

Village of Ravena

This section presents the jurisdictional annex for the Village of Ravena for the 2024 Albany County Hazard Mitigation Plan (HMP). It includes information and guidance intended to assist public and private entities in reducing losses from future hazard events. This jurisdictional annex focuses on actions that can be implemented prior to a hazard event to reduce adverse impacts to people and property; it is not intended to serve as guidance for what to do when a hazard event occurs or how to recover following a hazard event. This jurisdictional annex provides an overview of the community and its critical facilities, evaluates the community's vulnerability to various hazards, assesses the community's existing capability to mitigate hazards, and identifies actions that could be implemented to mitigate hazard risks and, ultimately, reduce damages to people and property resulting from hazard events.

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1 CONTACT INFORMATION

The primary contacts for Albany County regarding this Jurisdictional Annex are identified as follows:

- Primary: William J. Misuraca, Village Mayor
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2 COMMUNITY SNAPSHOT

2.1 Demographics

The 2020 Census estimated that 3,271 people live in the Village of Ravena. The Village of Ravena's population has increased by 0.46% since the 2010 Census (3,256). The median age in the Village of Ravena is 39.7 years, and 15% of the population is over the age of 65. The median household income in the Village of Ravena is \$65,027.

2.2 Location & Land Characteristics

The Village of Ravena is a Village located in Albany County and is in the southeast part of the Town of Coeymans. The Village of Ravena covers approximately 1.5 square miles. The properties within the Village of Ravena have a total assessed value of approximately \$224,358,851, which is distributed across a variety of property classes.

The major transportation corridor in the Village of Ravena is U.S. Route 9W. The key water feature near the Village of Ravena is Hannacrois Creek about 1.5 miles from the Village.

2.3 Governing Body

A village mayor and four trustees govern the Village of Ravena.

2.4 Recent and Anticipated Future Development

According to a review of 239 Referrals since the last County HMP (2018), several new developments have been approved or proposed within the Village. The proposals that the Village received are summarized in Table 2-1 below. Some of the proposals for the Village may be located in the 0.1% or 0.2% annual chance flood event area, but this was not specified in the proposal. Additionally, building permits that have been issued for the Village between 2018 to 2023 are summarized in Table 2-2 below, based on data provided by the Village of Ravena. These developments may affect the Village's vulnerability to the hazards identified in this HMP.

Table 2-1. Developments from 2018 to 2023

Project Name	Project Location	Consideration	Date
126 Main St. - Retail Change of Occupation	126 Main Street	Site plan review to change the vacant building into a retail store which was previously planned for a café.	1/20/2022
Storage Units & Apartments	100 Main Street	Site plan review to convert an existing bowling alley, spots bar, and apartments located at 100 Main Street to a Climate Controlled Self-Storage Facility and one mixed use rental unit.	7/21/2022
Local Law #2 - Wildlife Feeding	Village of Ravena	Adoption of local law to stop/hinder the feeding of wildlife in the Village of Ravena.	9/16/2021
Marino's Collectables	4 Central Ave	Site plan review to remodel the building into using it as a comic/arcade store.	10/21/2021
Wild Room Inc.	172 Main Street	Site Plan Review to turn the vacant building into tattoo shop on the first floor and an art studio on the second floor.	12/16/2021
Village of Ravena Local Law Amendment	Village of Ravena	Local law amendment to the Village of Ravena zoning and the zoning map.	12/16/2021
Alli's Bridal	4 Central Ave	Site plan review to renovate an empty store into a Bridal shop.	3/18/2021
143 Main Street	143 Main Street	Site plan review to change store front on the first floor to office space for real estate.	5/27/2021
126 Main Street	126 Main St	Site plan review to change vacant store front into a café.	5/20/2021
Paul Musso - Mixed Use Store Front	22 Main Street Ravena	Site plan review to use the front portion of the first floor residence as store front for business.	5/20/2021

Project Name	Project Location	Consideration	Date
Sign - Village of Ravena Fire Department	116 Main Street	Area variance and special use permit for one sided digital sign to replace current sign.	11/18/2021
Local Law Amending Chapter 65 of the Village of Ravena Code	Village of Ravena	Amendment of Local Law Chapter 65 of the Village of Ravena Code that effects all parcels within the Village of Ravena boundaries.	11/18/2021
Local Law to regulate Solar Siting in the Village of Ravena	Village of Ravena	A local Law regulating Solar Siting in the Village of Ravena that effects all parcels within Village of Ravena boundaries.	11/18/2021
Jason Emerson	9 Madison Ave	Use Variance - Remove and replacement of trailer.	8/20/2020
Herboasis	149 Main St.	A site plan review to enable the adaptive re-use of an existing mixed-use structure and some internal floor plan redesign. The proposed first floor retail use will consist of the sale of herbal supplements.	2/25/2020
Auto Body Shop	2166 US RT 9W	A site plan review for a new auto body shop to open where a previous one already existed.	7/18/2019
Brew House / Tap Room	1098 Main Street	Site plan review to enable the conversion of a store front to a brew house.	11/21/2019
Ravena/ R-C-S School District Sign Variance	15 Mountain Rd.	Area variance to install an 18 sq. ft. advertisement sign in front of the Village of Ravena municipal building. The sign will be used by Ravena-Coeymans-Selkirk Central School District to display public events and notices.	10/18/2018
Misuraca Garage Variance	2212 US Rt. 9W	Request for a 5 ft. side yard variance for a two-car detached garage, which does not meet the 10 ft. side yard setback requirement. The variance is needed in order for the planned garage to comply with the fire code.	6/21/2018

Project Name	Project Location	Consideration	Date
Ravena Industrial Zone Restaurant Use	Industrial zones within Ravena	Amendment of zoning ordinance to allow restaurants as a permitted use in the Industrial (I-1) Zone.	12/20/2018
Coeyman's Recycling Center Subdivision	Northeastern corner of the Village of Ravena	Subdivision of +/-66 acres in the Village of Ravena to create a new parcel for the existing +/-59,000 sq. ft. warehouse/storage facility (Building C9) with associated parking and utilities. *ACPB reviewed the site plans for this parcel in April 2018.	8/16/2018
Ravena Industrial Park	Northeastern corner of the Village of Ravena	Coeymans Recycling Center, LLC plans to expand Coeymans Industrial Park to the vacant land north of Willis Avenue and east of I-87 with the construction of five warehouse structures.	4/19/2018

Table 2-2. Building Permit Issuance (2018 to 2023)

Year	Type of Building	Number of Permits Issued
2018	1	2
2019	3-4	3
2020	1	1
2021	1	1
Total		7

Data Source: Capital District Regional Planning Commission (<https://cdrpc.org/data/housing>)

3 CAPABILITIES ASSESSMENT

3.1 Planning Mechanisms and Capabilities

The Village of Ravena identified the following planning mechanisms and capabilities that can support the Village in hazard mitigation efforts. These capabilities can be used to support the mitigation strategy in several ways. For example, administrative capabilities can assist in implementing the mitigation actions as identified in the mitigation strategy. Existing building codes and land use regulations provide a foundation for mitigation planning and provide guidelines for infrastructure repair, new developments, and other actions. Educational programs may be developed further in order to more fully incorporate hazard mitigation. Table 3-1 elaborates on existing building codes, land use and development ordinances/regulations, and many other capabilities which can support hazard mitigation.

Table 3-1. Planning Mechanisms & Capabilities

Planning Mechanism	In Place? (Yes/No)	Notes (Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?)
Administration		
Maintenance Programs	Yes	
Mitigation Planning Committee	No	Through County
Mutual Aid or Shared Services Agreements	Yes	Coeymans; new Baltimore; Albany County (Emergency Action Plan)
Planning Board	Yes	Combined with ZB
Zoning Board	Yes	Combined with PB
Other		
Development Approvals		

		Notes
Planning Mechanism	In Place? (Yes/No)	(Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?)
Building Code	Yes	NYS Building Code 2020
Fire Department ISO Rating	Yes	
Site Plan Review Requirements	Yes	
Other		
Funding Resources		
Authority to Levy Taxes	Yes	
Capital Improvement Project Funds	Yes	Infrastructure
Federal Funding Programs (i.e., USDA, FEMA, others)	Yes	ARPA, USDA
General Obligation Bonds and/or Special Tax Bonds	No	
Impact Fees for New Development	No	
State Funding Programs (i.e., NYSEFC, NYSOCR, NYSDEC, others)	Yes	Sewer Evaluation Plan, Drinking Water Source Protection Plan; Green innovative (EFC); Estuary Grant; OPRHP;
Utility Fees (i.e., water, sewer, stormwater, gas, electric)	Yes	Water and Sewer
Other		
Land Use Regulations		
Density Controls	Yes	
Flood Insurance Rate Maps	Yes	3/16/2015
NFIP Participant / Floodplain Ordinance	Yes	
Hillside Development Regulations	No	NYS Regulations
Open Space Preservation	Yes	Village of Ravena Park Complex
Stormwater Management Regulations	Yes	Under site plan requirements
Streambank Setback Regulations	Yes	Hannacrois Creek to protect water supply
Subdivision Regulations	Yes	Subdivision Ordinance
Zoning Ordinance	Yes	
Other	Yes	Flood Damage Prevention
Natural Resources		

		Notes
Planning Mechanism	In Place? (Yes/No)	(Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?)
Forest/Vegetation Management	No	
Stream Corridor Management	Yes	
Stream Dumping Regulations	Yes	
Urban Forestry and Landscape Management	No	
Watershed Management	No	
Wetland Regulations	No	NYS DEC
Other	Yes	Environmental Quality Review (Chapter 62), Solar law (Local Law No. 5 of 2021)
Plans		
Capital Improvement Plan	No	
Comprehensive Emergency Management Plan	Yes	
Comprehensive Plan	Yes	2020
Continuity of Operations Plan	Yes	
Economic Development Plan	No	
Other		
Programs/Organizations		
Climate Smart Community	No	
Local Emergency Preparedness/Disaster Response Organizations	Yes	FD/PD/EMS Town of Coeymans emergency management
Local Environmental Protection Organizations	No	
National Weather Service StormReady Certification	No	County is Certified
Outreach Programs	Yes	
Partnerships with private entities addressing mitigation or disaster response	Yes	Red Cross
School Programs or Adult Educational Programs	Yes	Village of Ravena Water Department and Fire Department
Other		

		Notes
Planning Mechanism	In Place? (Yes/No)	(Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?)
Staff Positions		
Civil Engineer	Yes	Crawford (storm mitigation) B&L water/sewer
Code Enforcement Officer	Yes	Joseph J Burns and Travis Witbeck
Emergency Manager	Yes	Kevin Phillips
Floodplain Administrator	Yes	Building Inspector/Code Enforcement Officer (Joseph Burns)
Planner/GIS Coordinator	Yes	/ GIS (B&L)
Other		
Technical Abilities		
Grant Writing	Yes	Contracted through engineering firm
Hazard Information Centers	No	
Hazard Warning Systems	Yes	Reverse 911; Code Red; Electronic billboards (village hall; FD; library; school); Facebook
Other:		

3.2 Integration of Planning Efforts

The Village of Ravena understands the importance of considering an integrated approach when developing municipal plans, policies, programs, and regulations. The Village intends to reference the 2024 Albany County HMP as part of the process for future updates to the plans, policies, programs, and regulations listed in Table 3-1, above, and for creating new regulations as applicable. This may include adding hazard mitigation as an agenda item at Village Board meetings where local laws are being developed or updated, including hazard mitigation considerations in any templates used to make new laws, adopting an ordinance that all new local laws need to consider hazard mitigation if applicable, or simply making local officials aware of the need to consider hazard mitigation in any plan updates. Additionally, the Village may use the local laws assessment (included in Section 4 of the main body of the HMP) to reference hazard mitigation related regulations that other jurisdictions in the County have adopted, and consider implementing similar regulations if desired.

All of these actions will help expand and improve upon these existing capabilities so that they reduce risk and better support hazard mitigation.

4 HAZARD IDENTIFICATION AND RISK ASSESSMENT

4.1 Profiled Hazards

In this HMP Update, the County reviewed multiple natural hazards, and determined to profile five natural hazards: flooding, severe storm, drought, extreme temperatures, and landslide. Descriptions of each of these hazards are included in Section 6 of the main body of the HMP.

The Village of Ravna has opted to exclude the following hazard from their annex. Village representatives gave the following reasons for this exclusion:

- Drought: The village has no problem with getting adequate precipitation.
- Landslide: Excluded because the Village does not have a history of landslides,.

Aside from the above exceptions, the Village of Ravna profiled the same hazards as Albany County. The hazard analysis criteria used to evaluate the Village's vulnerability to each natural hazard are summarized in Table 4-1, and the results are presented in Table 4-2. All rankings were completed subjectively, with the guidelines detailed in Table 4-1.

Table 4-1. Hazard Analysis Criteria

Score	Impact (Damage to property, crops, people)	Frequency*	Extent	Level of Preparedness	Total Score	Overall Vulnerability
1	Minor	Rare	One or two problem areas within the jurisdiction	Well Prepared	4 to 5	Low
2	Moderate	Infrequent	A significant portion of the jurisdiction	Moderately Prepared	6 to 8	Moderate
3	Major	Regular	The entire jurisdiction	Not Prepared	9 to 12	High

*Frequency is defined roughly as follows:

- Rare – Every 15 years or less
- Infrequent: Less than once a year but greater than once every 15 years
- Regular: Approximately yearly or multiple times a year

Table 4-2. Hazard Vulnerability by Event

Hazard Event	Impact (Damage to property, crops, people, etc.)	Frequency of Occurrence	Extent of Impacts	Level of Preparedness	Overall Vulnerability	Jurisdiction Rank	Notes (Anticipated Future Changes)
Flooding (Riverine, Coastal*, Urban, Flash, Ice Jam, Dam or Levee Break, Other)	3	3	2	2	10 – High	1	See below
Drought	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Severe Storm (Hail, Ice Storms, Wind, Thunderstorms and Lightning, Winter Storms, Hurricane, Tropical Storms, Tornado, Power Outage)	2	3	3	2	10 – High	2	See below

Hazard Event	Impact (Damage to property, crops, people, etc.)	Frequency of Occurrence	Extent of Impacts	Level of Preparedness	Overall Vulnerability	Jurisdiction Rank	Notes (Anticipated Future Changes)
Extreme Temperatures (Cold Wave, Heat Wave, Air Pollution Effects)	1	2	3	2	8 - Moderate	3	See Below
Landslide	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**Coastal Flooding includes impacts from sea level rise.*

4.2 Hazard Event History

A complete history of natural hazard events within the County – based on NOAA's Severe Storm Database – is included in Section 6 of the main body of the HMP. The following is a subset of events that occurred specifically within the Village. These records informed the development of mitigation actions by demonstrating which hazards have historically had the greatest impact on the Village.

Table 4-3. Hazard Event Records, 2018-2023

Event Type	Date	Magnitude	Estimated Property Damage	Estimated Crop Damage
Thunderstorm/Wind	8/3/2019	50	0	0
Thunderstorm/Wind	8/8/2019	50	0	0
Thunderstorm/Wind	5/16/2022	50	0	0
Thunderstorm/Wind	7/4/2023	45	0	\$2000
Total			\$0	\$2000

Note: The table above lists only the hazard events that were recorded as occurring specifically within the Village. For records of County-wide hazard events, see the Albany County Annex.

4.3 Floodplain Statistics

Key water features in the Village are described in Section 2.2 of this annex. FEMA provides flood insurance rate maps for the municipality and GIS data on the spatial location of floodplains. The 1% annual chance (100-year) flood event area generally corresponds with areas that are at high risk of flooding, and the 0.2% annual chance (500-year) flood event area generally corresponds with areas that are at moderate risk of flooding. Out of the 1.5 square miles in the Village, approximately 2.48% are located within the 1% annual chance flood event area and approximately 2.51% are located within 0.2% annual chance flood event area (inclusive of the 1% flood event area). The estimated number and structure value of parcels in the municipality that intersect mapped floodplains are summarized in Table 4-5. There are 91 parcels in the Village located within the 1% annual chance flood event area, with an estimated total structure value of \$29,302,551. Inclusive of these parcels in the 1% annual chance flood event area, there are 93 parcels in the Village located within the 0.2% annual chance flood event area, with an estimated total structure value of \$35,121,851.

Table 4-4. Summary of Areas in Floodplains*

Total Area (square miles)	Percent of Total Area in 1% Annual Chance Floodplain	Percent of Total Area in 0.2% Annual Chance Floodplain
1.5	2.48%	2.51%

* Calculated areas and percentages are informational estimates only and are not to be used for official purposes. The 0.2% annual chance floodplain in this table includes the area in the 1% annual chance floodplain.

Table 4-5. Estimated Number and Structure Value of Parcels within Mapped Floodplains

Property Class	Number of Parcels in 1% Annual Chance Floodplain	Approx. Structure Value* in 1% Annual Chance Floodplain	Number of Parcels in 0.2% Annual Chance Floodplain**	Approx. Structure Value* in 0.2% Annual Chance Floodplain**
Unclassified	-	-	-	-
Agricultural	48	\$4,810,700	49	\$4,895,700
Residential	18	\$8,100	18	\$8,100
Vacant	17	\$19,199,000	17	\$19,199,000
Commercial	48	\$4,810,700	49	\$4,895,700
Recreation and Entertainment	1	\$120,000	1	\$120,000
Community Services	6	\$3,518,900	6	\$3,518,900
Industrial	-	-	1	\$5,734,300
Public Services	1	\$1,645,851	1	\$1,645,851
Parks and Open Space	-	-	-	-
Total	91	\$29,302,551	93	\$35,121,851

*Structure Value for each parcel was estimated by subtracting Land Assessed Value from Total Assessed Value. If the entire parcel or a subset of the parcel was contained within the floodplain, the structure on that parcel was included regardless of the structure's location on the parcel.

** The 0.2% Annual Chance Floodplain in this table includes the area in the 1% Annual Chance Floodplain.

4.4 National Flood Insurance Program

Long-term mitigation of potential flood impacts can be best achieved through comprehensive floodplain management regulations and enforcement at a local level. The National Flood Insurance Program (NFIP), regulated by FEMA, aims to reduce the impact of flooding on private and public structures by providing affordable insurance for property owners. The program encourages local jurisdictions to adopt and enforce floodplain management regulations in order to mitigate the potential effects of flooding on new and existing infrastructure (<https://www.fema.gov/flood-insurance>).

Communities that participate in the NFIP adopt floodplain ordinances. If an insured structure incurs damage costs that are over 50% of its market value, the owner must comply with the local floodplain regulations when repairing or rebuilding the structure. A structure could be rebuilt at a higher elevation, or it could be acquired and demolished by the municipality or relocated outside of the floodplain. Insured structures that are located within floodplains identified on FEMA's Flood Insurance Rate Maps (FIRMs) may receive payments for structure and content losses if impacted by a flood event.

The NFIP and other flood mitigation actions are important for the protection of public and private property and public safety. Flood mitigation is valuable to communities because it:

1. Creates safer environments by reducing loss of life and decreasing property damage;
2. Allows individuals to minimize post-flood disaster disruptions and to recover quicker (homes built to NFIP standards generally experience less damage from flood events, and when damage does occur, the flood insurance program protects the homeowner's investment); and
3. Lessens the financial impacts on individuals, communities, and other involved parties (<https://www.fema.gov/flood-insurance>).

The Village of Ravena currently participates in the NFIP (community ID 361346A), and its current FIRM(s) became effective on 03/16/15. FIRMs are available via FEMA's Flood Map Service Center (<https://msc.fema.gov/portal/home>). Digital FIRM data is also available for Albany County via FEMA's National Flood Hazard Layer Viewer, which was referenced during the development of this annex. Information from this digital FIRM data was incorporated into this Hazard Mitigation Plan where appropriate (for example, when identifying which critical facilities are located in the floodplain).

The Village's local law governing floodplain development and NFIP compliance is located in Chapter 67. Flood Damage Prevention. The Village will continue to comply with the NFIP by enforcing floodplain management requirements and regulating new development in special flood hazard areas, among other required duties. Staff capabilities to implement the NFIP and local floodplain regulations are listed in Table 3-1 of this annex.

According to NFIP claims data provided by FEMA, there are no repetitive loss properties in the Village of Green Island. Repetitive loss properties have had at least two paid flood losses of more than \$1,000 each in any 10-year period since 1978.

4.5 Considerations for Future Hazards

No concerns about future changes in hazard impacts specific to the Village were identified during the hazard mitigation planning process. The effects of climate change and other factors on future hazard events in Albany County are covered in more detail in Section 6 of the main body of the HMP.

5 ASSETS AND VULNERABILITIES

5.1 Critical Facilities

FEMA defines a critical facility as one that provides services and functions essential to a community, especially during and after a disaster. Critical facilities should remain accessible and functional before, during and after disasters. Additionally, critical facilities include those that requires a special emergency response in the event of hazardous incidents, such as buildings that store hazardous materials. Examples of critical facilities include community lifelines, such as fire departments, EMS services, police stations, water and wastewater services, medical facilities, highway garages, and hazardous materials. They also include facilities such as Town halls, schools, and senior centers. In the hazard mitigation planning process, each jurisdiction ultimately decided which facilities they consider to be critical facilities for their community.

Table 5-1 denotes the name, type, and location of the critical facilities within the Village of Ravena, and any particular vulnerabilities of note. More information about hazard vulnerability, including the vulnerability of community assets to natural hazard events, is included in Section 8 of the main body of the HMP. Additional vulnerabilities by location are assessed in the HAZUS analysis, included in the appendices of the HMP

*Table 5-1. Critical Facilities**

[Table redacted due to sensitive content]

Per 2022 NYS Hazard Mitigation Planning Standards, jurisdictions must identify all of their critical facilities, determine the facilities' exposure to a 1% and 0.2% annual chance flood event, and document if the facilities are protected to a 0.2% annual chance flood event or previous worst case flood event (whichever is greater). For facilities that do not meet this level of protection, the jurisdiction must either include an action to meet or exceed this criterion or explain why it is not feasible to do so.

As indicated in Table 5-1, it is unknown whether several of the Village's critical facilities are protected to a 0.2% annual chance (500-year) flood event or previous worst case flood event (whichever is greater). The Village has included an action in Section 7.2: New Mitigation Actions related to these critical facilities. Section 9 of the main body of the HMP provides additional detail on how the County and local municipalities may assess critical facilities' level of protection to the 1% and 0.2% annual chance flood event. The Village is undergoing culvert improvements along Bruno Road which will protect both the Senior Projects of Ravena and the Ravena Ambulance Services against flood events.

5.2 High Hazard Potential Dams

According to the NYSDEC Division of Water Bureau and Flood Protection and Dam Safety, there are four hazard classifications of dams in New York State. A High Hazard Potential Dam is a dam located in an area where dam failure may cause loss of human

life; serious damage to homes, industrial, or commercial buildings; essential public utilities; main highways or railroads; and will cause extensive economic loss.

The Village of Ravena has no high-hazard potential dams (HHPDs) located within its municipal boundaries.

5.3 Additional Jurisdiction/Public Identified Vulnerabilities

In addition to critical facilities, it is important to take a holistic approach to identifying assets in the jurisdiction and how they may be vulnerable to the hazards identified in the HMP. Examples of other assets considered include:

- People (residents, workers, visiting populations, and socially vulnerable populations like seniors, individuals with disabilities, lower-income individuals, etc.)
- Other structures (community centers, historic places, planned capital improvement)
- Economic assets (major employers, primary economic sectors, key infrastructure like telecommunications networks)
- Natural, historic and cultural resources (areas of conservation, beaches, parks, critical habitats)
- Critical facilities and infrastructure (hospitals, law enforcement, water, power)
- Community activities (major local events such as festivals or economic events like farming or fishing)

Aside from critical facilities listed in Table 5-1, the Village has not identified any specific additional assets aside from critical facilities listed in Table 5-1, but has taken the above example assets into consideration during the development of this annex.

6 SUMMARY OF HAZARD IMPACTS AND VULNERABILITIES

6.1 Flood

The Village of Ravena has ranked their overall vulnerability to flood events as major, as indicated in Table 4-2. According to Village representatives, flood events occur frequently in the jurisdiction and affect a significant portion of the jurisdiction, causing major damage. The Village feels they moderately prepared for flood events.

Information on flood event records (Section 4.2 of this annex), high hazard potential dams (Section 5.2), floodplain statistics (Section 4.3), and participation in the NFIP (Section 4.4) are described above, illustrating the impact of flooding on critical facilities and other structures.

Future vulnerability to flood events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is expected to increase the Village's future vulnerability to flood events. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.2 Severe Storm

The Village of Ravena has ranked their overall vulnerability to severe storm events as major, as indicated in Table 4-2. According to Village representatives, severe storms occur infrequently in the jurisdiction and affect the entire jurisdiction, causing moderate damage. The Village feels they are moderately prepared for severe storm events.

Records of severe storm events are described in Section 4.2 of this annex. The Village is particularly concerned about the impacts of severe storm events on flooding, as well as impacts on low-income residents.

Future vulnerability to severe storm events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is expected to change the types of severe storm events that the Village is vulnerable to, likely making the Village more vulnerable to severe thunderstorm, windstorm, and hail events and less vulnerable to heavy snow, ice storms, winter storms and winter weather. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.3 Extreme Temperatures

The Village of Ravena has ranked their overall vulnerability to extreme temperature events as moderate, as indicated in Table 4-2. According to Village representatives, extreme temperature events occur infrequently in the jurisdiction and affect the entire jurisdiction, causing minor damage. The Village feels they are moderately prepared for extreme temperature events.

Extreme temperature events tend to have greater impacts on vulnerable populations, including older adults (over 65 years), young children (under 5 years), individuals with

health complications, and individuals who cannot afford to sufficiently heat or cool their homes. Approximately 5.2% of the population in the Village is under 5 years old, and 13.9% of the population is over 65 years old. Approximately 9.5% of the residents of the Village have a disability (excluding any institutionalized residents and active-duty military members) some of whom have health problems that make them more vulnerable to extreme heat or cold. Approximately 10.6% of the Village's population is below the poverty level. Many residents within these populations are at a higher risk of being impacted by extreme temperature events.

To help mitigate the effects of extreme temperature events, the Village has heating and cooling stations, including at the Village Library.

Future vulnerability to extreme temperature events is determined by many factors, such as climate change, land use, and population changes, as well as the implementation of mitigation and adaptation strategies. Climate change is expected to increase the Village's future vulnerability to extreme heat events and decrease its vulnerability to extreme cold events. These trends are further described in Section 4.1 of this annex and in Section 6 of the main body of the HMP.

6.4 Jurisdictional Priorities

Taking into account the identified natural hazards, potential impacts, assets, and vulnerabilities identified above, key vulnerabilities and priorities to be addressed in this HMP were identified for the Village.

Top concerns about hazard mitigation in the Village included:

- Flooding, both stormwater and riverine. This includes streams overflowing, insufficiency of culverts along Railroad Ave (consequently, flooding shuts down road temporarily and leads to damage to infrastructure).

The following populations and geographic locations were identified as being particularly vulnerable to hazards:

- Senior residents and those living in the Village's trailerparks
- Certain roadways (e.g. Railroad Ave)

The Village has not identified any changes in priorities since the 2018 HMP Update.

6.5 Additional Impacts

Additional impacts of the hazards are summarized in the problem descriptions in the Village's past and new mitigation actions, as described in the following sections.

7 MITIGATION STRATEGY AND IMPLEMENTATION

7.1 Past, Completed, and Ongoing Initiatives

The Village had proposed two (2) mitigation actions in the 2018 Albany County HMP Update. The status of each action is summarized below, along with the Village's decision about whether to include the action in the 2024 HMP Update. Any revisions to actions proposed in 2018 are indicated below.

Table 7-1. Status of 2018 Mitigation Actions

Name	Description	Hazard(s)		Lead Agency	Status (Completed, In Progress, No Progress, Discontinued)	Carried into 2024 HMP Update? (Yes/No)	Notes
		Mitigated					
Ravena-1 Hannacrois Creek Re- Construction	Install a 6'-0" pipe the entire length of the creek bed. This is not being pursued due to very high cost and non-cooperation with the NYS Thruway and CSX Railroad, where pinch points are existing in the flood plain.	Flood		Village of Ravena Dept. of Public Works Supervisor	Discontinued. Stream daylighting was pursued and completed for 2 phases.	Yes	
Ravena-2	Acquisition of repetitive loss (RL) and severe repetitive loss (SRL) properties within municipal limits	Flood and Severe Storm		Town Board, Town Consultant	In progress. 2 properties acquired.	Yes. More properties being pursued.	

7.2 New Mitigation Actions

In addition to the actions carried over from the 2018 HMP, the Village of Ravena identified new mitigation actions for inclusion in the 2024 HMP Update in conjunction with the project team. First, a list of actions was brainstormed based on the capabilities, hazard identification, impacts, and vulnerabilities described above. This included consideration of the

ways that the Village could expand and improve the identified capabilities to achieve mitigation, as described in Section 3 of this annex. Then, a more comprehensive range of actions was evaluated as described in Section 9 of the main body of the HMP. Finally, actions that tied in most closely with the vulnerabilities identified by the Village were selected for inclusion in the HMP. These actions are included in the table below. (Note that in the table, CF = Critical Facility, EHP = Environmental and Historic Preservation.) The actions also help address climate change in the Village, since many of the hazards profiled in this HMP may be worsened by climate change. The effects of climate change on these hazards are described in Section 4.1 and Section 6 of this annex, as well as in Section 6 of the main body of the HMP.

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Table 7-2. New Mitigation Actions*

Project #	Project Name	Goal/Objective being Met	Hazard to be Mitigated	Description of the Problem	Description of the Solution	Related to CF?	EHP Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority
V Ravena F1	Flood Prone Land Acquisition	G1, G6	Flood	During early development of the Village, tributaries of Hannacroix Creek were filled with dredged material and then built upon, which has created the current conditions for flooding in the wake of moderate to heavy rain events.	Continue efforts to acquire properties in flood prone areas to reduce the burden of repetitive loss properties on Village residents. The Village's current focus is to acquire a 2 family home on Bruno Blvd that is located within the floodplain.	No	No	3-5 years	Department of Public Works	High	This action would reduce the vulnerability of Village residents to repetitive loss flooding events.	BRIC, FMA, US HMGP	Medium
V Ravena F2	East Branch of Hannacroix Storm Water Study	G2, G6	Flood	The Village has experienced flooding along Main Street during heavy rain events. The Village has been completing stream daylighting efforts along Main Street (phase 1 completed) and now wants to complete a study to determine the stormwater impacts downstream of the improvements (to the east of the rail road tracks).	Complete a storm water study downstream of the East Branch of Hannacroix.	No	No	1-3 years	Department of Public Works	Medium	This action would provide insights as to the possible downstream flooding impact from the Village stream daylighting efforts, and let the Village know if further action is required to reduce the flood risk.	BRIC, US HMGP	High
V Ravena F3	Culvert Upgrades along Rail Road Tracks	G2, G6	Flood	Culverts along the CSX Rail Lines are undersized and in need of repair. When flooding occurs, these culverts can overflow.	Install larger culverts to adequately deal with the capacity needs	Yes	No	1-3 years	Department of Public Works	High	This action would address flooding vulnerabilities along the CSX Rail Line.	US CDBG-MIT, US HMGP, US Flood Mitigation Assistance, NYS HM RLF, US BRIC, DOT BIL Grants	Medium
V Ravena F4	Stormwater Pipe Replacements along Railroad Ave	G2, G6	Flood	The stormwater pipe along Railroad Ave is aging and in need of repair. This increases the probability of flooding.	Install new larger capacity stormwater pipe along Railroad Ave	No	No	1-3 years	Department of Public Works	High	This action would reduce flooding vulnerabilities along Railroad Ave.	US CDBG-MIT, US HMGP, US Flood Mitigation Assistance, NYS HM RLF, US BRIC, DOT BIL Grants	Medium

Project #	Project Name	Goal/Objective being Met	Hazard to be Mitigated	Description of the Problem	Description of the Solution	Related to CF?	EHP Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority
V Ravena S1	Water Treatment Plant Powerline Undergrounding	G2, G5, G6	Severe Storm	The water treatment plant is a critical facility that is at risk of losing power during severe storm events	Work with Central Hudson and Gas to bury the electrical lines that supply the water treatment plant.	Yes	No	3-5 years	Department of Public Works	High	This action would reduce the vulnerability of critical water infrastructure to severe storm events.	BRIC, US HMGP	Low
V Ravena ET1	Generator Upgrades	G1, G5, G6	Extreme Temperatures	Three Senior Center, Firehouse and Library are all designated shelters and are in need of generators to protect them in the event of a power outage.	Purchase new generators to be installed at the Senior Center, Firehouse and Library.	Yes	No	3-5 years	Department of Public Works	Medium	This action would enhance the resilience of the Village's designated shelters against extreme heat events by ensuring they can operate in the event of power failures.	US CDBG-MIT, US HMGP, NYS HM RLF, FEMA EOC Grant Program	Medium
V Ravena F5	Vulnerability Assessment and Flood Protection for Critical Facilities	G1, G2, G5, G6	Flood	Some of the Village's critical facilities may not be protected against the 0.2% chance flood event or previous worst case flood event. This leaves these facilities vulnerable to becoming inoperable during flood events.	Conduct vulnerability assessments for the critical facilities identified in the Village annex to this HMP update, to determine their level of protection against a 0.2% chance flood event (or previous worst case flood, if greater than the 0.2% chance flood), where unknown. If/when funding is available, protect any unprotected facilities to an 0.2% chance flood event (or previous worst case flood event, if applicable), through engineering design, building retrofits, or other measures, as necessary and feasible. These facilities are identified in Table 5-1 of the jurisdictional annex.	Yes	Potentially	3-5 years	Department of Public Works	High	This action would reduce the vulnerability of critical facilities to flood events.	DASNY State and Municipal Facilities Program, US HMGP, US BRIC, US Flood Mitigation Assistance, US HUD CDBG-MIT, NYS HM RLF, NYS CSC, FEMA EOC Grant Program	Medium

Project #	Project Name	Goal/Objective being Met	Hazard to be Mitigated	Description of the Problem	Description of the Solution	Related to CF?	EHP Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority
V Ravena MH1	Increase Resilience at Municipal Facilities and Key Assets	G1, G2, G5, G6	Multiple Hazards (Flood, Severe Storm, Extreme Temperatures)	According to Albany County's Climate Resiliency Plan, several municipal facilities throughout the County are vulnerable to natural hazards such as flooding, severe storms, and extreme temperatures, especially older buildings and buildings that serve vulnerable populations. Some Village of Ravena facilities may fall into this category.	Partner with Albany County to assess additional opportunities to increase resilience at critical facilities and other key assets. This may include, but is not limited to, action items detailed in the Albany County Climate Resiliency Plan page 180-197, such as: 1) Assess municipal buildings for resilient retrofit opportunities, 2) Assess municipal properties for resilient site improvements, and 3) Assess climate risks and identify proactive solutions for climate resilience at a local level. Particular facilities of interest may include, but are not limited to, the ones listed in the Climate Resiliency Plan (Chapter 3 and pages 180-197), as well as the ones listed in the Critical Facilities section of the jurisdictional annex.	Yes	Potentially	3-5 years	Department of Public Works	High	This action would reduce the vulnerability of the community's critical facilities to natural hazards including storms, floods, and extreme temperatures.	DASNY State and Municipal Facilities Program, US HMGP, US BRIC, US Flood Mitigation Assistance, US HUD CDBG-MIT, NYS HM RLF, NYS CSC, FEMA EOC Grant Program	Medium

*Note: CF = Critical Facility, EHP = Environmental and Historic Preservation.

7.3 Mitigation Action Prioritization

Each of the Village's proposed mitigation actions were evaluated and prioritized according to the criteria listed in Section 9 of the main body of the HMP. This includes a cost-benefit review of the proposed actions. The results are included in Table 7-3.

Table 7-3. New Mitigation Action Prioritization

Mitigation Action ID	Mitigation Action Name	Ability to Increase Resilience	Economic Feasibility	Low Environmental Impact	Ability to Implement	Total Score	Priority
V Ravena F1	Flood Prone Land Acquisition	2	1	3	2	8	Medium
V Ravena F2	East Branch of Hannacrois Storm Water Study	3	3	3	3	12	High
V Ravena F3	Culvert Upgrades along Rail Road Tracks	3	1	2	2	8	Medium
V Ravena F4	Stormwater Pipe Replacements along Railroad Ave	3	1	2	2	8	Medium
V Ravena S1	Water Treatment Plant Powerline Undergrounding	2	1	2	1	6	Low
V Ravena ET1	Generator Upgrades	2	2	2	2	8	Medium
V Ravena F5	Vulnerability Assessment and Flood Protection for Critical Facilities	2	1	2	2	7	Medium
V Ravena MH1	Increase Resilience at Municipal Facilities and Key Assets	2	1	2	2	7	Medium

Note: Feasibility/effectiveness is rated as follows: 1 = Poor, 2 = Moderate, 3 = Good. Priority is determined as follows based on total score: 4-6 = Low, 7-9 = Medium, 10-12 = High.

7.4 Mitigation Action Implementation and Administration

The Village's new mitigation actions will be implemented and administered via the lead agencies listed in Table 7-2 of this annex, using the timeframes, prioritization, and funding sources in Sections 7.2 and 7.3 as a guide. Further details about implementation of mitigation actions for all jurisdictions in Albany County, as well as a description of funding sources, are described in Sections 9 and 10 of the main body of the HMP.

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8 ADDITIONAL PUBLIC INVOLVEMENT

Public input was solicited to guide the development of the HMP through two public information meetings and a community survey. A summary of the findings of these outreach activities can be found in Section 3 of the main body of the HMP. The Village of Ravena may continue to seek public participation in hazard mitigation planning after HMP approval by including discussion of the HMP as an agenda item at public Village Board meetings and by offering opportunities for members of the public to participate in the implementation of relevant mitigation actions.

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