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 6-b	Emergency Preparedness Plans for Vulnerable Population Housing Facilities	Enact mandate requiring nursing homes and other vulnerable population housing facilities to submit their emergency response plans to the Herkimer County Department of Health for review to ensure that the County has adequate sheltering capacity for persons with special medical needs and is fully prepared for any outstanding health issues.	Countywide	Less than \$500,000	Herkimer County Department of Health and Emergency Services	Short term (0-2 years)
RS 6-c	Develop Outreach Materials to Vulnerable Populations	Develop culturally appropriate outreach materials and outreach campaign for hard-to-reach vulnerable populations, such as migrant and seasonal farm workers that may not speak English and Amish populations.	Countywide	Less than \$500,000	Herkimer County Department of Health and Emergency Services	Short term (0-2 years)
RS 6-d	Support Volunteer and Non-profit Organizations	Continue to share resources with Herkimer-Oneida Organizations Active in Disasters (HOOAD), Catholic Charities, and others during and following disasters.	Countywide	Less than \$500,000	Herkimer County	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
<i>RS 7: Improving Shelter Capacity</i>						
RS 7-a	Utilize Town of German Flatts Emergency Shelter	Utilize the new Town of German Flatts emergency shelter that is currently under construction to increase shelter capacity for vulnerable populations and purchase back-up generator to ensure continued operations during an emergency.	Town of German Flatts	Less than \$500,000	Town of German Flatts	Short term (0-2 years)
RS 7-b	Register Shelters	Register all shelters in the County of Herkimer with the National Storm Shelter Registry (http://www.nssr.info/) to ensure that the Herkimer Emergency Operations Department is aware of all possible shelters and can share that information with the public.	Countywide	Less than \$500,000	Countywide	Short term (0-2 years)
RS 7-c	Develop Plan to Use HCCC as an Emergency Shelter	Develop and implement a plan to use Herkimer County Community College as an emergency shelter. Include improvements to ensure consistent road access to the College and back-up power generation.	Herkimer County Community College	\$500,000 to \$1 million	Herkimer County	Short term (0-2 years)



Herkimer County NY Rising Countywide Resiliency Plan

ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
<i>RS 8: Flood Protection for Health and Social Service Facilities</i>						
RS 8-a	Flood Evaluation for Critical Roadways	Conduct flood evaluation for roadways in close proximity to healthcare facilities as well as emergency operation facilities and determine alternate routes of access or implement mitigation strategies to reduce flooding on roadways.	Countywide	\$500,000 to \$1 million	Herkimer County Department of Emergency Services and Highway Department	Short term (0-2 years)
RS 8-b	Identify & Map Areas Isolated by Flooding	Identification and mapping of areas which cannot be reached during a storm to develop plans to address residents and Community assets that may become isolated during flooding; and contingency routes for evacuation.	Countywide	Less than \$500,000	Herkimer County Department of Emergency Services	Short term (0-2 years)
<i>RS 9: Resilient Housing</i>						
RS 9-a	Acquire Condemned or Foreclosed Homes Outside of Floodplain	Work with various state and federal agencies, including the Office of Community Renewal and the Department of Environmental Conservation, and financial institutions to acquire condemned or foreclosed homes outside the floodplain for rehabilitation and low-cost sale to relocated and income qualified residents.	Countywide	More than \$1 million	NYS DEC, Office of Community Renewal, local municipalities countywide	Long term (5+ years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 9-b	NFIP Enforcement	Develop a working agreement with the appropriate state agency to assume responsibilities for enforcement of the National Flood Insurance Program (NFIP) due to lack of capacity at local level.	Countywide	Less than \$500,000	NYS DEC and local municipalities countywide	Short term (0-2 years)
RS 9-c	Coordinate Housing Assistance	Coordinate state, federal and private disaster assistance for housing need	Statewide	Less than \$500,000	Federal, State and local government entities that provide disaster assistance	Short term (0-2 years)
RS 9-d	Provide Diverse Housing Options	Incentivize projects that would undertake housing rehabilitation or new housing to provide diversity of housing types and costs	Countywide	\$500,000 to \$1 million	Herkimer County, Village, City and Town governments	Mid-term (2-5 years)
RS 9-e	Improve Buy-out Programs	Initiate conversations with state and federal regional representatives to review and redraft policies, and/or develop new programs to improve state and federal buy-out programs that will: lessen overly restrictive eligibility criteria; reduce costs to local governments for participation and property maintenance; and encourage voluntary residential and business owner participation.	Statewide	Less than \$500,000	State government agencies	Short term (0-2 years)



Herkimer County NY Rising Countywide Resiliency Plan

ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
<i>RS 10: Improve Power and Telecommunication Systems</i>						
RS 10 - a	Investigate Utility Infrastructure at Highest Risk of Flooding	Investigate where utility infrastructure is most at risk from flooding damage and encourage the utilities to protect or relocate utility lines most at risk of failure, collapse or breakage.	Countywide	Less than \$500,000	Private utilities	Short term (0-2 years)
RS 10 - b	Back-up Power Generation	Provide critical facilities with backup power generation.	Countywide	\$500,000 to \$1 million	Herkimer County, Villages, City and Town governments	Short term (0-2 years)
RS 10 - c	Evaluate Opportunities to Expand Hydropower Generation	Undertake engineering feasibility studies for micro-hydropower generation and flood flow attenuation on high risk streams.	Countywide	Less than \$500,000	Private utilities, Herkimer County, Villages, City and Town governments, NYS DEC	Short term (0-2 years)
RS 10 - d	Investigate Opportunities for Renewable Energy	Investigate the use of renewable energy (such as wind turbines) to serve as alternative sources of energy during and after storms.	Countywide	Less than \$500,000	Private utilities, Herkimer County, Villages, City and Town governments	Short term (0-2 years)
RS 10 - e	Investigate Opportunities for Solar Photovoltaic Systems	Evaluate feasibility of municipal- and community-owned solar photovoltaics.	Countywide	Less than \$500,000	Herkimer County, Villages, City and Town governments	Short term (0-2 years)
RS 10 - f	Expand Northland Communication Project	Expand the Northland Communications project to increase broadband internet access.	Countywide	Over \$1 million	Northland Communications	Mid-term (2-5 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
<i>RS 11: Resilient Water, Wastewater, Stormwater, and Green Infrastructure Systems</i>						
RS 11 - a	Increase Resilience of Village of Mohawk Drinking Water Supply	Identify and develop supplemental water supply location for Village of Mohawk that could increase resiliency, increase capacity, and attract new business/residential development. Additionally, raise the existing water supply and water treatment plant above base flood elevation.	Village of Mohawk	Over \$1 million	Village of Mohawk	Mid-term (2-5 years)
RS 11- b	Repair Drainage System in the City of Little Falls Industrial Park	Perform repairs to the Industrial Park Creek drainage system in the City of Little Falls, particularly to the Carden and Frederick Creek underground drainage lines.	City of Little Falls	\$150,000	City of Little Falls	Short term (0-2 years)
RS 11- c	Upgrade East Herkimer Wastewater Treatment Facility	Upgrade the East Herkimer Wastewater Treatment Plan and install sewer extension	Town of Herkimer	Over \$1 million	Town of Herkimer	Mid-term (2-5 years)
RS 11- d	Improve Acme Road Drainage	Replace aging stormwater drainage infrastructure along Acme Road in the Village and Town of Frankfort to reduce flooding on the road.	Village and Town of Frankfort	\$500,000 to \$1 million	Village and Town of Frankfort	Short term (0-2 years)
RS 11- e	Repair Culverts in the City of Little Falls	Repair or replace culverts at Smith Street, Frederick Creek, and Carden Creek in City of Little Falls. Identify roads at high risk for closure and alternate routes of access	City of Little Falls	\$320,000	City of Little Falls	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 11 - f	Lou Ambers Drive Stormwater Improvement	Lou Ambers Drive from West German Street to Johnson Avenue in the Village of Herkimer will be milled, overlaid, and widened with a new sidewalk on the north side of the street. A new 3' by 12' box culvert will be constructed to convey the flow of the unnamed tributary of Bellinger Brook that crosses Lou Ambers Drive. The new culvert will convey the flow along Lou Ambers, across West German Street and into Bellinger Brook.	Village of Herkimer	\$1.4 million	Village of Mohawk, Herkimer County Highway Department	Short term (0-2 years)
RS 11 - g	Green Infrastructure Pilot Project at HCCC	Work with Herkimer County Community College to install a demonstration green infrastructure project on campus to reduce stormwater run-off	Herkimer County Community College, Herkimer	Less than \$500,000	Herkimer County	Short term (0-2 years)
RS 11 - h	Promote Green Infrastructure	Promote utilization of green infrastructure for parking facilities, and business district improvements.	Countywide	Less than \$500,000	Multi-jurisdictional	Short term (0-2 years)
RS 11 - i	Improve Water Management from Hinckley Reservoir	Leverage existing partnerships with the NYS Canal Corporation to begin a dialogue regarding the management of water releases from the Hinckley Reservoir.	Countywide	Less than \$500,000	Herkimer County, NYS Canal Corporation	Short term (0-2 years)



Herkimer County NY Rising Countywide Resiliency Plan

ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
<i>RS 12: Enhance Transportation Systems</i>						
RS 12 - a	Maple Avenue Bridge Removal	In Herkimer Village, remove the Maple Grove Avenue Bridge and convert the road to a cul-de-sac.	Village of Herkimer	\$500,000 to \$1 million	Village of Herkimer	Short term (0-2 years)
RS 12 - b	Replace Undersized Bridges	In Herkimer Village, replace the West German and Church Street bridges with new 45-foot minimum span bridges.	Village of Herkimer	Over \$5 million	Village of Herkimer	Mid-term (2-5 years)
RS 12 - c	Replace Fairfield Bridge	Replace Fairfield Street bridge (Route 29) as it crosses over Maltanner Creek with a wider span and a flatter more appropriately armored channel to reduce water velocities and limit erosive forces.	Village of Middleville	\$1 million to \$5 million	NYS Department of State	Mid-term (2-5 years)
RS 12 - d	Replace Route 28 Bridge	Replace the Main Street (Route 28) bridge in Middleville as it passes over Maltanner Creek with a wider structure, a lower bed and appropriate bed roughening to reduce flood risk in the village.	Village of Middleville	\$1 million to \$5 million	Village of Middleville, Herkimer County Department of Highways	Mid-term (2-5 years)
RS 12 - e	Evaluate Bridge Replacement in the Village of Ilion	Assess feasibility for replacement/resizing of the Otsego Street, Third Street, Second Street and Main Street bridges along Steele Creek in the Village of Ilion.	Village of Ilion	Feasibility: Less than \$500,000; Implementation Over \$5 million	Village of Ilion	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 12 - f	Dockey Road Bridge Replacement	Replace the Dockey Road (County Route 42) bridge.	Town of Manheim	\$1 million	Town of Manheim, Herkimer County Department of Highways	Short term (0-2 years)
RS 13: Creek Restoration and Capacity Improvements						
RS 13 - a	Steele Creek Comprehensive Flood Mitigation Study	Evaluate feasibility of a comprehensive flood mitigation approach along Steele Creek near and upstream from the existing concrete dam, "The Falls," which may include removal of the dam, multiple bridge replacements or removals, property acquisition, and channel resizing.	Village of Ilion, Town of German Flatts	Feasibility: Less than \$500,000; Implementation Over \$5 million	Village of Ilion, Town of German Flatts	Short term (0-2 years)
RS 13 - b	Develop Maintenance Dredging Guidelines that Includes Streambank Stabilization	Develop maintenance dredging guidelines and apply for renewable maintenance dredging permits from DEC for sensitive areas within the major creek and stream systems. Dredging guidelines should include directions and best practices for stabilizing creek banks where dredging has occurred to avoid excess sediment deposition immediately following removal and increased erosion along the streambanks.	Countywide	Less than \$500,000	Countywide	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 13 - c	Remove Sediment from East Canada Creek	Regularly remove sediment from East Canada Creek along Saltsman Road to reduce risk of flooding to the road.	Saltman Road, Town of Manheim	Less than \$500,000	Town of Manheim	Short term (0-2 years)
RS 13 - d	Evaluate Sediment Control Dam along Maltanner Creek	Evaluate the feasibility of constructing a sediment control dam for the upper portions of Maltanner Creek.	Town of Fairfield	Less than \$500,000	Town of Fairfield	Short term (0-2 years)
RS 13 - e	Develop Maintenance Program for West Canada and Maltanner Creeks	Develop a stream repair and maintenance program for the West Canada and Maltanner Creeks that incorporates monitoring of bank failures.	Towns of Fairfield and Newport, Villages of Middleville and Newport	Less than \$500,000	Multi-Jurisdictional	Short term (0-2 years)
RS 13 - f	Remove Cobble Bar, West Canada Creek	Remove cobble bar from the West Canada Creek at Bridge Street (Route 28) in Middleville.	West Canada Creek, Village of Middleville	Less than \$500,000	Village of Middleville	Short term (0-2 years)
RS 13 - g	Construct Low Flow Channels	Construct low-flow channels or v-notches within other streams to reduce risk of ice jams, lower water levels, and increase capacity.	Countywide	Less than \$500,000	Multi-Jurisdictional	Short term (0-2 years)
RS 13 - h	Repair Stream Bank Erosion, Fulmer Creek	Repair stream bank erosion along Fulmer Creek near Route 168 and Mortz Road in the Town of German Flatts	Town of German Flatts, near Route 168 and Mortz Road	Less than \$500,000	Town of German Flatts	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 13 - i	Stabilize Retaining Wall, Town of Frankfort	Repair and improve the retaining wall on the east bank of Moyer Creek near the Edgewood Trailer Park in the Town of Frankfort to ensure structural integrity and protect residences.	Town of Frankfort	\$500,000 to \$1 million	Town of Frankfort	Short term (0-2 years)
RS 13 - j	Stabilize Nowadaga Creek Bank	Stabilize the bank along approximately 200 feet of the Nowadaga Creek (between STA 142+00 and 103+00) and clean sediment and woody debris from channel	Town of Danube	Less than \$500,000	Town of Danube	Short term (0-2 years)
RS 13 - k	Relocate Town of Danube DPW Facility	Move the Town of Danube Department of Public Works shed and stockpiled materials away from the Nowadaga Creek, stabilize the Creek in this area and re-establish a floodplain on the right bank to mitigate ongoing erosion	Town of Danube	\$500,000 to \$1 million	Town of Danube	Short term (0-2 years)
RS 13 - l	Modify Operations at the Daniel Green Company Dam	Evaluate the feasibility of modifying operations at the Daniel Green Company Dam in Dolgeville in order to reduce water levels behind the dam by opening a low-flow outlet	Village of Dolgeville	Less than \$500,000	Daniel Green Company	Short term (0-2 years)
RS 13 - m	Modify Operations at the Dolgeville Hydroelectric Dam	Evaluate the feasibility of modifying operations at the Dolgeville Hydroelectric Dam to reduce the risk of ice jams and flooding	Village of Dolgeville	Less than \$500,000	Dolgeville Hydroelectric Utility	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
<i>RS 14: Natural Resource Enhancements</i>						
RS 14 - a	Develop Greenway Trail	Develop and implement a greenway trail in the Town of Salisbury and the Village of Dolgeville as recommended by the Mohawk Valley Economic Development District	Town of Salisbury and Village of Dolgeville	\$500,000 to \$1 million	Town of Salisbury and Village of Dolgeville	Mid-term (2-5 years)
RS 14 - b	Develop Waterfront Trail	Implement a waterfront trail system in the City of Little Falls as recommended by the Mohawk Valley Economic Development District	City of Little Falls	\$800,000	City of Little Falls	Mid-term (2-5 years)
RS 14 - c	Complete Canal Recreationway Trail	Implement the Canal Recreationway trail plan to create a continuous trail from the City of Little Falls east to Utica	Countywide along Erie Canal	Over \$5 million	Herkimer County, NYS Canal Corporation,	Mid-term (2-5 years)
RS 14 - d	Develop Bike and Pedestrian Trail Spurs from the Canal Recreationway Trail	Plan and implement bike and pedestrian trail spurs off the Canalway Trail that follow the Mohawk River tributaries to increase tourism and recreational opportunities.	Countywide along Mohawk River	\$500,000 to \$1 million	Village and Town Governments	Mid-term (2-5 years)
RS 14 - e	Acquire Land near Frankfort Harbor	Evaluate feasibility of the public acquisition of land adjacent to and west of the Frankfort Harbor site to be used as an open space and recreation area.	Village of Frankfort	Less than \$500,000	Village of Frankfort	Short term (0-2 years)



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ID	Project Name	Short Description	Location (Municipality)	Estimate Cost	Proposed Project Lead(s)	Anticipated Completion ³
RS 14 -f	Acquire Land near Confluence of Steele Creek and Mohawk River	Evaluate feasibility of the public acquisition of land near the confluence of Steele Creek and the Mohawk River in the Village of Ilion to be used as an open space and recreation area.	Village of Ilion	Less than \$500,000	Village of Ilion	Short term (0-2 years)



Section 6. Additional Materials



Farm outside of the Village of Newport



A. PUBLIC ENGAGEMENT PROCESS

Governor Cuomo has been a strong proponent of 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 appropriate projects, 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; and

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 Herkimer County NYRCR Program Committee meetings were held at the Herkimer Chamber of Commerce or the Herkimer County Administrative offices in Herkimer, NY:

- Committee Meeting 1, Thursday, March 13, 10:00 AM
- Committee Meeting 2, Tuesday, March 25, 10:00 AM
- Committee Meeting 3, Wednesday, April 7, 2:00 PM
- Committee Meeting 4, Tuesday, April 29, 10:00 AM
- Committee Meeting 5, Thursday, May 22, 2:00 PM
- Committee Meeting 6, Tuesday, June 17, 9:00 AM
- Committee Meeting 7, Tuesday, July 22, 10 AM



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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 Events

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. 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, feedback was collected for inclusion in the ongoing planning process. Public Engagement Events were scheduled to coincide with major milestones. 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 solicit initial input on the initial list of recovery projects, the asset inventory and to get ideas for the County Word Cloud;
2. To solicit input from the public concerning the draft Vision Statement, the asset categories, and identified needs and opportunities and to present the Recovery Projects Report;
3. To present and solicit input on the risk assessment to County assets as well as the additional resiliency projects identified by the Committee.

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.

Targeted outreach was also conducted with various stakeholders to keep them updated on the progress of the planning efforts and project identification. Stakeholders to which outreach was specifically conducted included:

- Herkimer County Legislature
- Herkimer County Conference of Mayors
- Herkimer County Board of Town Supervisors
- Herkimer County Director of Emergency Services
- Herkimer County Commissioner of Social Services
- Herkimer County Director of the Office for the Aging,
- Herkimer County Department of Public Health
- NYS Senator Seward and NYS Assemblyman Butler who represent Herkimer County



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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.



County of Herkimer Public Engagement Event

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 schedule for the three Public Engagement Events was as follows:

Event #1, Monday, March 24, 2014

This public open house workshop was 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 Community Reconstruction Planning Committee's work to date, including the identified recovery projects, assets, and storm damage. Approximately 20 community members attended the event and it was observed that attendees were pleased with the resources that were made available, receptive to the planning work to date, and engaged in discussions with their Committee members and fellow community members alike.

Event #2, Monday, April 28, 2014

This public open house workshop was focused on presenting the Needs and Opportunities, Community Assets and the Community Vision. Approximately 40 community members attended the event and it was observed that attendees were actively engaged in reviewing the materials available, eager to discuss the project with Committee Members and interested in providing input to the planning process.



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Event #3, Monday, July 15, 2014

This public open house workshop was 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 and it was observed that attendees were pleased with the resources that were made available, receptive to the planning work to date, and engaged in discussions with their Committee members and fellow community members alike.



B. AVAILABLE FUNDING SOURCE DESCRIPTIONS

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)³⁹, 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 lake-wide 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, with a matching funds requirement of at least 50% of total project cost;



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- **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;



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- **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 (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** 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 hazards⁴⁰;
- **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)**⁴¹ offers free, self-paced online courses for people engaged in emergency management and the general public;
- **EPA's Green infrastructure**⁴² website offers a variety of online resources and materials types, benefits, and implementation of green infrastructure with examples from around the country.



C. COMMUNITY ASSET INVENTORY AND RISK ASSESSMENT

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 compiled as part of the Resiliency Plan 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 included in the Resiliency Plan was based on both community-identified assets and state identified assets. 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. 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 Herkimer County

During Committee Meeting #4 held on April 7, 2014, the Committee participated in a Community Value and Critical Asset pilot 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 that is 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 nine Low Value assets, five Medium Value assets and thirteen 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, site reconnaissance and 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 State guidance (based on *Table 3: Vulnerability Based on Impact on Service or Function of Community Assets* contained in Guidance for Community Reconstruction Plans) 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.⁴³

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 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).



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
1	Frankfort Recreational Dams #1 & #2 (Lock #19)	Extreme	Infrastructure Systems	Navigable waterway facilities	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	4	60
2	Lock E-18 Dam Herkimer	Extreme	Infrastructure Systems	Navigable waterway facilities	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	4	60
3	Lock E-16 Dam at Rocky Rift	Extreme	Infrastructure Systems	Navigable waterway facilities	No	No	Low	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	4	54
4	Electrical Substation - Village of Mohawk	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	4	48
5	Lock E-17	High	Infrastructure Systems	Navigable waterway facilities	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	4	48
6	Owen D. Young Central School (Shelter)	Extreme	Health and Social Services	Schools	Yes	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	4	48
7	Van Hornesville Fire Station - Stark Fire Department	Extreme	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	4	48
8	Bridge - 2266820 / West German St / Bellinger Brook / Village	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	3	45
9	Bridge - 2266830 / Maple Grove Ave / Bellinger Brook / Village	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	3	45
10	Residential Parcels - Town of Webb	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	4	3.50	3	42
11	Bridge - 1038960 / 168 168 23011015 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	3	36
12	Bridge - 1038970 / 168 168 23011019 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	3	36
13	Bridge - 1038980 / 168 168 23011020 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	3	36
14	Bridge - 2204890 / Moyer Road / Otsquago Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	4	36
15	Mohawk (V) Water Works Drinking Water Treatment Plant and Wells (3)	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	3	36
16	A Little Mommy & Daddy Daycare	Extreme	Health and Social Services	Daycare and Eldercare	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
17	Bridge - 1002720 / Main Street / Steele Creek / Village	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
18	Bridge - 1002730 / West Main Street / Fulmer Creek / Town	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
19	Bridge - 1026490 / 51 51 23031159 / Steele Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
20	Bridge - 1074520 / 55 5S23021408 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
21	Bridge - 2263710 / Hilltop Road / Moyer Creek / Village	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
22	Bridge - 2263720 / West Main Street / Moyer Creek / Village	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
23	Bridge - 2266860 / Third Street / Steele Creek / Town	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
24	Campus Apts	Extreme	Housing	Senior Housing	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
25	Commercial Assets - City of Little Falls	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
26	Commercial Assets - Village of Frankfort	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
27	Commercial Assets - Village of Herkimer	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
28	Commercial Assets - Village of Ilion	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
29	Commercial Assets - Village of Middleville	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
30	Commercial Assets - Village of Mohawk	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
31	Commercial Assets - Village of Newport	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
32	Frankfort Fire Department Volunteer Ambulance	Extreme	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
33	Frankfort Fire Station	Extreme	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
34	Harry M Fisher Elementary School (shelter)	Extreme	Health and Social Services	Schools	Yes	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
35	Litchfield Manor	Extreme	Housing	Senior Housing	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
36	London Towers Apts	Extreme	Housing	Senior Housing	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
37	Middleville Post Office - 13406	Extreme	Health and Social Services	Government and Administrative Services	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
38	Mohawk Valley Christian Academy	Extreme	Health and Social Services	Schools	Yes	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
39	Newport Post Office - 13416	Extreme	Health and Social Services	Government and Administrative Services	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
40	Residential Assets - City of Little Falls	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
41	Residential Assets - Village of Frankfort	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
42	Residential Assets - Village of Herkimer	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
43	Residential Assets - Village of Ilion	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
44	Residential Assets - Village of Middleville	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
45	Residential Assets - Village of Mohawk	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
46	Residential Assets - Village of Newport	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
47	Residential Assets - Village of West Winfield	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
48	Streamside Manor	Extreme	Housing	Senior Housing	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
49	Village of Middleville Municipal Hall	Extreme	Health and Social Services	Government and Administrative Services	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	2	30
50	Bridge - 1051340 / 168 168 2301051 / Fulmer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	3	27
51	Commercial Assets - Town of Frankfort	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
52	Commercial Assets - Town of German Flatts	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
53	Commercial Assets - Town of Herkimer	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
54	Commercial Assets - Town of Little Falls	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
55	Commercial Assets - Town of Stark	Extreme	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
56	Poland Village Drinking Water Treatment Plant and Water wells (2)	Extreme	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
57	Residential Assets - Town of Frankfort	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
58	Residential Assets - Town of German Flatts	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
59	Residential Assets - Town of Newport	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
60	Residential Assets - Town of Schuyler	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
61	Residential Assets - Town of Stark	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
62	Residential Assets - Town of Winfield	Extreme	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	2	27
63	Burrow's Paper	Extreme	Economic	Large Business	No	No	High	Yes	No	No	Yes	Yes	Yes	2	3	4.00	2	24
64	Commercial Assets - City of Little Falls	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
65	Commercial Assets - Village of Dolgeville	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
66	Commercial Assets - Village of Frankfort	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
67	Commercial Assets - Village of Herkimer	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
68	Commercial Assets - Village of Ilion	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
69	Commercial Assets - Village of Middleville	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
70	Commercial Assets - Village of Mohawk	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
71	Commercial Assets - Village of Newport	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
72	Commercial Assets - Village of West Winfield	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
73	Herkimer Co Sd Wastewater Treatment Facility	High	Infrastructure Systems	Wastewater	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
74	Hydroelectric Plant - Town of Little Falls	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
75	Hydroelectric Plant - Village of Newport	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
76	John Guy Prindle Apts	High	Housing	Senior Housing	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
77	Residential Parcels - City of Little Falls	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
78	Residential Parcels - Village of Cold Brook	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
79	Residential Parcels - Village of Dolgeville	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
80	Residential Parcels - Village of Frankfort	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
81	Residential Parcels - Village of Herkimer	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
82	Residential Parcels - Village of Ilion	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
83	Residential Parcels - Village of Middleville	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
84	Residential Parcels - Village of Mohawk	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
85	Residential Parcels - Village of Newport	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
86	Residential Parcels - Village of Poland	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24
87	Residential Parcels - Village of West Winfield	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	2	24



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
88	Saint Francis De Sales Regional Catholic School	Moderate	Health and Social Services	Schools	Yes	No	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	3	23
89	Commercial Assets - Town of Newport	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
90	Commercial Assets - Town of Danube	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
91	Commercial Assets - Town of Fairfield	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
92	Commercial Assets - Town of Frankfort	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
93	Commercial Assets - Town of German Flatts	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
94	Commercial Assets - Town of Herkimer	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
95	Commercial Assets - Town of Litchfield	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
96	Commercial Assets - Town of Ohio	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
97	Commercial Assets - Town of Salisbury	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
98	Commercial Assets - Town of Schuyler	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
99	Commercial Assets - Town of Webb	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
100	Commercial Assets - Town of Winfield	High	Economic	Small Business	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
101	Hydroelectric Plant 3 - Town of Manheim	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
102	Residential Parcels - Town of Columbia	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
103	Residential Parcels - Town of Danube	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
104	Residential Parcels - Town of Fairfield	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
105	Residential Parcels - Town of Frankfort	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
106	Residential Parcels - Town of German Flatts	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
107	Residential Parcels - Town of Herkimer	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
108	Residential Parcels - Town of Litchfield	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
109	Residential Parcels - Town of Manheim	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
110	Residential Parcels - Town of Newport	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
111	Residential Parcels - Town of Norway	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
112	Residential Parcels - Town of Ohio	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
113	Residential Parcels - Town of Russia	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
114	Residential Parcels - Town of Salisbury	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
115	Residential Parcels - Town of Schuyler	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
116	Residential Parcels - Town of Stark	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
117	Residential Parcels - Town of Winfield	High	Housing	Single-Family Residence	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	2	21
118	Commercial Assets - Town of Manheim	Moderate	Economic	Small Business	No	No	Medium	Yes	No	No	Yes	No	Yes	1.5	3	2.00	3	18
119	Hydroelectric Plant - Town of Russia	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	2	18
120	Rivers Edge Restaurant - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	2	18
121	Bridge - 1073640 / 5S 5S23021390 / Steele Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
122	Bridge - 2255530 / Hansen Avenue / Mohawk River / City	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
123	Bridge - 2255540 / South Ann Street / Mohawk River / City	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
124	Bridge - 2266840 / Richfield Street / Steele Creek / Town	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
125	Bridge - 2266870 / Second Street / Steele Creek / Town	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
126	Bridge - 2266880 / William Street / Mohawk River / City	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
127	Bridge - 3307830 / Old State Road / West Canada Creek / County	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
128	Bridge - 4050290 / 169 169 23013119 / River Road / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
129	Bridge - 4051180 / 51 51 23031168 / 5 5 23111093 / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
130	Bridge - 4308230 / 922B 922B23011001 / Erie Barge Canal / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
131	Christian and Missionary Alliance Church	Extreme	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
132	Church of the Annunciation	Extreme	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
133	City of Little Falls Water Treatment Plant	Extreme	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
134	Commercial Assets - City of Little Falls	Moderate	Economic	Small Business	No	No	Medium	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
135	Commercial Assets - Village of Frankfort	Moderate	Economic	Small Business	No	No	Medium	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
136	Commercial Assets - Village of Herkimer	Moderate	Economic	Small Business	No	No	Medium	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
137	Commercial Assets - Village of Ilion	Moderate	Economic	Small Business	No	No	Medium	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
138	Commercial Assets - Village of Mohawk	Moderate	Economic	Small Business	No	No	Medium	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
139	Dolgeville Wastewater Treatment Plant	Moderate	Infrastructure Systems	Wastewater	No	Yes, FEMA	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
140	Electrical Substation - Village of Ilion	Extreme	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
141	First Baptist Church	Extreme	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
142	First Methodist Church	Extreme	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
143	First Presbyterian Church	Extreme	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
144	Gilbert Knitting Mills Dam	Extreme	Infrastructure Systems	Navigable waterway facilities	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
145	Ilion Municipal Building (Shelter)	Extreme	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
146	Ilion Post Office - 13357	Extreme	Health and Social Services	Government and Administrative Services	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
147	Mohawk Valley Community Action	Extreme	Health and Social Services	Daycare and Eldercare	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
148	Residential Parcels - Village of Dolgeville	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
149	Residential Parcels - Village of Frankfort	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
150	Residential Parcels - Village of Herkimer	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
151	Residential Parcels - Village of Ilion	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
152	Residential Parcels - Village of Mohawk	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
153	Saint Francis De Sales Roman Catholic Church	Moderate	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
154	Trinity Evangelical Lutheran Church	Moderate	Natural and Cultural Resources	Cultural or Religious Establishments	No	No	Low	Yes	No	No	Yes	Yes	Yes	2	3	2.50	2	15
155	Village of Ilion Municipal Hall	Extreme	Health and Social Services	Government and Administrative Services	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	5.00	1	15
156	Bridge - 1020020 / 28 28 23041099 / Fulmer Creek / NYS DOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.50	1	14
157	Bridge - 1020110 / 28 28 23041206 / West Canada Creek / NYS DOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.50	1	14
158	Bridge - 3307660 / County Road 37 / Mohawk River / County	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	4.50	1	14
159	Bridge - 3307680 / Spinnerville Road / Steele Creek / County	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	Yes	Yes	2.5	3	4.50	1	14
160	Bridge - 1002429 / 5 5 23111108 / Csx Transportation / NYS DOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
161	Bridge - 1002440 / 5 5 23111123 / West Canada Creek / NYS DOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
162	Bridge - 1015840 / 20 20 23141023 / Unadilla River / NYS DOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
163	Bridge - 1020250 / 28 28 23081107 / Midd Br Moose Rvr / NYS DOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
164	Bridge - 1020260 / 28 28 23081116 / Moose River / NYS DOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
165	Bridge - 1030870 / 80 80 23051006 / Otsquago Creek / NYS DOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
166	Bridge - 1030880 / 80 80 23051028 / Otsquago Creek / NYS DOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
167	Bridge - 1030890 / 80 80 23051030 / Otsquago Creek /	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
	NYS DOT																	
168	Bridge - 1030900 / 80 80 23051041 / Otsquago Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
169	Bridge - 1030910 / 80 80 23051044 / Otsquago Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
170	Bridge - 1038990 / 168 168 23011030 / Fulmer Creek / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
171	Bridge - 1051170 / 29 29 21021000 / East Canada Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
172	Bridge - 1051360 / 168 168 23011140 / Otsquago Crk / NYSDOT	Extreme	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
173	Bridge - 2204620 / Shells Bush Road / West Canada Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
174	Bridge - 2255580 / Brice Road / Moyer Creek / Town	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
175	Bridge - 2263620 / Old State Rte 5S / Ferguson Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
176	Bridge - 3307840 / Old State Road / West Canada Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
177	Bridge - 4020060 / 28 28 23041113 / State Barge Canal / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
178	Bridge - 4038920 / 167 167 23022008 / W. Mill St / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
179	Bridge - 4423081 / 90I X Wb Mp219.2 / 5S 5S23021127 / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
180	Bridge - 4423082 / 90I Xeb-Mp 219.2 / 5S 5S23021127 / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
181	Bridge - 4423090 / Csx Transportation / N Y S Barge Canal / Retired (Use To Be Conrail - Converted To 60)	Extreme	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
182	Bridge - 5516049 / 901 X / Exit 30 Ramp / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
183	First United Methodist Church	Extreme	Natural and Cultural Resources	Historic Landmarks and Facilities	No	No	Low	Yes	No	No	Yes	Yes	Yes	2	3	4.00	1	12
184	Herkimer Village Drinking Water Treatment Plant	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
185	Lowe's Home Center	High	Economic	Large Business	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
186	Middle Falls Dam	High	Infrastructure Systems	Navigable waterway facilities	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
187	Mohawk Valley Country Club Restaurant - Drinking Water Well	Extreme	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	4.00	1	12
188	New York State Thruway Authority Microwave Towers (2)	High	Infrastructure Systems	Telecommunications	No	No	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
189	Newport Fire Station 4 - Newport	High	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
190	OPWDD Family Care Facility	High	Health and Social Services	Healthcare Facilities	Yes	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
191	Remington Elementary School (Shelter)	High	Health and Social Services	Schools	Yes	Yes, FEMA	High	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
192	Residential Parcels - Town of Danube	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	No	Yes	1.5	3	2.00	2	12
193	Residential Parcels - Town of Frankfort	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	No	Yes	1.5	3	2.00	2	12
194	Residential Parcels - Town of German Flatts	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	No	Yes	1.5	3	2.00	2	12
195	Residential Parcels - Town of Little Falls	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	No	Yes	1.5	3	2.00	2	12
196	Residential Parcels - Town of Manheim	Moderate	Housing	Single-Family Residence	No	No	High	Yes	No	No	Yes	No	Yes	1.5	3	2.00	2	12



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
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197	State Diverting Dams (North & South)	High	Infrastructure Systems	Navigable waterway facilities	No	No	Low	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
198	US Post Office--Ilion	Extreme	Natural and Cultural Resources	Historic Landmarks and Facilities	No	No	Low	Yes	No	No	Yes	Yes	Yes	2	3	4.00	1	12
199	Village of Newport Municipal Hall	High	Health and Social Services	Government and Administrative Services	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	3	3	4.00	1	12
200	Armstrong Trailer Park Drinking Water Treatment Plant and Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
201	Bridge - 1002390 / 5 5 23111035 / Sterling Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
202	Bridge - 1002400 / 5 5 23111056 / Bridenbecker Crk / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
203	Bridge - 1002790 / 5S 5S23021236 / Nowadaga Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
204	Bridge - 1004760 / 8 8 23081201 / West Canada Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
205	Bridge - 1020090 / 28 28 23041140 / Hydraulic Canal / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
206	Bridge - 1026470 / 51 51 23031019 / Unadilla River / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.50	1	11
207	Bridge - 1039000 / 168 168 23011034 / Fulmer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
208	Bridge - 1051241 / 5S 5S23021069 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.50	1	11
209	Bridge - 1051242 / 5S 5S23021070 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.50	1	11
210	Bridge - 2204570 / Casler Road / Unadilla Lake Out / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11



Risk Assessment Tool

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211	Bridge - 2204920 / Bullock Road / Beaver River / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
212	Bridge - 2204940 / Rondaxe Road / No Br Moose River / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
213	Bridge - 2204950 / Covey Road / Outlet South Bay / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
214	Bridge - 2268960 / Military Road / Beaver Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
215	Bridge - 3307720 / County Road 246 / Crum Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
216	Bridge - 3307920 / Gray Wilmurt Road / N Br Black Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
217	Bridge - 3307940 / Gray Wilmurt Rd / Fourmile Brook / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
218	Bridge - 3307950 / Gray Wilmurt Road / West Canada Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
219	Bridge - 3308010 / County Road 113 / Prospect Pwr Chnl / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
220	Bridge - 3308040 / Stormy Hill Road / Black Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
221	Bridge - 3308080 / Emmonsburg Road / East Canada Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
222	Bridge - 3308220 / South Shore Road / Twin Pond Outlet / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
223	Bridge - 4423010 / Service Road / Erie Barge Canal / NYSDOT	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
224	Bridge - 5516100 / 90I X / Burch Creek / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
225	Bridge - 5516110 / 90I X / Knapp Creek / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
226	Bridge - 5516140 / 90I X / Budlong Creek / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
227	Dolgeville Fire Station - Dolgeville	High	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	Yes	Yes	2.5	3	3.50	1	11
228	Hollywood Hills Condo - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
229	Hydroelectric Plant 1 - Town of Webb	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
230	Hydroelectric Plant 2 - Town Of Webb	High	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
231	Mohawk Valley Water Authority - Drinking Water Treatment Plant	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
232	Newport Stone Arch Bridge	Extreme	Natural and Cultural Resources	Historic Landmarks and Facilities	No	No	Low	Yes	Yes	No	No	No	Yes	1.5	3	3.50	1	11
233	Norridgewock III - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
234	NYS-Fourth Lake Picnic Area - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
235	NYS-Stillwater Boat Launch - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
236	Rap Shaw Club - Drinking Water Treatment Plant	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
237	The Waldheim - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
238	YMCA Camp Gorham - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	Yes	No	Yes	2.5	3	3.50	1	11
239	Big Moose Inn - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
240	Bridge - 1002360 / 5 5 23111004 / Budlong Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
241	Bridge - 1002370 / 5 5 23111017 / Knapp Brook / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
242	Bridge - 1002450 / 5 5 23113025 / Crum Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
243	Bridge - 1004710 / 8 8 23081017 / Cold Brook / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
244	Bridge - 1004720 / 8 8 23081019 / Cold Brook / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
245	Bridge - 1004730 / 8 8 23081026 / Cold Brook / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
246	Bridge - 1004740 / 8 8 23081383 / Black Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
247	Bridge - 1004750 / 8 8 23081143 / West Canada Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
248	Bridge - 1020230 / 28 28 23081009 / Moose River / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
249	Bridge - 1020550 / 29 29 23011088 / Spruce Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
250	Bridge - 1020560 / 29 29 23011102 / Spruce Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
251	Bridge - 1039010 / 168 168 23011035 / Fulmer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
252	Bridge - 1039060 / 171 171 23011000 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
253	Bridge - 1039080 / 171 171 23011014 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
254	Bridge - 1039090 / 171 171 23011019 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
255	Bridge - 1039100 / 171 171 23011028 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
256	Bridge - 1039110 / 171 171 23011035 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
257	Bridge - 1039120 / 171 171 23011037 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
258	Bridge - 1039130 / 171 171 23011045 / Moyer Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
259	Bridge - 1051200 / 5S 5S23021011 / Ferguson Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
260	Bridge - 1069820 / 51 51 23031129 / Steele Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
261	Bridge - 1069830 / 51 51 23031126 / Steele Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
262	Bridge - 1069840 / 51 51 23031123 / Steele Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
263	Bridge - 1069850 / 51 51 23031114 / Steele Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
264	Bridge - 2204590 / Tibbitts Road / Nowadaga Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
265	Bridge - 2204700 / Reinhardt Road / Black Cr / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
266	Bridge - 2204740 / Harvey Bridge Rd / West Canada Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
267	Bridge - 2204750 / Farr Road / Black River / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
268	Bridge - 2204790 / Fairview Road / Spruce Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
269	Bridge - 2204810 / Red Mill Road / Spruce Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
270	Bridge - 2204820 / Bingham Mill Road / Trammel Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
271	Bridge - 2204930 / Greenbridge Road / Mid Br Moose Rvr / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
272	Bridge - 2204980 / Doyle Road / North Winfield Cr / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
273	Bridge - 2204990 / Jones Road / Unadilla River / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
274	Bridge - 2205000 / Sale Road / Br Unadilla River / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
275	Bridge - 2263570 / Snowmobile Trail / No Br Moose River / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
276	Bridge - 2263610 / Fairview Road / Spruce Creek / Town	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
277	Bridge - 3307530 / County Road 85 / Unadilla River / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
278	Bridge - 3307570 / Newville Road / Nowadaga Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
279	Bridge - 3307590 / County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
280	Bridge - 3307600 / County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
281	Bridge - 3307630 / County Road 13 / Ferguson Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
282	Bridge - 3307640 / County Road 13 / Ferguson Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
283	Bridge - 3307690 / County Road 68 / Fulmer Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
284	Bridge - 3307700 / West End Road / West Canada Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
285	Bridge - 3307960 / County Road 73 / Black Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
286	Bridge - 3308050 / County Road 164 / Spruce Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
287	Bridge - 3308090 / County Road 221 / Spruce Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
288	Bridge - 3308120 / Cosby Manor Road / Wood Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
289	Bridge - 3308190 / N Winfield Road / N Winfield Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
290	Bridge - 3308200 / N Winfield Road / N Winfield Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
291	Bridge - 3308210 / Big Moose Road / No Br Moose River / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
292	Bridge - 3366130 / County Road 37 / Ferguson Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
293	Bridge - 3366140 / Bleeker St Exten / Ferguson Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
294	Bridge - 3366150 / County Road 141 / No.Winfield Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
295	Bridge - 5516021 / 90I X Westbound / Depot Rd / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
296	Bridge - 5516022 / 90I X Eastbound / Depot Rd / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
297	Bridge - 5516060 / 90I X Md225.43 / Bridenbaker Creek / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
298	Bridge - 5516091 / 90I X(Wb) / Sterling Creek / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
299	Bridge - 5516092 / 90I X(Eb) / Sterling Creek / NYS Thruway Authority	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
300	Bridge - 7715300 / Adirondack Scenic / Moose River / NYSDOT	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
301	Bridge - 7715310 / Adirondack Scenic / Midd Br Moose Rvr / NYSDOT	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
302	Bridge - 7715320 / Adirondack Scenic / Midd Br Moose Rvr / NYSDOT	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
303	Bridge - 7715360 / Adirondack Scenic / Twitchell Creek / NYSDOT	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
304	Bridge - 7715370 / Adirondack Scenic / Beaver River / NYSDOT	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9



Risk Assessment Tool

Asset Information								Landscape Attributes							Risk Assessment			
ID	Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Defensive Flood Protection Measures	Elevation	Freeboard	Point of Confluence.	Storm Water Discharge	Vegetated Stream Bank Buffers	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
305	Bridge -3307580 / County Road 102 / Nowadaga Creek / County	High	Infrastructure Systems	Transportation	No	No	Medium	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
306	Camp Northwood - 3 Drinking Water Wells	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
307	Cedarville Ambulance Inc.	High	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
308	Cedarville Fire Station - Columbia Litchfield Fire Department	High	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
309	NYS-Nicks Lake State Park - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
310	Old Forge (V) Water District - Drinking Water Well	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
311	VFW Post 2338- George R. Pritchard	High	Infrastructure Systems	Water Supply	No	Yes, FEMA	High	Yes	Yes	Yes	No	No	Yes	2	3	3.00	1	9
312	Big Moose Community Chapel	High	Natural and Cultural Resources	Historic Landmarks and Facilities	No	No	Low	Yes	No	No	Yes	No	Yes	1.5	3	2.50	1	8
313	City of Little Falls Waste Water Treatment Plant	Moderate	Infrastructure Systems	Wastewater	No	Yes, FEMA	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	1	8
314	Electrical Substation - Village Of Frankfort	Moderate	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	1	8
315	Ilion Fire Station - Ilion	Moderate	Health and Social Services	Emergency Operations/Response	No	Yes, FEMA	High	Yes	No	No	Yes	Yes	Yes	2	3	2.50	1	8
317	OPWDD Community Residence Facility	Moderate	Housing	Supportive Housing	Yes	No	Medium	Yes	No	No	Yes	Yes	Yes	2	3	2.50	1	8
318	Salisbury Center Covered Bridge	High	Natural and Cultural Resources	Historic Landmarks and Facilities	No	No	Low	Yes	Yes	No	No	No	Yes	1.5	3	2.50	1	8
319	Bridge - 1073590 / 168 168 23011028 / Flatt Creek / NYSDOT	Moderate	Infrastructure Systems	Transportation	No	No	High	Yes	No	No	Yes	No	Yes	1.5	3	2.00	1	6
320	Electrical Substation - Village Of Herkimer	Moderate	Infrastructure Systems	Power Supply	No	Yes, FEMA	High	Yes	No	No	Yes	Yes	No	1.5	3	2.00	1	6



Landscape Attributes Explained

- *Defensive Flood Protection:* Measures: Are absent, below BFE, in poor condition, or lack maintenance commitment.
- *Elevation:* Elevation of the asset site is below Base Flood Elevation.
- *Freeboard:* Elevation of the habitable or occupied portion of the asset is less than two (2) feet above BFE.
- *Point of Confluence:* Asset is located within area subject to increased flood risk due to confluence of merging streams.
- *Storm Water Discharge:* Asset is located within area subject to increased flood risk due to storm water system discharge.
- *Vegetated Stream Bank Buffers:* Asset is within Floodway Fringe (FEMA definition) of stream and without adequate vegetated buffers to absorb or divert flood waters.



D. GLOSSARY

Acronyms

- AARP - American Association of Retired Persons
- ACS - American Community Survey
- ADA - Americans with Disabilities Act
- CBA - Cost-benefit analysis
- CBD - Central Business District
- CDBG-DR - Community Development Block Grant – Disaster Recovery
- CDP - Census Designated Place
- CERT - Communication Emergency Response Team
- DPW - Department of Public Works
- EMS - Emergency Medical Services
- FEMA - Federal Emergency Management Agency
- FTE - Full-time equivalent
- GIS - Geographic Information Systems
- HUD - U.S. Department of Housing and Urban Development
- LIRR - Long Island Rail Road
- NOAA - National Oceanic and Atmospheric Administration
- NGO - Non-governmental organization
- 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



Herkimer County NY Rising Countywide Resiliency Plan

OPWDD - Office for People with Developmental Disabilities

RSF - Recovery Support Function

SBA - Small Business Administration

USACE - U.S. Army Corps of Engineers

VFW - Veterans of Foreign Wars

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.

Conceptual Plan - A snapshot of the current thoughts of the community and planning committee. The plans will evolve as communities analyze the risk to their assets, their needs and opportunities, the potential costs and benefits of projects and actions, and their priorities.

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.

Implementation Schedule - Preparing an implementation schedule of the actions needed to implement the strategies.

Lidar - A remote sensing technology that measures distance by illuminating a target with a laser and analyzing the reflected light.

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.

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.

Strategies for Investment and Action - Developing strategies and the projects and actions needed to implement the strategies; identifying potential costs and benefits of chosen projects and actions, as well as potential funding sources.

Vulnerability - The capacity of an asset to return to service after an event.



E. END NOTES

- ¹ All photos in this document are provided courtesy of the NYRCR Consultant Team, unless otherwise noted.
- ² Herkimer County HealthNET, Inc. & Herkimer County Integrated County Planning. *2013 Herkimer County Risk Assessment Profile*. 2012. Available at: <http://herkimercounty.org/content/Generic/View/40>
- ³ FEMA. Flood Insurance Study of Herkimer County, NY. September 30, 2011.
- ⁴ Jin, S., Yang, L., Danielson, P., Homer, C., Fry, J., and Xian, G. 2013. A comprehensive change detection method for updating the National Land Cover Database to circa 2011. *Remote Sensing of Environment*, 132: 159 – 175.
- ⁵ Milone & MacBroom, Inc. Emergency Transportation Infrastructure Recovery Water Basin Assessment and Flood Hazard Mitigation Alternatives. April 2014.
- ⁶ Herkimer County Chamber of Commerce, <http://www.herkimercountychamber.com/attractions.asp>
- ⁷ Herkimer County Community College. Visit Herkimer College. Available at: <http://www.herkimer.edu/explore/visit-herkimer-college/>
- ⁸ Herkimer County Community College. Herkimer College’s Profound Community Impact. Available at: <http://www.herkimer.edu/explore/socioeconomic-community-impact/>
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³⁹ 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.

⁴⁰ In 2014, New York State was approved for a \$1.2 million grant from FEMA HMGP to install stream gauges along the Mohawk River, Oswego River, and Upper Hudson River Basin.

⁴¹ FEMA Independent Study Program can be accessed at <http://training.fema.gov/IS/crslist.aspx>

⁴² EPA's Green Infrastructure site can be accessed at:

http://water.epa.gov/infrastructure/greeninfrastructure/gi_what.cfm

⁴³ Vulnerability criteria was classified based on State guidance as follows:

- **Insignificant (1): *limited interruption*** in service/short-term reduction in service
- **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