

# Town/Village of Green Island

This section presents the jurisdictional annex for the Town/Village of Green Island (referred hereafter as the Village of Green Island) 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 natural hazard events. This jurisdictional annex focuses on actions that can be implemented prior to a natural hazard event to reduce adverse impacts to people and property; it is not intended to serve as guidance for what to do when a natural hazard event occurs or how to recover following a natural hazard event. This jurisdictional annex provides an overview of the community and its critical facilities, evaluates the community's vulnerability to various natural hazards, assesses the community's existing capability to mitigate natural hazards, and identifies actions that could be implemented to mitigate natural hazard risks and, ultimately, reduce damages to people and property resulting from natural hazard events.

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# 1 CONTACT INFORMATION

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

- Primary: Ellen McNulty-Ryan, Mayor
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## 2 COMMUNITY SNAPSHOT

### 2.1 Demographics

The 2020 Census estimated that 2,957 people live in the Village of Green Island. Village of Green Island's population has increased by 12.9% since the 2010 Census (2,618). The median age in the Village of Green Island is 37.1 years, and 16.0% of the population is over the age of 65. The median household income in the Village of Green Island is \$57,750.

### 2.2 Location & Land Characteristics

The Village of Green Island is located north the City of Watervliet, south of the City of Cohoes and east of the Town of Colonie. The Village of Green Island covers approximately 0.7 square miles. The properties within the Village of Green Island have a total assessed value of approximately \$235,383,456, as of 2023, which is distributed across a variety of property classes.

Major transportation corridors in the Village of Green Island include I-787 and Route 7. The key water feature within the Village of Green Island is the Hudson River.

### 2.3 Governing Body

A Mayor and six Village Trustees govern the Village of Green Island. A Supervisor and four council members govern the Town of Green Island.

### 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 County received from the Village are summarized in Table 2-1 below, along with additional proposal data provided by the Village. Some of the proposals for the Village may be 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 new privately-owned residential construction in the Village between 2018 to 2022 are summarized in Table 2-2 below, based on data from the Capital District Regional Planning Commission (CDRPC). 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
Verizon Wireless - Green Island - Unmanned Wireless Communication Facility	4 Center Court	Site plan review and special use permit to install unmanned wireless communications facility on the existing property located at the intersection of Center Court and James Street. Access to the property will be provided from Center Court utilizing an existing private access driveway. An area variance is required to meet the front yard setback requirements.	5/19/2022
100 Cohoes Avenue	100 Cohoes Avenue	Site plan review to construct an 80,000 SF warehouse facility.	5/20/2021
Starbuck Island	10-35 Starbuck Island Drive	Construction of 268 luxury apartments, and 24,000 sq.ft. of mixed commercial	2018
Cannon Street Residential Development	115-137 Cannon Street	Construction of 12 single family dwelling units	2019-2021
25 Tibbits Avenue, LLC	147 Cannon Street	Redevelop 11.71 acres by constructing a 200,000-spec building for prospective tenant (former junkyard)	2023

Table 2-2. Building Permit Issuance (2018 to 2022)

Year	Building Type	Units
2019	1	4
2020	1	9
<b>Total:</b>		<b>13</b>

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

## 3 CAPABILITIES ASSESSMENT

### 3.1 Planning Mechanisms and Capabilities

The Village of Green Island 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 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?)
<b>Administration</b>		
Maintenance Programs	Yes	GIPA and Public Works
Mitigation Planning Committee	No	
Mutual Aid or Shared Services Agreements	Yes	With Albany County, Watervliet, Cohoes, and Troy
Planning Board	Yes	
Zoning Board	Yes	
<b>Other</b>		
<b>Development Approvals</b>		
Building Code	Yes	NYS 2020
Fire Department ISO Rating	Yes	5
Site Plan Review Requirements	Yes	Green infrastructure is implemented within site plan review.
<b>Other</b>		
<b>Funding Resources</b>		
Authority to Levy Taxes	Yes	
Capital Improvement Project Funds	Yes	
Federal Funding Programs (i.e., USDA, FEMA, others)	Yes	DOT

<b>Planning Mechanism</b>	<b>In Place? (Yes/No)</b>	<b>Notes (Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?)</b>
<b>General Obligation Bonds and/or Special Tax Bonds</b>	Yes	
<b>Impact Fees for New Development</b>	No	
<b>State Funding Programs (i.e., NYSEFC, NYSOGR, NYSDEC, others)</b>	Yes	Black Bridge trail project and Hudson River Valley Greenway
<b>Utility Fees (i.e., water, sewer, stormwater, gas, electric)</b>	Yes	Utility fees based on usage (water, sewer, electric via Green Island Power Authority)
<b>Other</b>	-	NYS infrastructure funding
<b>Land Use Regulations</b>		
<b>Density Controls</b>	Yes	
<b>Flood Insurance Rate Maps</b>	Yes	
<b>NFIP Participant / Floodplain Ordinance</b>	Yes	See "Floodplain Administrator" row below (under "Staff Positions")
<b>Hillside Development Regulations</b>	No	
<b>Open Space Preservation</b>	Yes	Recreation and Open Space Plan (2013)
<b>Stormwater Management Regulations</b>	Yes	Chapter 141: Stormwater Management, Signatory on Albany County Intermunicipal Agreement for Storm Water Management
<b>Streambank Setback Regulations</b>	No	
<b>Subdivision Regulations</b>	No	
<b>Zoning Ordinance</b>	Yes	
<b>Other</b>	Yes	Chapter 87: Flood Damage Prevention
<b>Natural Resources</b>		
<b>Forest/Vegetation Management</b>	No	
<b>Stream Corridor Management</b>	No	
<b>Stream Dumping Regulations</b>	No	
<b>Urban Forestry and Landscape Management</b>	No	
<b>Watershed Management</b>	No	
<b>Wetland Regulations</b>	Yes	Chapter 90: Freshwater Wetlands

<b>Planning Mechanism</b>	<b>In Place? (Yes/No)</b>	<b>Notes (Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?)</b>
<b>Other</b>	Yes	Energy systems law (Local Law No. 1 of 2022). green infrastructure implemented on Albany Avenue.
<b>Plans</b>		
<b>Capital Improvement Plan</b>	Yes	
<b>Comprehensive Emergency Management Plan</b>	Yes	
<b>Comprehensive Plan</b>	No	
<b>Continuity of Operations Plan</b>	No	
<b>Economic Development Plan</b>	Yes	Village of Green Island Community Development Plan (2013)
<b>Other</b>		
<b>Programs/Organizations</b>		
<b>Climate Smart Community</b>	Yes	Registered
<b>Local Emergency Preparedness/Disaster Response Organizations</b>	Yes	Village-based volunteer groups and county and regional advocacy groups
<b>Local Environmental Protection Organizations</b>	No	Albany County has organizations
<b>National Weather Service Storm Ready Certification</b>	No	Albany County is certified
<b>Outreach Programs</b>	Yes	Village newsletter to electric customers once/month, social media, first alert system (Everbridge), website
<b>Partnerships with private entities addressing mitigation or disaster response</b>	Yes	Partnerships with local businesses, American Legion (Cohoes Ave) – designated evacuation site
<b>School Programs or Adult Educational Programs</b>	Yes	Fire prevention (annually) and Government Day (currently on pause)
<b>Other</b>	Yes	Stormwater education through a variety of methods. Part of Albany County Stormwater Coalition – hands-on education during summer, information for notices in newsletter
<b>Staff Positions</b>		

	<b>Notes</b>	
	<b>(Does the plan address hazards? Can the capability be used to implement mitigation actions? When was it last updated?)</b>	
<b>Planning Mechanism</b>	<b>In Place? (Yes/No)</b>	
<b>Civil Engineer</b>	Yes	Part-time staff engineer, Contract with CHA
<b>Code Enforcement Officer</b>	Yes	
<b>Emergency Manager</b>	Yes	
<b>Floodplain Administrator</b>	Yes	Building Inspector (Maggie Alix)
<b>Planner/GIS Coordinator</b>	Yes	PT GIS Contractor (with Albany County Stormwater Coalition); Contract Planner
<b>Other</b>	Yes	Emergency Management Team in place (also addresses hazard preparedness – e.g. conversations before a storm to prepare)
<b>Technical Abilities</b>		
<b>Grant Writing</b>	Yes	In-house and contract out
<b>Hazard Information Centers</b>	Yes	90% - 95% of staff have been trained in FEMA ICS (Incident Command System).
<b>Hazard Warning Systems</b>	Yes	Emergency Alert System, also used - Municipal website and social media
<b>Other</b>	Yes	ESRI mapping for infrastructure (Albany County runs this). FEMA performed Flood Risk hydro. study of Upper Mohawk River

The Village's HMP update will be incorporated into and referenced by future updates of the plans, policies, ordinances, programs, studies, and reports listed in Table 3-1. In particular, the Village should review Table 3-1 when completing updates to the Comprehensive Plan and amendments to the Zoning Code. As part of this review, the Village may strategize opportunities for building the hazard mitigation mechanisms and capabilities currently marked "No" in the table (where feasible) by designating lead agencies in charge of closing such gaps, connecting with partners and technical support resources, establishing a timeline and next steps, estimating costs, and applying for grant funding when necessary. In an update to the Comprehensive Plan, this process may result in the development and inclusion of detailed proposed action items and implementation frameworks that address gaps in hazard mitigation mechanisms and capabilities. In an amendment to the Zoning Code, this process may result in the modification of existing laws or the drafting and adoption of new laws to address gaps in hazard mitigation mechanisms and capabilities.

Additional strategies to expand and improve hazard mitigation capabilities are detailed in Section 10 of the main body of the HMP.



## 3.2 Integration of Planning Efforts

The Village of Green Island 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 of Green Island 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.

Additionally, the Village would like to expand and improve the capabilities listed in Table 3-1 in the following ways:

- More access to hazard mitigation funding
- More awareness of funding opportunities
- Additional equipment for shelters/evacuation sites (e.g. generators)
- Acquire a generator at Green Island Senior Housing. This building has elevators, so presents a problem when a building loses power, as has happened recently. There are 13 apartments in total in the building.
- Continue periodic review of local ordinances related to land use regulations
- More coordination with the local school (potential evacuation/gathering sites). The school would need a generator, however. Even though the school is right in the floodplain, the school has flooded just in lower basement level.
- Additional training for new staff for ICS

All 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 storms, 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 Green Island has opted to exclude the following hazards from their annex. Village representatives gave the following reasons for this exclusion:

- Drought – Excluded because the Village has not had issues with droughts in recent memory and is not prone to droughts.
- Landslide – Excluded because the Village has not had issues with landslides in recent memory and is not prone to landslides. Additionally, the Village is flat.

Aside from the exceptions listed above, the Village of Green Island 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)	1	1	1	1	4 - Low	3	
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	2	3	1	8 - Moderate	1	Concern about increased frequency with climate change

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	1	7 - Moderate	2	Concern about increased frequency with climate change
Landslide	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Coastal Flooding includes impacts from sea level rise.

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## 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
Flood	1/25/2019	-	\$350,000	0
Flood	8/21/2019	-	0	0
Flood	4/7/2022	-	0	0
Flood	7/10/2023	-	\$5,000	0
<b>Total</b>			<b>\$355,000</b>	<b>0</b>

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. Units for magnitude are expressed as the following: Hail: inches, High Wind: knots, Thunderstorm Wind: knots.

## 4.3 Floodplain Statistics

Key waterways in the Village are described in Section 2.2. 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 0.7 square miles in the Village, approximately 55.42% are located within the 1% annual chance flood event area and approximately 70.77% 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 562 parcels in the Village located within the 1% annual chance flood event area, with an estimated total structure value of \$146,898,095. Inclusive of these parcels in the 1% annual chance flood event area, there are 770 parcels in the Village located within the 0.2% annual chance flood event area, with an estimated total structure value of \$169,449,844 .

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
0.7	55.42%	70.77%

\* 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 (2023)

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**
<b>Unclassified</b>	0	\$0	0	\$0
<b>Agricultural</b>	0	\$0	0	\$0
<b>Residential</b>	368	\$31,619,700	527	\$45,741,660
<b>Vacant</b>	78	\$68,500	94	\$102,700
<b>Commercial</b>	86	\$99,161,556	103	\$101,939,045
<b>Recreation and Entertainment</b>	3	\$496,200	9	\$1,367,800
<b>Community Services</b>	9	\$5,861,900	12	\$6,361,900
<b>Industrial</b>	4	\$7,910,500	10	\$12,129,000
<b>Public Services</b>	8	\$971,639	9	\$999,639
<b>Parks and Open Space</b>	6	\$808,100	6	\$808,100
<b>Total</b>	<b>562</b>	<b>\$146,898,095</b>	<b>770</b>	<b>\$169,449,844</b>

\*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 Green Island currently participates in the NFIP (community ID 360009A), and its current FIRM(s) became effective on 03/16/2015. 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 87: 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

The Village also considered future changes in hazards due to climate change, population changes, land use, and other factors. They identified the following concerns: concern about severe storm and extreme temperatures becoming increasingly prevalent due to climate change. These concerns were taken into consideration when developing the mitigation strategy. 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.

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## 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 require 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 Green Island, and any 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 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. As noted in Table 5-1, protection of some of the Village's critical facilities is unnecessary and/or infeasible.

### 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 Green Island has no high-hazard potential dams (HHPDs) located within the 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 of Green Island has identified the following additional assets for consideration in hazard mitigation planning, and included the following notes:

Additional Assets:

[Information redacted due to sensitive content]

## 6 SUMMARY OF HAZARD IMPACTS AND VULNERABILITIES

### 6.1 Flood

The Village of Green Island has ranked their overall vulnerability to flood events as low, as indicated in Table 4-2. According to Village representatives, flood events occur rarely in the jurisdiction and affect one or two problem areas within the jurisdiction, causing minor damage. The Village feels they are well 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. While most of Green Island is located in a flood zone, and the Village of Green Island is at sea level (the first lock on Hudson River) the Village does not experience much flooding. Hurricanes Irene and Sandy did lead to isolated flooding in the Village.

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 Green Island has ranked their overall vulnerability to severe storm events as moderate, 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 not prepared for severe storm events.

Records of severe storm events are described in Section 4.2 of this annex. Impacts to the Village from severe storm events include fallen trees from severe winds, which can damage overhead utility lines, resulting in power outages. These events are likely to result in damage to private and public infrastructure and property. In addition, during severe winter storm events, roadway safety is a primary concern and impacts the safety of residents and operation of critical facilities. Damage to the Village's critical infrastructure or primary transportation routes would be particularly impactful to 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. The Village is particularly concerned about the increasing frequency of some storm events due to climate change.

## 6.3 Extreme Temperatures

The Village of Green Island 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 not 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 8.4% of the population in the Village is under 5 years old, and 15.0% of the population is over 65 years old. Approximately 17.6% 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 26.0% 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. In particular, the Village is concerned about seniors (including the two senior housing facilities in the Village) and families with young children.

To help mitigate the effects of extreme temperature events, the Village has heating and cooling stations, including at the community center, which has a generator. The heating and cooling centers can open in power outages too. Additionally, the Village has a sprinkler pad at the park.

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

Considering 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:

- Flood, severe storm, and extreme temperatures
- Extreme heat and cold are a concern for vulnerable populations, though the Village does have cooling and heating centers, and a sprinkler pad at the park.

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

- Seniors (most vulnerable), families with young kids, 2 senior housing facilities

The plan was revised to reflect the following changes in community priorities since the 2018 HMP Update:

- The frequency of storms is becoming more of a concern. Has not had any issues with flooding in the last few years. More concern about temperatures

Additional concerns that the Village would like addressed in the plan include:

- The Village has already completed stormwater/sewer separation, though there are additional areas of combined pipes.

## 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.

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# 7 MITIGATION STRATEGY AND IMPLEMENTATION

## 7.1 Past, Completed, and Ongoing Initiatives

The Village proposed 5 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.

Table 7-1. Status of 2018 Mitigation Actions

Name	Description	Hazard(s) Mitigated	Lead Agency	Status (Completed, In Progress, No Progress, Discontinued)	Carried into 2024 HMP Update? (Yes/No)	Notes
One Way Culvert-Salt Kill at Hudson River	<b>Partner with NYS DOT, NYS DEC, and/or other agencies to explore options to prevent backflow of Hudson River water into Salt Kill during times of high water</b>	Flooding	<b>NYS DOT, NYS DEC; Green Island</b>	No progress	Yes ( <b>as revised</b> )	Revised. Owner is State of NY. Address: Mohawk Basin Lands.
Erosion control on Center Island	Prevent erosion of north end of island in proximity of municipal water; raise well heads out of flood zone; cost estimates not completed yet	Flooding	Federal or State Government; Green Island Stormwater Coordinator	No progress	Yes	The Village would like to seek obtain funding/guidance for this project.
Extend height and repair of Heatly School retaining wall	Repairing retaining wall behind school, which borders Hudson River.	Flooding	Heatly School	In progress	Yes	School has gone out to bid on this project, but contractor not yet retained

Name	Description	Hazard(s) Mitigated	Lead Agency	Status (Completed, In Progress, No Progress, Discontinued)	Carried into 2024 HMP Update? (Yes/No)	Notes
<b>Retaining Wall Extension and Repair</b>	Extend height and repair of all privately owned retaining walls between Heatly School and Green Island Bridge, <b>as legally feasible and contingent on funding.</b>	Flooding	Village Office	No progress	Yes ( <b>as revised</b> )	Revised. These are privately-owned lands, and funding is needed. The Village Office could disseminate information.
Hudson River and Salt Kill dredging for increased flood control	Not specified	Not specified	Not specified	No progress	No	Salt Kill is the stream bordering 787. State property.

## 7.2 New Mitigation Actions

In addition to the actions carried over from the 2018 HMP, the Village of Green Island 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 to 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 were 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 Village proposed 7 new mitigation actions to be included in the 2024 HMP update. These actions are included in Table 7-2 below and described in more detail in the Mitigation Action – Review spreadsheet (Appendix I). These 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
<b>V Green Island MH1</b>	Generator Acquisition for Heatly School, Green Island Senior Housing, and Green Island Water Department	G1, G5, G6	Severe Storm, Extreme Temperatures	The Heatly School would be a good sheltering facility and heating/cooling center in the event of severe storms and extreme temperatures. Green Island Senior Housing houses older adults, but has 3 floors and has an elevator, presenting mobility problems and HVAC problems when the building loses power (during a storm or other event). Additionally, the Green Island Water Department provides critical drinking water. None of these facilities have generators.	Acquire generators for the Heatly School, Green Island Senior Housing (117 George St), and the Green Island Water Department (water treatment plant), through partnerships with these entities.	Yes	Potentially	1-3 years	Building Department	Medium	This action would ensure that buildings are adequately equipped to provide respite for residents during severe storms and extreme temperature events, thereby reducing residents' vulnerability to these events.	US CDBG-MIT, US HMGP, NYS HM RLF	High
<b>V Green Island MH2</b>	Generator Upgrades and Evaluation for Additional Facilities	G1, G5, G6	Severe Storm, Extreme Temperatures	Extreme heat and cold are a concern for vulnerable populations in the Village, and there is a risk of power outages during severe storms as well. The Village has heating and cooling stations with generators, but some generators need upgrades in order to ensure sufficient functioning to serve the populations in need, and additional facilities may need generators.	Assess whether current generators need upgrades and replace them if they are. Additionally, evaluate if there are additional facilities that may require generators for sufficient sheltering or heating/cooling capacity, and acquire them if needed.	Yes	Potentially	1-3 years	Building Department	Medium	This action would ensure that buildings are adequately equipped to provide respite for residents during severe storms and extreme temperature events, thereby reducing residents' vulnerability to these events.	US CDBG-MIT, US HMGP, NYS HM RLF	High

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
<b>V Green Island F1</b>	Flood Mitigation Public Education	G1, G6	Flood	When flooding occurs in the Village, clogged catch basins and debris can make floods worse. The public is not always educated on how to help.	Educate the public about flood mitigation measures, such as cleaning debris and checking catch basins. The Village newsletter is one avenue for public education.	No	No	1 year	Public Works, Planning Board	Low	This action would reduce the risk of flooding in the Village and empower residents to act.	US BRIC, EPA EJSG	High
<b>V Green Island MH3</b>	Incident Command System Training	G1, G5	Flood, Severe Storm, Extreme Temperatures	Flooding, severe storms, and extreme temperatures all affect the Village, and it is important for Village staff to know how to keep residents safe and prevent hazards when possible. Incident Command System training is one tool for this, but there are new staff members in the Village who have not undergone Incident Command System training.	Conduct Incident Command System (ICS) training for new staff. The training includes ways to identify hazard, how to react to it, and how to prevent hazard from happening again, among other topics.	No	No	1 year	Fire Department	Low	This action would help keep residents safe and reduce property damage by ensuring that Village staff know what to do if hazards do occur.	FEMA EMPG	High
<b>V Green Island MH4</b>	Stormwater and Sewer Separation	G1, G3, G5, G6	Severe Storm, Flooding	While the Village has already conducted separation of some stormwater and sewer pipes, there are still some areas with combined pipes. This can cause water contamination issues during flooding, which is especially likely during certain severe storm events.	Explore opportunities to separate additional combined stormwater and sewer pipes, as feasible and as funding is available.	Yes	Potentially	3-5 years	Public Works	High	This action would reduce water contamination during flooding events.	US CDBG-MIT, US HMGP, US Flood Mitigation Assistance, NYS HM RLF, US BRIC, DOT BIL Grants, NYS EFC WIIA, NYS EFC EPG, NYS CWSRF	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 Green Island F2	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 Green Island MH5	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 Green Island 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
<b>V Green Island MH1</b>	Generator Acquisition for Heatly School, Green Island Senior Housing, and Green Island Water Department	3	2	2	3	10	High
<b>V Green Island MH2</b>	Generator Upgrades and Evaluation for Additional Facilities	3	2	2	3	10	High
<b>V Green Island F1</b>	Flood Mitigation Public Education	2	3	3	3	11	High
<b>V Green Island MH3</b>	Incident Command System Training	2	3	3	3	11	High
<b>V Green Island MH4</b>	Stormwater and Sewer Separation	3	1	3	2	9	Medium
<b>V Green Island F2</b>	Vulnerability Assessment and Flood Protection for Critical Facilities	2	1	2	2	7	Medium
<b>V Green Island MH5</b>	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 Green Island 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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