

9.2 Village of Brewster

This section presents the jurisdictional annex for the Village of Brewster.

9.2.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Peter Hansen, Village Clerk and Treasurer	Dan Crawford
50 Main Street, Brewster, NY	50 Main Street, Brewster, NY 10509
845-279-3760	845-279-2456
phansen@brewstervillage-ny.gov	dcrawford@brewstervillage-ny.gov

9.2.2 Municipal Profile

This section provides a summary of the community.

Population

According to the 2010 U.S. Census, the population of the Village of Brewster was 2,390.

Location

The Village of Brewster is located on the eastern edge of Putnam County, just above Westchester County line and situated within a one-half square mile area. The Village is known as the "Hub of the Hudson Valley". It is home to Metro North commuter station, various faith based institutions, commercial establishments, restaurants, a museum, and library.

The Village has a total land area of 0.5 square miles, all of which is land.

Brief History

The Village of Brewster, incorporated in 1894, physically lies within the Town of Southeast. Walter Brewster initially founded the Village in the 1840s. In 1848, Brewster and his brother James purchased a 134-acre farm that comprised much of what is now the Village of Brewster, motivated by the prospect of nearby mines, an abundant water supply, and the certainty that the Harlem Line Railroad had plans to pass through the already incorporated Town of Southeast. At the time the Brewster family purchased the farm, there were only a few houses and a Methodist Church already in the area. A one-room schoolhouse was built soon thereafter. In 1849, Walter Brewster himself laid out Main Street Brewster.

The railroad furthermore helped to foster two local industries, iron mining and dairy. Although neither industry remains in function today, at the height of its operation in 1879, the largest and most prosperous mine in Southeast, two miles north of the Village (Tilly Foster Mine). By the 1870s, the Village was a thriving community and by the later part of the 19th century, the Croton Reservoir System was constructed.

Governing Body Format

The governance structure of the Village board includes a mayor, deputy mayor, and three board members. The group convenes to vote and act on Village business.



Growth/Development Trends

The following table summarizes major development that occurred in the municipality over the past five years, as well as known or anticipated future development in the next five (5) years. Refer to the map in section 9.2.8 of this annex which illustrates the hazard areas along with the location of potential new development.

Table 9.2-1. Growth and Development

	Type (Residential				
	or	Number of		Known Hazard	Description /
Property Name	Commercial)	Structures	Parcel ID(s)	Zone*	Status

None identified at this time. Any known or anticipated development would be redevelopment, primarily along Route 6. The low lying sections of this area are within floodplains, however redevelopment would be done according to prevailing building code and the associated floodplain regulations.

9.2.3 Natural Hazard Event History Specific to the Municipality

Putnam County has a history of natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. The table below presents a summary of natural events that have occurred to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

Table 9.2-2. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
August 1990	Flooding	N/A	N/A	Putnam and Westchester Counties had \$5 M in property damage
July 9, 1997	Thunderstorm / Wind	N/A	N/A	\$30K in property damage in Lake Carmel
September 16- 18, 1999	Hurricane Floyd Major Disaster Declarations	DR-1296	Yes	\$1.9 M in property damage Countywide
November 2001 – January 2002	Drought	N/A	N/A	NYC's combined storage in water system reservoir systems was at a low 41% capacity
April - October 2002	Drought	N/A	N/A	Groundwater and water storage facilities were below normal. NYC reservoir system reached a low of 64.5%.
July 9, 2002	Lightning	N/A	N/A	Lightning strike caused several fires in Mahopac Falls; approximately \$500 K in property damage.
August 11, 2008	Lightning	N/A	N/A	Lightning struck and destroyed a barn in Milltown; approximately \$75 K in property damage.
September 30, 2010	Strong Wind	N/A	N/A	Strong winds downed power lines and trees; power outages; approximately \$50 K in property damage

Notes:

EM Emergency Declaration (FEMA)

FEMA Federal Emergency Management Agency

DR Major Disaster Declaration (FEMA)

IA Individual Assistance N/A Not applicable

PA Public Assistance



^{*} Only location-specific hazard zones or vulnerabilities identified.



9.2.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Village of Brewster. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for Village of Brewster.

Table 9.2-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Do Structures Vulnerable to t		Probability of Occurrence ^c	Risk Ranking Score (Probability x Impact)	Hazard Ranking
Earthquake	100-Year GBS: 500-Year GBS: 2,500-Year GBS:	\$0 \$1,052,806 \$20,528,822	Occasional	12	Low
Extreme Temperature	Damage estimate not	available	Frequent	30	Medium
Flood	1% Annual Chance:	\$841,593	Frequent	18	Medium
Landslide	RCV Exposed:	\$332,990,819	Occasional	36	High
Severe Storm	100-Year MRP: 500-year MRP: Annualized:	\$306,916 \$2,558,956 \$23,916	Frequent	48	High
Severe Winter Storm	1% GBS: 5% GBS:	\$2,015,812 \$10,079,059	Frequent	51	High
Wildfire	Estimated Value in the WUI:	\$299,304,173	Frequent	42	High

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

GBS = General building stock

 $MRP = Mean \ return \ period$

 $RCV = Replacement\ cost\ value$

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the municipality.

Table 9.2-4. NFIP Summary

Municipality	# Policies	# Claims	Total Loss Payments (2)	# Rep. Loss	# Severe Rep. Loss Prop.	# Policies in 100-year Boundary
Municipanty	(1)	(Losses) (1)	Payments (2)	Prop. (1)	(1)	(3)
Village of Brewster	5	6	\$41,240.74	0	0	0

Source: FEMA, 2014



b. The valuation of general building stock and loss estimates was based on the custom inventory developed for Putnam County and probabilistic modeling results and exposure analysis as discussed in Section 5.

c. The earthquake and hurricane wind hazards were evaluated by Census tract. The Census tracts do not exactly align with municipal boundaries; therefore, a total is reported for each Town inclusive of the Villages within the Town boundary.

 $d. \quad \textit{Frequent} = \textit{Hazard event is likely to occur within 25 years}.$

Occasional = Hazard event is likely to occur within 100 years

Rare = Hazard event is not likely to occur within 100 years

e. The estimated potential losses for Severe Storm are from the HAZUS-MH probabilistic hurricane wind model results. See footnote c.



- Note (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of February 28, 2014 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 2/28/2014.
- Note (2) Total building and content losses from the claims file provided by FEMA Region 2.
- Note (3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.
- Note (4) FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

Table 9.2-5. Potential Flood Losses to Critical Facilities

		Exposure		Exposure			Potential Loss fro 1% Flood Event	
Name	Туре	1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent(2)		
Brewster Metro North	Rail Facility	X						
Park Street Pump Station	Wastewater	X						

Source: HAZUS-MH 2.1

Note: Please note it is assumed the wells and pump stations have electrical equipment and openings are three-feet above grade. If depth of

water is less than 3 feet, no estimated damages are calculated.

NP Not provided by HAZUS

x Facility located within the DFIRM boundary.

- No loss calculated by HAZUS NA Not calculated in HAZUS

NF HAZUS estimate the facility will not be functional

- (1) HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).
- (2) In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.
- (3) Dams located in the floodplain are not listed in the table above. HAZUS does not calculate potential losses to a dam as a result of a flood event.

Other Vulnerabilities Identified by Municipality

According to the 2013 FEMA Flood Insurance Study (FIS) for Putnam County, in the Village of Brewster, the East Branch Croton River has flooded the Village well fields which are located near I-84. Tonetta Brook has been the source of problem flooding near the Brewster Railroad Station (FEMA FIS 2013).

In addition to those identified above, the municipality has identified the following vulnerabilities:

• Potable Water System (Well Field and Pump House) – System lacks back up power or even transfer switches. Power comes into area and splits; one leg goes to power the well field pumps, the other leg goes to power the pump house (air stripping, chlorination, booster pumps, and distribution system). The well field itself is prone to flooding and is a concern as it is not a good location for a fixed generator. They lost power to the well field for several days out due to Sandy. Health Department regulations require at least transfer switches at both locations; however that is not the ideal solution. They have been seeking funding to address the problem for some 7 years.



- Intersection of Railroad Avenue & Marvin Avenue problem is 3 36" pipes carrying water from Tonetta Brook that go under Marvin Avenue. These pipes are vulnerable to getting blocked by debris. There are retaining walls on both sides that are vulnerable, one side is in poor shape.
- Oak Street Town of Southeast filled in Wells (Park) Pond which provided retention for this area.
 Downstream water management is complete including phosphorus reduction. Conduits running under Oak Street to Main Street are in need of sizing adjustments and rehabilitation to accommodate high flow events.
- Oak Street and Route 6 State is redoing the retention wall/culvert in this area, but only the part that crosses Rt. 6, but that leaves an 80' gap from Oak Street...this channel has caved in before. Some buildings are vulnerable to foundation damage from a possible flooding at east side of Oak and Main.
- Carmel Avenue Bridge Built by DOT in 1937, is extremely deteriorated. This is the primary access to the Village, and also carries Village water and sewer lines. The bridge is now owned by MTA, who has to date not indicated that they have plans to address. A hazard to motorists, pedestrians and trains, and all access including emergency services, businesses, etc.
- State Route 6 Retaining Wall is a retrofit project. Side of route 6 is raised 12'-15'feet and the embankment collapsed. There is a potential for this main road not being able to carry truck traffic. State did a temporary fix and is in construction on a more permanent but incomplete solution. The whole wall is vulnerable, and their plan is not to shore up the whole wall. Some sections of wall will still be vulnerable to collapse.
- County Records Center 121 Main Street.
- The following critical or essential facilities in the Village lack back-up power:
 - o Public Works Garage and Police Department (208 Main Street)
 - o Putnam Community Foundation 24 Senior Apartments (above 50 Main Street)
 - Mayor Mitchell Court 24 Senior Apartments
 - o 9 minor sewer lift stations
 - o Medical Clinic (155 Main) Federal qualified Health Care Facility
 - United Cerebral Palsy (UCP) 11 Oak Street, planning to put back in place as a medical facility
- Prospect Hill Bridge, also owned by MTA, is also in poor condition.
- Private road property retaining wall along private road off Merritt Lane a section of wall collapsed. ~ 4 houses here would lose access....they already have limited access.
- Sheltering have some designated locations, but they have capacity issues (septic and sewer). Have two empty schools (Garden Street and St. Lawrence [partially used])
- Marvin Avenue- low point of Village. Typical flooding, private home flood vulnerability. Basements floods out.
- Erosion along river banks from flooding.
- Village is underlain by iron mines in some areas, and thus there is some vulnerability to sinkholes. Never had an occurrence. Low concern, except perhaps near train station.



9.2.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the municipality.

Table 9.2-6. Planning and Regulatory Tools

	Do you have	Authority	Dept.	Code Citation and Comments (Code Chapter, date of adoption,
Tool / Program (code, ordinance, plan)	this? (Y/N)	(local, county, state, federal)	/Agency Responsible	name of plan, explanation of authority, etc.)
Building Code	Y	State, local		Ch. 103
Zoning Ordinance	Y	Local		Ch. 263, adopted 6-18-08 Updating, see Comprehensive Plan below
Subdivision Ordinance	Y	Local		Ch. 263-22
Site Plan Review Requirements	Y	Local		Ch. 263-21
National Flood Insurance Program (NFIP) Flood Damage Protection Ordinance	Y	Federal, State, Local		Ch. 134
NFIP - Freeboard	Y	State, Local	See above	Ch. 134 State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types.
NFIP - Cumulative Substantial Damages	N	Local		
Comprehensive Plan / Master Plan	Y	County, Local		Redoing 2004 Comprehensive Plan, working under an IMA with the County for support, including updates to Comprehensive Plan and land use regulations, Urban Renewal Plan, Zoning Ordinances and Generic Environmental Impact Statement (GIES)
Capital Improvements Plan	N			
Stormwater Management Plan/Ordinance	Y	Federal, State, Local		Ch. 209
Floodplain Management / Basin Plan	Y			Ch. 134
Open Space or Greenway Plan	N			
Emergency Management Plan	Y			
Economic Development Plan	N			
Post Disaster Recovery Plan and/or Ordinance	N			
Growth Management	N			
Real Estate Disclosure req.	Y	State		State mandated



Tool / Program (code, ordinance, plan)	Do you have this? (Y/N)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, date of adoption, name of plan, explanation of authority, etc.)
Habitat Conservation Plan	N			
Special Purpose Ordinances (e.g. wetlands, critical or sensitive areas)	N			

⁽¹⁾ NYS Subdivision laws provide a general framework, but allow room for local ordinances and interpretation.

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Brewster.

Table 9.2-7. Administrative and Technical Capabilities

Staff/ Personnel Resources	Available (Y or N)	Department/ Agency/Position
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Contractor
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Contractor
Planners or engineers with an understanding of natural hazards	Y	Contractor
NFIP Floodplain Administrator	Y	Village Engineer (currently John Folchetti, contracted)
Surveyor(s)	N	
Personnel skilled or trained in "GIS" applications	N	
Scientist familiar with natural hazards in the County.	N	
Emergency Manager	Y	Contractor
Grant Writer(s)	Y	Contractor
Staff with expertise or training in benefit/cost analysis	Y	

Fiscal Capability

The table below summarizes financial resources available to the Village of Brewster.

Table 9.2-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community Development Block Grants (CDBG)	Y
Capital Improvements Project Funding	Y
Authority to Levy Taxes for specific purposes	Y
User fees for water, sewer, gas or electric service	Y (capital reserve accounts for water and sewer)
Impact Fees for homebuyers or developers of new development/homes	Y (stormwater)
Incur debt through general obligation bonds	Y
Incur debt through special tax bonds	Y, haven't used
Incur debt through private activity bonds	N
Withhold public expenditures in hazard-prone areas	Not a policy
Mitigation grant programs	Y



Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Other	

Community Classifications

The table below summarizes classifications for community program available to the Village of Brewster.

Table 9.2-9. Community Classifications

Program	Classification	Date Classified
Community Rating System (CRS)	N/P	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	NO ISO Classification	
Public Protection	See Brewster Fire Department	
Storm Ready	N/P	N/A
Firewise	N/P	N/A

 $N/A = Not \ applicable. \ NP = Not \ participating. \ - = Unavailable. \ TBD = To \ be \ determined.$

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at http://www.isomitigation.com/ppc/0000/ppc0001.html
- The National Weather Service Storm Ready website at http://www.weather.gov/stormready/howto.htm
- The National Firewise Communities website at http://firewise.org/

National Flood Insurance Program

NFIP Floodplain Administrator: John Folchetti

Village of Brewster is currently an active member of the NFIP, in good standing with no outstanding compliance issues. The Village of Brewster has completed Community Assistance Visits (CAV), with the most recent visit completed in December 2013.

As of July 31, 2014 there are 4 policies in force, insuring \$650,400 of property with total annual insurance premiums of \$2,503.



Loss History and Mitigation

Since 1978, 6 claims have been paid totaling \$41,241. As of February 28, 2014 there no Repetitive Loss or Severe Repetitive Loss properties in the Village.

As per the most recent FEMA flood maps, there are no structures in the mapped floodplain. There have not been any properties flooded from recent storms. The majority of flooding in homes has been a result of the stormwater system backing up into properties. If Substantial Damage estimates were necessary, the Floodplain Administrator would be responsible.

Planning and Regulatory Capabilities

The communities Flood Damage Prevention Ordinance (FDPO) was last updated on January 10, 2013, and is found at Chapter 134 of the local code.

Floodplain management regulations and ordinances meet the minimum requirements set forth by both FEMA and New York State. There are no additional regulations, ordinances, plans, or program further supporting the implementation of the floodplain management program.

Administrative and Technical Capabilities

The community FDPO identifies the Village Engineer as the local NFIP Floodplain Administrator, currently John Folchetti, for which floodplain administration is an auxiliary duty. This is a contracted position by an outside consultant to provide the Village with insight into floodplain matters.

Duties and responsibilities of the NFIP Administrator are permit review, determine base flood date, interpret flood boundaries, and conduct inspections if necessary.

As per the most recent FEMA flood maps, there are no structures in the mapped floodplain. There have not been any properties flooded from recent storms. The majority of flooding in homes has been a result of the stormwater system backing up into properties. If Substantial Damage estimates were necessary, the Floodplain Administrator would be responsible.

John Folchetti feels he is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator. John Folchetti is not certified in floodplain management, however attends regular continuing education programs for code enforcement.

Public Education and Outreach

As per the most recent FEMA flood maps, there are no structures in the mapped floodplain. Therefore, the need to conduct education and outreach is not necessary in the Village. Should members of the community be interested in learning about the flood risk, information is made available through the Village offices.

Duties and responsibilities of the NFIP Administrator are permit review, determine base flood date, interpret flood boundaries, and conduct inspections if necessary.

Actions to Strengthen the Program

The only barrier to running an effective floodplain program in the Village is the lack of people exposed directly to flood risk. With low risk throughout the Village, it is difficult to garner support and attention on flooding matters. Additional information on floodplain management and the Community Rating System (CRS) program would be welcomed.



Community Rating System

The Village does not participate in the Community Rating System (CRS) program.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that have been/will be incorporated into municipal procedures which may include former mitigation initiatives that have become continuous/on-going programs and may be considered mitigation 'capabilities'.

- Land Use Planning/Comprehensive Planning: The Village is redoing their 2004 Comprehensive Plan, working under an IMA with the County for support, including updates to Comprehensive Plan and land use regulations, Urban Renewal Plan, Zoning Ordinances and Generic Environmental Impact Statement (GIES). The Village is in the process of updating the Comprehensive Plan and amending the zoning ordinance. The Village will include natural hazard zones and reference the HMP in the Comprehensive Plan, and will incorporate the finding and recommendations of the HMP into all relevant aspects of Village re-development.
- **Floodplain Management:** The Village has engaged contract Engineering support, which includes serving as the Village's NFIP Floodplain Administrator (currently John Folchetti), who feels he is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator, and attends regular continuing education programs for code enforcement.
- **Site Planning/Permitting:** To address the concern of sinkholes, the Village will work towards requiring geo-technical investigations in areas of high probability of sinkholes as part of the site-planning and permitting process
- **Building Local Mitigation Capabilities:** The Village has included an initiative within the proposed mitigation strategy to support and participate in county-led initiatives intended to build local and regional mitigation and risk-reduction capabilities.



9.2.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

Past and On-Going Mitigation Activity

The municipality identifies the following mitigation projects and/or initiatives have been completed, or are in progress:

• State Route 6 Retaining Wall: With the support of the Village, NYSDOT is nearing completion of the rebuild of this retaining wall that has been at risk to additional collapse, road closure and life-safety risk from flood, severe storm and other hazards.

Proposed Hazard Mitigation Initiatives for the Plan

The Village of Brewster identified mitigation initiatives they would like to pursue in the future. Some of these initiatives may be previous actions carried forward for this plan. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Table 9.2-11 identifies the municipality's updated local mitigation strategy.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as 'High', 'Medium', or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.2-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan.



Table 9.2-10. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals / Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
VOB-1	Carmel Avenue Bridge Problem: Built by DOT in 1937, is extremely deteriorated. This is the primary access to the Village, and also carries Village water and sewer lines. The bridge is now owned by MTA, who has to date not indicated that they have plans to address. A hazard to motorists, pedestrians and trains, and all access including emergency services, businesses, etc. Project/Initiative: Continue to work to appeal to MTA, NYS representatives, and other levels of government to address the problem.										
	See above.	Existing	All hazards requiring emergency response	G-1, G-2, G- 5	Village Clerk, working with MTA, NYSDOT	High – Life Safety; Loss of access to Village Downtown	Low for Village to appeal bridge owners; High – est. \$10MM for reconstructio n of bridge	Local Budget for appeal, MTA for reconstruction	Ongoing	High	LPR, SIP
VOB-2 LOI #1862	Water Backup Po See Action Work		ide two emergenc	ey power transfer	switches, excavation,	cabling and labor to	enable connecti	on to a generator (al	ternate power supp	ly).	
	See above.	Existing	Severe Storm, Severe Winter Storm, Climate Change	G-1, G-2	Village of Brewster, Peter Hansen, Village Clerk & Treasurer	High – Reduced vulnerability of critical infrastructure; life-safety	\$75,000	Federal Mitigation Grant funding; local budget for match	Short Term once funding is secured	High	SIP
VOB-3	Problem: 3 - 36" vulnerable, one si	ide in poor shape.	netta Brook that g	o under Marvin A	ments Avenue. These pipes a fy a solution. The mi						



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals / Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
	See above.	Existing	Flood, Severe Storm, Climate Change	G-1, G-2, G- 3	Village of Brewster, Peter Hansen, Village Clerk & Treasurer; with support of NYSDEC, NYCDEP	Reduced vulnerability to local flooding, avoid undermining roadway and building foundation.	Low – Medium for Village Engineering assessment; High – project est. \$1MM	Village budget for assessment; potentially developer for project	Short Term – Village engineer to assess; Long-term for implementation	Medium	LPR, SIP
VOB-4		Southeast filled i Redesign and reh	n Wells (Park) Po		ed retention for this are er Oak Street to Main S						
	See above.	Existing	Flood, Severe Storm, Climate Change	G-2	Village of Brewster, Peter Hansen, Village Clerk & Treasurer; with support of NYSDEC, NYCDEP	Avoid undermining roadway and building foundation.	High – est. \$1MM	Federal Mitigation Grant funding; local budget for match	Long-term dependent on funding availability	Medium	SIP
VOB-5	Public Work Putnam Con Mayor Mitcl 9 minor sew Medical Clin	emporary backup as Garage and Poli amunity Foundation hell Court – 24 Se er lift stations nic (155 Main) – Febral Palsy (UCP)	power generators ce Department (2 on – 24 Senior Ap nior Apartments Federal qualified I) at the following 08 Main Street) partments (above Health Care Facil	ity ack in place as a medic	cilities, which may	ackup power (or require securing	appropriate connect grant funding:	ions and transfer sw		
	See above.	Existing	Severe Storm, Severe Winter Storm	G-1, G-2, G- 3	Facility/Property Owners working with Village, NYS DHSES	High - Uninterrupted public safety services	Medium – High (total est. \$2MM)	Federal Mitigation Grant funding; property owner for local match	Medium Term - Implementation in short-term once funding is secured	High	SIP
VOB-6	Sheltering – Villa	ge-Wide.									



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals / Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
	(Garden Street an	d St. Lawrence) w Continue to expl	which are currently	partially used.	een considering some pont the Village; upgrade v	iable facilities as n	•				
	See above.	N/A	All hazards requiring sheltering.	G-1, G-5	Putnam County, Village of Brewster, working with ARC	High –Life Safety	High – est. \$0.5MM	Grant Applications	Medium Term	Medium	SIP
VOB-7		n along river bank Regular inspection	s from high volum		s. Review design capac	ity and determine	necessary renova	ations, which will lik	ely include replace	ments of gabic	on walls
	See above.	Both	Flood, Severe Storm, Climate Change	G-1, G-2, G- 4	VOB engineer; support from NYS DHSES, FEMA, NYCDEP, NYCDEC	Reduced vulnerability of property and structures to flooding and structural integrity; possible life safety	High – est. >\$1MM	Village Budget; NRCS EWP Grant	Long Term	Medium	SIP, NRP
VOB-8		e road property - r	etaining wall alon		f Merritt Lane – a sections this issue, which may i						ess.
	See above.	Existing	Flood Severe Storm, Earthquake, Climate Change	G-1, G-2	Private property owners, as supported by the Village for permitting and inspection	High – Life Safety; Loss of access	Medium - High	Private property owners; FEMA HMA funding as applicable	Long Term – dependent on property owner's schedule	Low	EAP, SIP
VOB-9	Project/Initiative: implementation.	a low point of Vill Village to suppo	lage. Typical floo rt property owner	efforts to address	ne flood vulnerability. Is this issue, which may i	nclude grant appli	cation administra		•		
	See above.	Existing	Flood, Severe Storm, Climate Change	G-1, G-2, G- 3	VOB engineer; support from NYS DHSES and FEMA	Reduced vulnerability to structural damage; Public Health	High – est. \$5MM	Federal Mitigation Grant funding; local budget for match	Long Term – dependent on property owner's schedule	Low	EAP, SIP
VOB- 10					and regional mitigation (Cs) within the County,		-		•		



Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals / Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
		NFIP Common Benefit-Cost Substantial D NFIP Elevation Certified Floor	unity Rating Syste Analysis (BCA) amage Estimating on Certificates (E odplain Manager	em (CRS) g (SDE) cC) (CFM) Training	dplain management and and Certification ative for Disaster Displa	·	`	·			
	See above	New and Existing	All Hazards	All Objectives	Putnam County, as supported by relevant local department leads,	High (comprehensiv e improvements mitigation and risk-reduction capabilities)	Low- Medium (locally)	Local (staff resources)	Short	High	LPR, EAP

Notes:

Not all acronyms and abbreviations defined below are included in the table.

Acronyms and Abbreviations:

CAV Community Assistance Visit CRS Community Rating System DPW Department of Public Works

FEMA Federal Emergency Management Agency

FPA Floodplain Administrator HMA Hazard Mitigation Assistance

N/A Not applicable

NFIP National Flood Insurance Program

NYCDEP New York City Department of Environmental Protection NYSDEC New York State Department of Environmental Conservation

NYS DHSES New York State Department of Homeland Security and Emergency Services

OEM Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program

HMGP Hazard Mitigation Grant Program
PDM Pre-Disaster Mitigation Grant Program
RFC Repetitive Flood Claims Grant Program
SRL Severe Repetitive Loss Grant Program

^{*}Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.



Timeline:

Short 1 to 5 years

Long Term 5 years or greater

OG On-going program

DOF Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low < \$10,000

Medium \$10,000 to \$100,000

High > \$100,000

Where actual project costs cannot reasonably be established at this time:

Low Possible to fund under existing budget. Project is part of, or can be part of an

existing on-going program.

Medium Could budget for under existing work plan, but would require a

reapportionment of the budget or a budget amendment, or the cost of the

project would have to be spread over multiple years.

High Would require an increase in revenue via an alternative source (i.e., bonds,

grants, fee increases) to implement. Existing funding levels are not adequate

to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low= < \$10,000

Medium \$10,000 to \$100,000

High > \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low Long-term benefits of the project are difficult to quantify in the short term.

Medium Project will have a long-term impact on the reduction of risk exposure to life

and property, or project will provide an immediate reduction in the risk

exposure to property.

High Project will have an immediate impact on the reduction of risk exposure to life

and property.

Mitigation Category:

- Local Plans and Regulations (LPR) These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.

 These actions may also include participation in national programs, such as StormReady and Firewise Communities



Table 9.2-11. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
VOB-1	Carmel Avenue Bridge	1	1	1	-1 (Village does not have technical resources to address)	1	-1 (Village does not own bridge)	-1 (Funding is MTA responsibility)	1	1	1	1	1	1	1	8	High
VOB-2	Water Backup Power Supply	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
VOB-3	Intersection of Railroad Avenue & Marvin Avenue Drainage Improvements	0	1	1	1	1	1	0	1	1	0	1	0	1	1	10	Medium
VOB-4	Oak Street Stormwater Management Improvements	0	1	0	1	1	1	-1	1	0	1	0	1	1	1	8	Medium
VOB-5	Install Back Up Power at Various Village Critical Facilities	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
VOB-6	Sheltering – Village-Wide	1	0	0	1	1	1	0	1	1	1	1	0	1	1	11	Medium
VOB-7	River Bank Erosion – Village-Wide	0	1	0	1	1	0	0	0	1	1	1	0	1	1	8	Medium
VOB-8	Merritt Lane (private road) Retaining Wall	0	1	0	1	1	1	-1 (private property owners)	1	0	-1 (would require Village admin for Federal grant)	1	0	0	1	5	Low
VOB-9	Marvin Avenue Basement Flood Vulnerability	0	1	0	1	1	1	-1 (private property owners)	1	0	-1 (would require Village admin for Federal grant)	1	0	0	1	5	Low
VOB-10	Support and participate in county led initiatives intended to build local and regional mitigation and risk- reduction capabilities	1	1	1	1	1	1	0 (will require municipality to support staff time)	1	1	0 (will require municipality to support staff time)	1	1	1	1	12	High

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.





9.2.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.2.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Village of Brewster that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Village of Brewster has significant exposure. These maps are illustrated below.

9.2.9 Additional Comments

None at this time.



Figure 9.2-1. Village of Brewster Hazard Area Extent and Location Map

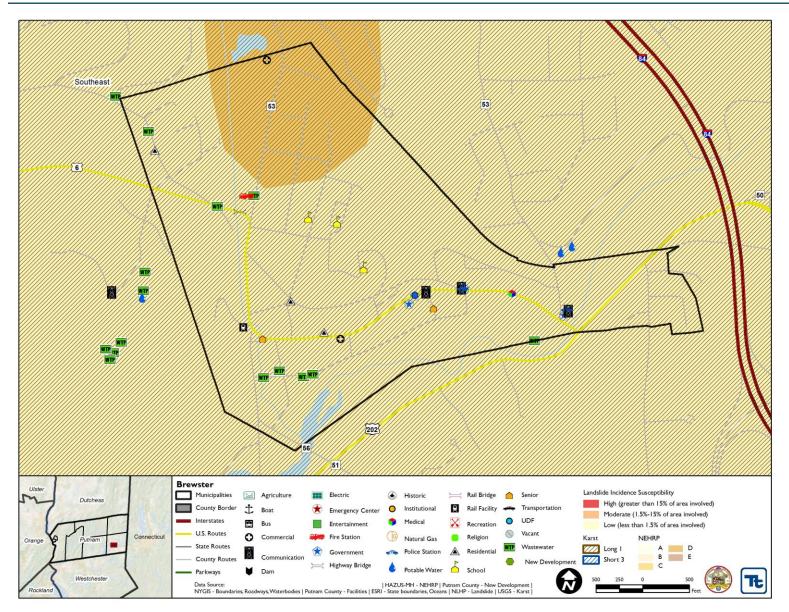
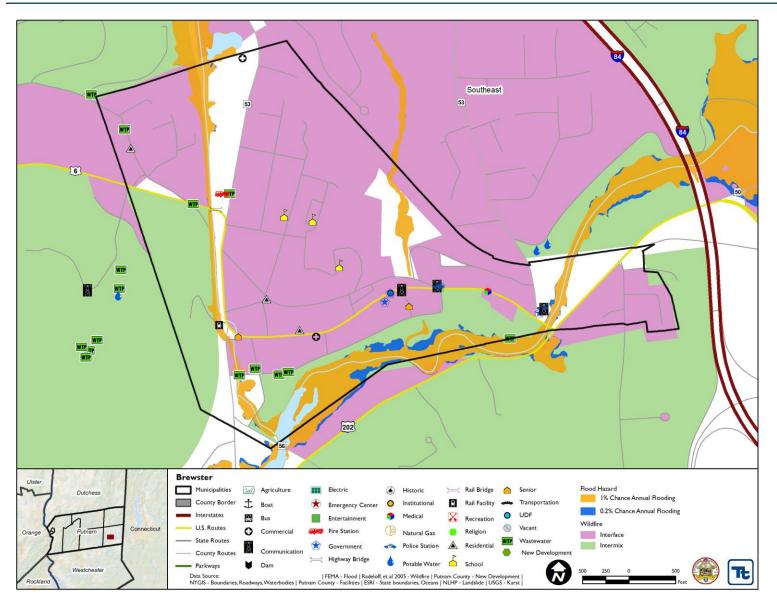




Figure 9.2-2. Village of Brewster Hazard Area Extent and Location Map





Name of Jurisdiction: Village of Brewster, Brewster

Action Number: VOB-2 (LOI #1862)

Action Name: Water Backup Power Supply

	Assessing the Risk							
Hazard(s) addressed:	Severe Storm, Severe Winter Storm, Climate Change							
Specific problem being mitigated:	Provide two emergency power transfer switches, excavation, cabling and labor to enable connection to a generator (alternate power supply). The two locations are separated by approximately 500 feet. The remote control house manages the well pumps.							
	Evaluation of Potential Actions/Projects							
Actions/Projects Considered (name of project and reason for not selecting):	 No Action – Critical infrastructure remains vulnerable to power outages Install permanent generators at both locations – less cost-effective 3. 							
Ac	tion/Project Intended for Implementation							
Description of Selected Action/Project	For emergency transfer switch #1; Install 1 600 AMP Emergency transfer switch outdoors at the pumphouse. Excavate and pour a suitable foundation and structural frame to hold the NEMA 4X lockable cabinet adjacent to the pumphouse.							
Mitigation Action/Project Type	SIP							
Goals/Objectives Met	G-1, G-2							
Applies to existing structures/infrastructure, future, or not applicable	Existing							
Benefits (losses avoided)	High – Reduced vulnerability of critical infrastructure; life-safety Recent Damages: \$1,000							
Estimated Cost	\$75,000							
Priority*	High							
	Plan for Implementation							
Responsible Organization	Village of Brewster, Peter Hansen, Village Clerk & Treasurer							
Local Planning Mechanism	Comprehensive Emergency Management Plan; Sheltering Plan; Capital Improvements Planning							
Potential Funding Sources	Federal Mitigation Grant funding; local budget for match							
Timeline for Completion	Short Term once funding is secured							
	Reporting on Progress							
Date of Status Report/ Report of Progress * Pefor to results of Prioritization (Date: Progress on Action/Project:							

^{*} Refer to results of Prioritization (page 2)



Action Number: VOB-2 (LOI #1862)

Action Name: Water Backup Power Supply

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Maintain municipal water supply during power outages – drinking water supply
Property Protection	1	Maintain municipal water supply during power outages – fire-fighting
Cost-Effectiveness	1	Very cost-effective
Technical	1	Highly technically feasible
Political	1	Project is supported by the Village government and residents
Legal	1	No legal impediments
Fiscal	0	Grant funding sought to support project implementation
Environmental	1	No environmental impediments, minimal permitting required
Social	1	Project benefits entire Village
Administrative	1	Project can be administered within existing Village resources
Multi-Hazard	1	Protects against all hazards that result in power outages
Timeline	1	Project can be implemented in the short term once funding is secured
Agency Champion	1	The Village Clerk is the lead for the project
Other Community Objectives	1	Supports overall emergency management and continuity of operations
Total	13	
Priority (High/Med/Low)	High	



Name of Jurisdiction: Village of Brewster

Action Number: VOB-4

Action Name: Oak Street Stormwater Management Improvements

	Assessing the Risk					
Hazard(s) addressed:	Flood, Severe Storm, Climate Change					
Specific problem being mitigated:	Town of Southeast filled in Wells (Park) Pond which provided stormwater retention for this area.					
	Evaluation of Potential Actions/Projects					
Actions/Projects Considered (name of project and reason for not selecting):	 No action – vulnerability of area to localized stormwater flooding persists Re-establish Wells Park Pond – cost-prohibitive and politically unpopular Upgrade drainage systems in the area to manage stormwater 					
Ac	tion/Project Intended for Implementation					
Description of Selected Action/Project	Redesign and rehabilitate underground conduit under Oak Street to Main St.					
Mitigation Action/Project Type	SIP					
Goals/Objectives Met	G-2					
Applies to existing structures/infrastructure, future, or not applicable	Existing					
Benefits (losses avoided)	Avoid undermining roadway and building foundation					
Estimated Cost	High – est. \$1MM					
Priority*	Medium					
	Plan for Implementation					
Responsible Organization	Village of Brewster, Peter Hansen, Village Clerk & Treasurer; with support of NYSDEC, NYCDEP					
Local Planning Mechanism	Stormwater Management Plan; Capital Improvements Planning					
Potential Funding Sources	Federal Mitigation Grant funding; local budget for match					
Timeline for Completion	Long-term dependent on funding availability					
	Reporting on Progress					
Date of Status Report/ Report of Progress * Refort to regults of Prioritization (Date: Progress on Action/Project:					

^{*} Refer to results of Prioritization (page 2)



Action Number: VOB-4

Action Name: Oak Street Stormwater Management Improvements

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	Little influence on life safety issues
Property Protection	1	Protects roadway and building foundations
Cost-Effectiveness	0	Cost-effectiveness not fully evaluated
Technical	1	Technically feasible
Political	1	Project would be supported by the Village government and residents
Legal	1	No legal impediments
Fiscal	-1	Grant funding would be needed to implement project
Environmental	1	No environmental impediments, minimal permitting required
Social	0	Protects against stormwater flooding in a limited area
Administrative	1	Projects can be administered within existing Village resources
Multi-Hazard	0	Protects against stormwater flooding in a limited area
Timeline	1	Project can be implemented in the short term once funding is secured
Agency Champion	1	Village Clerk
Other Community Objectives	1	Supports stormwater management program
Total	8	
Priority (High/Med/Low)	Medium	



Name of Jurisdiction: Village of Brewster, Brewster

Action Number: VOB-5

Action Name: Install Back Up Power at Various Village Critical Facilities

	Assessing the Risk
Hazard(s) addressed:	Severe Storm, Severe Winter Storm, Climate Change
Specific problem being mitigated:	A number of critical and essential facitilities within the Village are vulnerable to power outages, which are becoming increasingly frequent as storms become more frequent, intense and unseasonal (e.g. early season winter storms where trees still have leaves)
1	Evaluation of Potential Actions/Projects
Actions/Projects Considered (name of project and reason for not selecting):	No action – vulnerability and losses persist Underground all electrical infrastructure – cost-prohibitive and technically difficult, doesn't address system weaknesses outside of Village control Install back-up power at critical facilities
Ac	tion/Project Intended for Implementation
Description of Selected Action/Project	Work with facility owners/operators to install backup power (or appropriate connections and transfer switches to accommodate temporary backup power generators) at the following critical or essential facilities, which may require securing grant funding: Public Works Garage and Police Department (208 Main Street) Putnam Community Foundation – 24 Senior Apartments (above 50 Main Street) Mayor Mitchell Court – 24 Senior Apartments 9 minor sewer lift stations Medical Clinic (155 Main) – Federal qualified Health Care Facility United Cerebral Palsy (UCP) – 11 Oak Street, planning to put back in place as a medical facility
Mitigation Action/Project Type	SIP
Goals/Objectives Met	G-1, G-2, G-3
Applies to existing structures/infrastructure, future, or not applicable	Existing
Benefits (losses avoided)	High – Reduced vulnerability of critical and essential facilities, infrastructure and services to power outages; public and life-safety
Estimated Cost	Medium – High (total est. \$2MM)
Priority*	High
	Plan for Implementation
Responsible Organization	Facility/Property Owners working with Village, NYS DHSES
Local Planning Mechanism	Comprehensive Emergency Management Plan; Sheltering Plan; Capital Improvements Planning; Continuity of Operations/Continuity of Government
Potential Funding Sources	Federal Mitigation Grant funding; local budget for match
Timeline for Completion	Medium Term – Implementation in short-term once funding is secured



Reporting on Progress					
Date of Status Report/	Date:				
Report of Progress on Action/Project:					

^{*} Refer to results of Prioritization (page 2)



Action Number: VOB-5

Action Name: Install Back Up Power at Various Village Critical Facilities

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Maintain operation of critical facilities during power outages
Property Protection	1	Several facilities support services that protect property
Cost-Effectiveness	1	Very cost-effective
Technical	1	Highly technically feasible
Political	1	Projects are supported by the Village government and residents
Legal	1	No legal impediments
Fiscal	0	Grant funding sought to support project implementation
Environmental	1	No environmental impediments, minimal permitting required
Social	1	Projects benefit entire Village
Administrative	1	Projects can be administered within existing Village resources
Multi-Hazard	1	Protects against all hazards that result in power outages
Timeline	1	Project can be implemented in the short term once funding is secured
Agency Champion	1	The Village Clerk will support facility owners/operators in project implementation
Other Community Objectives	1	Supports overall public health and safety, emergency management and continuity of operations
Total	13	
Priority (High/Med/Low)	High	