

8.12 - Jurisdictional Annex, Town of North Greenbush

This section presents the jurisdictional annex for the Town of North Greenbush. The jurisdiction's governing body passed a formal resolution to participate in this multi-jurisdictional hazard mitigation plan update. A copy of their resolution is maintained at the local government offices and at the Rensselaer County Bureau of Public Safety.

8.12.1 Contact Information

The jurisdiction's resolution to participate identified a Primary Point of Contact and an Alternate for this hazard mitigation plan update. These individuals represented the jurisdiction on the county-wide Core Planning Group and led a local team of Jurisdictional Assessment Team Members who undertook various local activities related to the plan update.

HAZARD MITIGATION PLAN POINTS OF CONTACT						
Primary Point of Contact			Alternate Point of Contact			
Name: Anthony J. Germano Title: Town Comptroller Address: 2 Douglas Street, Wynantskill, NY 12198 Phone Number: 518-283-3525 ext.19 E-mail Address: agermano@northgreenbush.org			Name: David Keevern Title: Police Chief Address: 133 Bloominggrove Drive, Troy, NY 12180 Phone Number: 518-283-4014 E-mail Address: dkeevern@northgreenbushpolice.org			
Jurisdictional Assessment Team Members						
Local Jurisdiction Role/Position	Name	Email	Phone	Date of Invitation	Method of Invitation	Agreed to participate?
Land Use/Community Planner	Mark Lacivita	mark4209@outlook.com	518-527-0408	12/18/2018	Memo	Yes
Emergency Manager	Chief David Keevern	dkeevern@northgreenbushpolice.org	518-283-4014	12/13/2018	Memo	Yes
Floodplain Manager/Administrator	Mike Miner	building@northgreenbush.org	518-283-2714	12/18/2018	Memo	Yes
Public Works Director / City Engineer	Mark Premo	premo@nycap.rr.com	518-283-3921	12/18/2018	Memo	Yes
Building Code Official	Mike Miner	same as above				
Fiscal/Budget Officer	Anthony Germano	agermano@northgreenbush.org	518-283-3525 x 19	12/13/2018	Memo	Yes
Elected Officials	Louis Desso	ldesso@northgreenbush.org	518-283-5313	12/18/2018	Memo	Yes
Elected Officials	Joe Bott	jbott@northgreenbush.org	518-283-5313	12/18/2018	Memo	Yes
Local Nursing Home	Art Proper	aproper@rensc.com	518-283-2000 x 301	2/22/2019	Memo	Yes
NG Ambulance	Kathy Allen	kallen05@msn.com	518-283-25313 x10	1/14/2019	Memo	Yes
Significant Business	N/A					
Resident/Library/Historian	James Greenfield	NGHistory@aol.com	518-283-5313	1/22/2019	Verbal/Meeting	Yes
Neighboring County 2	N/A					
Neighboring County 3	N/A					
Neighboring County 4	N/A					
Tribal Group/Nation	N/A					

8.12.2 JURISDICTION PROFILE

8.12.2.1 Location and Land Area

The Town of North Greenbush is located in western Rensselaer County, in the eastern part of New York State. It shares a border with Troy and Brunswick to the north; East Greenbush to the south; Poestenkill and Sand Lake to the east; and City of Rensselaer and Albany County to the west.

According to the 2010 U.S. Census Bureau, Rensselaer County has a total area of 665 square miles (1,720 km²), of which 652 square miles (1,690 km²) is land and 13 square miles (34 km²) (1.9%) is water. Of that, the Town of North Greenbush has a total area of 18.91 square miles (48.97 km²), of which 18.55 square miles (48.03 km²) is land and 0.36 square miles (0.94 km²) is water.

8.12.2.2 Population

According to the 2010 U.S. Census Bureau's American Community Survey 5-Year Estimates, the population of the Town of North Greenbush is estimated to be 12,075 persons.

8.12.2.3 Demographics

Of a total area of 19.02 square miles (2010 Census data), the land area is 18.69 square miles and population per square mile is 578.0 persons.

Of the total population, there are 88.8 males per 100 females (all ages). Persons under 18 years comprise 21.3% of the population, and 18.3% are persons 65 years and over (2010 Census). Young and old subsets of the population may have unique needs as far as care requirements and potential cognitive and/or mobility limitations before, during, and after a disaster.

The number of persons who speak a language other than English is 996, or 8.7%, of which 39.3% speak English less than "very well". Persons not speaking English well may have trouble understanding instructions regarding disaster preparation, response, and recovery.

Regarding education, of persons age 25 years and older, 89.7% are high school graduates or higher, and 26.7% have received their bachelor's degree or higher (2000 Census data). Higher education can help enhance skills associated with cognition and evaluation of risk. Higher education can, therefore, foster an overall improved perception of risk, particularly where individuals may not have prior direct experience preparing for, responding to, or recovering from a particular hazard in their daily lives.

Regarding families and living arrangements, from 2013 to 2017 there were 4,852 total households and 2.41 persons per household. Persons living alone sometimes have less of a direct social circle for support before, during, and after a disaster.

The Census Bureau classifies all people not living in housing units (house, apartment, mobile home, rented rooms) as living in group quarters. The two types of group quarters are Institutional (correctional facilities, nursing homes, mental hospitals) and Non-Institutional (college dormitories, military barracks, group homes, missions, shelters). The total number in group quarters are 367 or 3.0 % overall, with 346 (2.9%) institutionalized and 21 (0.2%) noninstitutionalized population. The needs of persons living in group quarters are unique, and residents are likely to have access and functional needs and unique care requirements before, during, and after a disaster.

According to 2017 ACS, the median household income was \$76,113; the per capita income in past 12 months (2017) was \$41,003; and the percentage of persons in poverty was 3.3%. Lower income persons have limited financial resources to draw from in both a pre- and post-disaster scenario and are likely to require support as they prepare for, and recover from, hazard events.

The total of noninstitutionalized civilians with a disability is 12.8%, and percentage of people with a disability over age 65 years is 30.6%. The total percentage of persons (civilian, noninstitutionalized) without health insurance is 3.0%. Persons with disabilities have access and functional needs such as cognitive or mobility limitations that may put them at greater risk before, during, and after a hazard event.

8.12.2.4 Brief History

The area that is now Rensselaer County was inhabited by the Algonquian-speaking Mohican Indian tribe at the time of European encounter. Kiliaen van Rensselaer, a Dutch jeweler and merchant, purchased the area in 1630, as part of the Dutch colony New Netherland. The land passed from English rule (1664) to Dutch control (1673), then back to English rule (1674), until American independence in 1776. Rensselaer County was created in 1790s from an area that was originally part of the very large Albany County. In 1807 the county reorganized.

The earliest settlers, in the early 1620s settled in Bath, a part of the town annexed to Rensselaer in 1902. North Greenbush was part of the Manor of Rensselaerswyck, and Albany County prior to Rensselaer County's creation in 1791. North Greenbush was created on February 23, 1855 from the town of Greenbush at the same time as the town of Clinton (today East Greenbush). At this time North Greenbush occupied more than what it does today, it also covered what is now the northern section of the city of Rensselaer and the southern section of the City of Troy. Some settlement in what is today North Greenbush may have occurred in the 17th century as well, but most significant early settlement occurred just prior to the US Revolutionary War.

8.12.2.5 Governing Body Format

The governing body of the municipality consists of a Town Supervisor and four Councilpersons, as well as other department heads. This council serves as the municipal/local government, performing executive functions of different natures. Members of this governing body are elected by the people.

8.12.2.6 Growth/Development Trends

Performing an assessment of growth and development trends is one step of a hazard mitigation plan update. This look into the future is important because development in hazard areas could put more people and property in harm's way and, in turn, could work to increase potential disaster-related damages and losses at a time when the mitigation plan's purpose is to reduce the potential for damages emanating from natural disasters.

An evaluation of growth and development trends was undertaken by each participating jurisdiction as part of the development of the initial plan in 2011. As part of this plan update, the Town of North Greenbush reviewed and updated its prior feedback to reflect current conditions in the community as of early 2019.

The Town of North Greenbush noted the following major development taking place:

New Development/Potential Development in the Municipality						
Property Name	Type (Residential or Commercial)	No. of Structures	Address	Block and Lot	Known Hazard Zone	Description /Status
The Meadows	Residential/Town Homes	204 units	Anthony Street, Wynantskill NY 12198	Tax ID# 122.-2-9	No known hazard	Under construction
Ridge Creek Village Condominiums	Residential/Condominiums	140 units	Whiteview Road, Wynantskill, NY 12198	Tax ID# 123.12-1-1	No known hazard	Planning Board approval but construction has not yet begun

Over the last five years the Town has experienced anticipated significant controlled residential and commercial/retail growth along primary and secondary road networks. Projects completed or in construction include: 248 upscale apartments units; 144 senior citizen apartments; 310 town homes/condominiums; 150 single family homes; 2 new credit unions; a 31,725 square foot retail mall with Stewarts, restaurants, and other retail stores; a 36,000 square foot commercial building housing a Panera Bread, kidney dialysis center, and professional offices; Shoprite Supermarket Plaza Shopping Center with more than 20 retail, restaurant, bank, etc. establishments; a new \$6.9 million state-of-the-art Defreestville Fire Department building; and a 40,000 square foot Community Care Physicians medical facility. In addition, the RPI Tech Park along the Route 4 corridor will be home to some 1,100 employees in a 217,000 square foot existing building for Regeneron Pharmaceuticals. In most cases, the developer for these projects has extended municipal services that include water, sewer and required storm water containment and drainage.

The Town of North Greenbush enforces laws to protect new development from the effects of natural hazards. The Building Inspector and Consulting Engineer and the Planning Board are responsible for reviewing all proposed building projects to ensure compliance before approval is granted, which includes adherence to the Town’s Flood Damage Prevention and Storm Water Management Code.

The Town of North Greenbush employs a full-time building inspector and code enforcement officer, a fire inspector and a part-time utilities inspector. A consulting engineer provides required engineering assistance to the Planning Board and Zoning Board of Appeals on all development projects. The Town’s Comprehensive Plan was updated to comply with required building and fire safety codes and storm water management criteria. Town staff are tasked to insure compliance various building and fire safety and storm water management codes prescribed by the Federal, State and Town regulations and that building projects as well as existing establishments remain in compliance. The Utilities Inspector oversees installation of municipal water and sewer infrastructure and, along with the Highway Superintendent, assures compliance with MS-4 regulations. The Town now maintains 18 separate stormwater drainage ponds that were required as part of subdivision approvals. The Town Highway

Budget now collects and reserves annual revenue (\$5,000 to \$7,000) each year for storm water drainage maintenance. The Town’s Highway Superintendent, along with our Consulting Engineer, recently performed a survey of 21 culvert pipes, ditches, catch basins, etc. that will require some level of repair or maintenance to ensure effective flow of water. The Building Inspector and Consulting Engineer and the Planning Board are responsible for reviewing all proposed building projects to ensure compliance before approval is granted, which includes adherence to the Town’s Flood Damage Prevention and Storm Water Management Code. The Town constructed a new Brookside Avenue Bridge over the Wynantskill Creek in 2015 which has abated creek flooding that is experienced during significant rain or snowmelt.

8.12.3 HAZARD IDENTIFICATION

The following hazards represent those that were deemed to be significant hazards of concern for the Town of North Greenbush:

Profiled Hazards in the Town of North Greenbush													
Jurisdiction	Atmospheric Hazards						Hydrologic Hazards			Geologic Hazards		Other Hazards	
	Extreme Temperatures (Coldwave/Heat Wave)	Hurricane/Tropical Storm	Lightning	Tornado	Wind	Winter Storm	Drought	Flood			Earthquake	Landslide ⁴	Wildfire ⁵
								Flooding ²	Dam Failure ¹	Ice Jam ³			
North Greenbush, Town of	■	■	■	■	■	■	■	■			■	■	■

Notes: (1) Based on presence of a High hazard dam (NYSDEC classification) either in the municipality or close upstream on a watercourse flowing through that municipality and feedback from the County Planning Department. (2) Based on identification of improved property in mapped FEMA flood hazard zones. (3) Based on historical records, Flood Insurance Studies, and local information as well as feedback from the County Planning Department. (4) Based on identification of improved property in mapped high incidence or high susceptibility landslide risk zones, plus those municipalities in which details of individual landslide events are available. (5) Based on identification of improved property in mapped wildfire hazard zones.

8.12.4 NOTABLE HAZARD EVENT OCCURRENCES SINCE 2011

Rensselaer County has a long history of natural hazard events occurring, as detailed in Section 3 of this plan. A summary of historical events is provided in each of the hazard profiles of Section 3 and includes a chronology of events that have affected the County and its municipalities.

NOAAs NCDC records 1,141 hazard event occurrences from 1950 to 2018 causing 1 fatality, 116 injuries, \$27,679,000 in property damage, and \$305,800 in crop damage. The table below presents a summary of 415 events that are included in NOAA’s NCDC records for Rensselaer County since the prior 2011 HMP was prepared to summarize the recent range and impact of natural hazard events potentially affecting the County and its municipalities. For details of events prior to 2011, refer to Section 3 of this plan.

Natural Hazard Event History (January 2011 through December 2018)					
Event Type	Count	Fatalities	Injuries	Property Damage	Crop Damage
Blizzard	2	0	0	\$0	\$0
Cold/Wind Chill	28	0	0	\$0	\$0
Excessive Heat	3	0	0	\$0	\$0
Extreme Cold/Wind Chill	8	0	0	\$0	\$0
Flash Flood	20	0	0	\$320,000	\$0
Flood	16	0	0	\$10,000	\$0
Frost/Freeze	6	0	0	\$0	\$0
Hail	29	0	0	\$0	\$0
Heat	17	0	0	\$0	\$0
Heavy Rain	1	0	0	\$0	\$0
Heavy Snow	13	0	0	\$0	\$0
High Wind	17	0	0	\$0	\$0
Lightning	1	0	0	\$50,000	\$0
Storm Surge/Tide	1	0	0	\$0	\$0
Strong Wind	22	0	0	\$48,000	\$4,000
Thunderstorm Wind	141	0	7	\$0	\$0
Tropical Storm	2	0	0	\$0	\$0
Winter Storm	28	0	0	\$0	\$0
Winter Weather	60	0	0	\$0	\$0
Total	415	0	7	\$428,000	\$4,000

Since 1954, Rensselaer County has been designated as eligible for at least one form of FEMA assistance in 16 Federally-declared major disasters and eight Federally-declared emergencies. Since the adoption of the 2011 HMP, Rensselaer County has been designated as eligible for at least one form of FEMA assistance in three of the state's 12 Federally-declared major disasters (2011 through 2018).

Rensselaer County Disaster Declarations, 2011-2018					
Declaration Year	Event Incident Period	Declaration Type	Disaster Type	Disaster Number	Rensselaer County Designation
2017	March 14-15, 2017	Major Disaster Declaration	Severe Winter Storm and Snowstorm	DR-4322	Declared for PA only
2011	September 7-11, 2011	Emergency Declaration	Tropical Storm Lee	EM-3341	Declared for PA Category B
2011	August 26, 2011 through September 5, 2011	Major Disaster Declaration	Hurricane Irene	DR-4020	Declared for PA and IA
2011	December 26-27, 2010	Major Disaster Declaration	Severe Winter Storm and Snowstorm	DR-1957	Declared for PA Category B

Source: FEMA, online at <https://www.fema.gov/disasters>, queried on July 11, 2019
 PA= FEMA's Public Assistance Program
 IA= FEMA's Individual Assistance Program
 Category B= FEMA's Public Assistance Program Category B (Emergency Protective Measures)

Some more recent notable events in the Town of North Greenbush since 2011 include:

August 28, 2011 – Irene

The remnants of Hurricane Irene brought heavy to extreme rainfall throughout Rensselaer County.

October 29-30, 2012 – Sandy

Rainfall in Rensselaer County was not excessively heavy and did not cause notable flooding, thanks to dry antecedent conditions. Wind gusts of 40 to 60 mph were common from the afternoon of the 29th until the early morning hours of the 30th.

June 30, 2017 to July 1, 2017 - Severe Storms and Flooding

Numerous strong to severe thunderstorms occurred across Rensselaer County. Thunderstorm winds caused damages throughout the county, downing trees and power lines, and heavy rains caused flooding in many areas of the county.

8.12.5 NATIONAL FLOOD INSURANCE PROGRAM SUMMARY

The Town of North Greenbush has participated in FEMA's National Flood Insurance program (NFIP) since June 18, 1980.

Total number of policies ¹ :	45
Insurance in force ² :	\$9,295,600
Total number of losses:	16
Total claims paid:	\$112,566
Repetitive Loss Properties:	0
Severe Repetitive Loss Properties:	0

The Town of North Greenbush provided the following NFIP Administrator Input in 2019, for inclusion in the 2019 HMP.

¹ Policies in Force from www.fema.gov on 02/21/19, data current as of 09/30/18.

² Insurance in Force from www.fema.gov on 02/21/19, data current as of 09/30/18.

Name: Michael Miner Title: Floodplain Manager/Floodplain Administrator/NFIP Coordinator
 Community: Town of North Greenbush Email and Phone: building@northgreenbush.org 518-283-2714



Worksheet 2 - NFIP

Note: This form should be filled out by your floodplain administrator. Submittals should be returned via email to Jay Wilson at jwilson@renco.com. Feel free to contact Anna Foley of AECOM if you have questions, at anna.foley@aecom.com. All communities participating in the National Flood Insurance Program (NFIP) provided FEMA with a floodplain management ordinance and a designated floodplain administrator as a prerequisite to enter the program. All participating communities must provide the information below. Please return a copy of your floodplain management ordinance to us with this submittal.

Adoption Date of your Current Floodplain Management Ordinance	Date of Entry into NFIP ¹	Position or Title of Your Jurisdiction's Designated Floodplain Manager/Administrator (may also be called NFIP Coordinator)	Is this person a Certified Floodplain Manager?	Is floodplain management an auxiliary function?	Is your community in good standing with the NFIP?		
3/26/1987	6/18/80	Building Inspector	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Provide an explanation of NFIP administration services (i.e., permit review, GIS, education or outreach, inspections, engineering capability, etc.):							
Building Permit review, Site Plan Review, Zoning and Planning Board actions, inspections, engineering report reviews							
Describe barriers to running an effective NFIP program in the community (if applicable):							
NFIP Maps are only a 1" = 400' scale and without tax maps overlaying flood maps it difficult to determine floodplain boundaries.							
When was most recent FEMA Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?*	Is a CAV or CAC scheduled or needed?	Does the current floodplain management ordinance exceed FEMA or State minimum requirements? If so, describe how.	Is training of staff regarding NFIP issues planned?	Does your community intend to continue to enforce the floodplain management requirements including regulating new construction in Special Flood Hazard Areas (SFHAs)?	Does your community participate in the CRS? If so, state your Class.	Does your community intend to continue its participation in the CRS program?	If your community is not currently participating in the CRS program, are you intending to initiate the process during the next planning cycle?
Unknown	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No* * Class _____	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
*Describe any outstanding compliance issues (i.e., current violations):							
No issues or violation.							

¹ Your date of entry into the NFIP can be found at: <http://www.fema.gov/cis/NY.html> (column "Reg-Emer Date").

Rensselaer County Multi-Jurisdictional Hazard Mitigation Plan Update – NFIP Worksheet NFIP-1

Name: Michael Miner Title: Floodplain Manager/Floodplain Administrator/NFIP Coordinator
 Representing: Town of North Greenbush Email and Phone: building@northgreenbush.org 518-283-2714



Provide an explanation of your local floodplain permitting process:

Determination of floodplain boundary prior to issuance of building permit. Follow floodplain development process as established in town code.

Does your community intend to continue floodplain identification and mapping services including any local requests for map updates?	Does your community intend to initiate/continue the buyouts of repetitive loss properties?	Does your community intend to commit staff or resources to improve local mapping or code administration in the future?	Does your community intend to provide local outreach to promote the sale of flood insurance?	Does your community intend to participate in RiskMAP meetings and planning initiatives?	Does your community intend to continue to implement structural improvements to mitigate against flooding - culverts, drainage basins, etc.?	Does your community intend to continue to implement home improvement programs designed to minimize basement flooding?	Does your community intend to continue to implement roadway improvements to reduce damage from future flooding events?	Does your community intend to implement plans and programs in coordination with a local or regional drainage/sewer authority?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does your community intend to adopt the new FEMA Advisory Base Flood Elevations?	As Floodplain Manager, did you (or your predecessor at the time) actively participate in the development of the initial Hazard Mitigation Plan?	As Floodplain Manager, are you actively participating in the development of this Hazard Mitigation Plan Update?	Have there been any changes to your community's local floodplain management program since the last version of the plan in 2011?					
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No					
* If you answered "yes", that there have been changes to your local program since 2009, please describe:								
Provide a description of your community assistance and monitoring activities:								
Provide education and town code info to home owners and developers to make them aware of the floodplain and development requirements.								
NFIP participating communities are required to update/revise their floodplain management ordinance to ensure that it complies with the latest FEMA regulations. Will your community continue to commit to this program requirement?				NFIP participating communities are also required to update/revise their floodplain management ordinance to be consistent with the latest FIRMs. Will your community continue to commit to this program requirement?				
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

Note: NFIP policy statistics by community are maintained at: <http://bsa.nfipstat.fema.gov/reports/1011.htm#NJT>
 NFIP claims data by community is maintained at: <http://bsa.nfipstat.fema.gov/reports/1040.htm#34>
 Information about structures at risk of flooding can be found in the current Hazard Mitigation Plan.
 All NFIP participating communities should encourage local residents to purchase and maintain flood insurance.

Rensselaer County Multi-Jurisdictional Hazard Mitigation Plan Update – NFIP Worksheet NFIP-2

8.12.6 ASSET IDENTIFICATION AND CHARACTERIZATION

An inventory of geo-referenced assets in Rensselaer County has been created in order to identify and characterize property and persons potentially exposed to the identified hazards. Section 3b of the plan presents the asset identification and characterization process in great detail. The following table presents an overview of assets in Rensselaer County³ and the subset of those assets that fall within the Town of North Greenbush.

³ The County totals are included here for readers to understand the proportion of countywide assets that lie within this municipality.

Asset Inventory																			
Jurisdiction	Improved Property (RCV ⁴)	Emergency Facilities					Critical Infrastructure and Utilities										Other Key Facilities		Historic and Cultural Resources
		Fire Stations	Police Stations	EMS / Ambulance Stations	Hospitals	Shelters ⁵	Wastewater Facilities	Water Treatment Facilities	Airports	Railroads (Passenger/ Freight Station)	Electric Power Facilities	Communications Facilities	Oil Facilities	Hazardous Materials Sites	Natural Gas Facilities	Ports	Schools	Residential Senior Care Facilities ⁶	
Rensselaer County	\$33,333,947,000	44	9	19	2	33	8	1	0	13	1	6	5	60	1	12	64	3	84
Town of North Greenbush	\$2,801,151,000	2	1	1	0	2	1	0	0	0	0	2	0	3	0	0	8	0	1

Rensselaer County	Population, Census 2010:	159,429
Town of North Greenbush	Population, Census 2010:	12,075
Rensselaer County	Vulnerable Population, Census 2010 (under 5 years, and over 64 years)	30,429
Town of North Greenbush	Vulnerable Population, Census 2010 (under 5 years, and over 64 years)	2,799

⁴ Replacement Cost Value

⁵ Specific shelter data is protected information and is not released to the public unless and until necessary during a disaster.

⁶ * As per the County Department of Economic Development and Planning, these figures only encompass the senior centers which are not residential facilities.

Exposure – Assets in the Floodplain

Land. Approximately four percent of the Town of North Greenbush’s land area is located in the 100-year floodplain.

Land in the 100-year Floodplain			
Municipality	Land Area of Municipality (Acres)	Land in the 100-year Floodplain (Acres)	Percent of Land in the 100-Year Floodplain (%)
North Greenbush, Town of	12,079	479	4%

Improved Property. Approximately five percent of improved property in the Town of North Greenbush is located in the 100-year floodplain.

Improved Property in the 100-year Floodplain			
Municipality	Replacement Cost Value (RCV) Structure and Contents (\$)	RCV in the 100-year Floodplain (\$)	Percent of RCV in the 100-Year Floodplain (%)
North Greenbush, Town of	\$2,801,151,000	\$134,711,130	5%

Population. Approximately three percent of the population of the Town of North Greenbush resides in the 100-year floodplain.

Population in the 100-Year Floodplain			
Municipality	Total Population (Census 2010)	Estimated Population in the 100 year Floodplain	Percent of Population in the 100 year Floodplain
North Greenbush, Town of	12,075	345	3%

Critical Facilities. The following critical facilities (emergency facilities, critical infrastructure and utilities, and other key facilities, as presented in Section 3b) are located in the floodplain in the Town of North Greenbush.

Critical Facilities in the Floodplain			
Municipality	Type of Facility	Name of Facility	Flood Zone ⁷
North Greenbush, Town of	WASTEWATER FACILITY	RENSELAER COUNTY SD#1 WWTP	X500

Historic and Cultural Resources. No listed historic or cultural resources are located in the floodplain in the Town of North Greenbush.

⁷ 100-year floodplain = A/AE/AO; 500-year floodplain = X500

8.12.7 POTENTIAL FUTURE DAMAGES

Estimated annual losses provided in this section are based on best available data, and the methodologies applied result in an approximation of risk. Loss estimates should be used to understand relative risk from hazards.

Uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties also result from approximations and simplifications that are necessary for a comprehensive analysis (i.e., incomplete inventories, demographics or economic parameters

The following table provides estimated average annual losses from HAZUS-MH 4.0 runs, where available. For hazards for which HAZUS modules are not available, historic damages have been distributed across municipalities based on their proportion of improved property. It is important to note that this table reflects estimates of average annual damages. For any hazard, individual event damages could be substantially (orders of magnitude) higher.

For the Town of North Greenbush, the hazard with the highest estimated average annual losses is flooding.

Summary of Annual Loss Estimates – Town of North Greenbush⁸

Municipality	Replacement Cost Value of Improvements (\$)	Extreme Temperatures	Hurricane/ Tropical Storm - Wind	Hurricane/ Tropical Storm – Wind + Flood	Lightning	Tornado	Wind	Winter Storm (Ice Storm/ Snow Storm)	Drought	Flood	Earthquake	Landslide	Wildfire
		NOAA NCEI, 1996-2018	HAZUS	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018	HAZUS	HAZUS	NOAA NCEI, 1996-2018	NOAA NCEI, 1996-2018
North Greenbush, Town of	\$2,801,151,000	\$118	\$933	\$7,257	\$901	\$39,820	\$10,086	\$2,827	\$0	\$128,850	\$7,910	\$0	\$8

⁸ * **It is important to note that this table reflects estimates of average annualized damages. For any hazard, individual event damages could be substantially higher.**

8.12.8 HAZARD RANKINGS AND KEY RISK FINDINGS

Hazard rankings for the Town of North Greenbush are provided in the table below. Hazard priorities are based on each hazard's likelihood of occurrence, potential consequences, relative risk and average annualized losses. Rows are shaded red for High Hazard Priority; yellow for Moderate Hazard Priority; and green for Low Hazard Priority.

Flooding is the highest priority hazard for the Town of North Greenbush.

Hazard Rankings – Town of North Greenbush					
Hazard	Future Probability	Potential Consequence	Relative Risk	Hazard Priority	Average Annualized Losses ⁹
Extreme Temperatures (Coldwave/ Heat Wave)	Low	Low	Low	Low	\$118
Hurricane/ Tropical Storm	Low	High	Moderate	Moderate	\$933 Wind; \$7,257 Wind + Flood
Lightning	High	Low	Low	Low	\$901
Tornado	Low	High	High	High	\$39,820
Wind	High	Low	High	High	\$10,086
Winter Storm (Ice Storm/Snow Storm)	High	Moderate	Moderate	Moderate	\$2,827
Drought	Low	High	Low	Low	\$0
Flood	High	High	High	High	\$128,850
Earthquake	Low	High	Moderate	Moderate	\$7,910
Landslide	High	Low	Moderate	Moderate	\$0
Wildfire	Low	Low	Low	Low	\$8

Key risk findings identified by the Town of North Greenbush JAT as representing the highest local priorities for mitigation are:

- Wynantskill Creek at Jack's Drive-In. Silt prone areas causing private property flooding, erosion, and water quality issues.
- Stormwater flooding on private/public property caused by 30-year old galvanized 30" culvert pipe at Douglas and Pine Streets.
- Stormwater Flooding ineffective infrastructure.
- Continued need to improve disaster preparedness and continuity of government operations.
- Flooding of property at Red Oak Lake due to stormwater.
- Silt buildup at Snyder's Lake is causing poor drainage, flooding and water quality issues.

⁹ Source: NOAA NCEI, except as noted. \$0 in average annualized losses had no damages recorded for events between 1996 and 2018. Actual annual damages are unquantifiable but higher.

- There is a need for improved Town coordination on prevalent management issues, floodplain map updates, and training and certification when necessary in accordance with federal and NYS MS4 regulations.
- Ensure that local comprehensive plans incorporate natural disaster mitigation techniques.

Mitigation projects to address these key risks are included as part of the Town’s overall hazard mitigation strategy.

8.12.9 OUTREACH TO THE PUBLIC AND OTHER STAKEHOLDERS

As part of this 2019 Plan Update, the Town of North Greenbush undertook various activities to: (a) alert the public and other stakeholders to the fact that the HMP Planning Committee was working to develop the update; and (b) provide the public and other stakeholders with a forum to ask questions and submit comments and suggestions on the process. Outreach activities undertaken by the Town of North Greenbush included:

Outreach Activities			
Date of Activity	Type of Activity	Activity Details	Lead Department and/or Staff Title Who Undertook Activity
[12/13/18]	[Town Board Meeting]	[Provided briefing to Elected/Appointed officials and meeting attendees at this public meeting on the hazard mitigation plan update process, etc.]	[Comptroller/Police Chief]
[1/7/19]	[Town Website Posting]	[Posted pertinent information concerning the Hazard Mitigation Update process and town commitment on the town website.]	[Comptroller]
[1/16/19]	[Discussion with City of Rensselaer Director of Planning]	[Discussed Hazard Mitigation and cross boundary stormwater drainage mitigation efforts taken by the town with development projects, etc.]	[Comptroller]
[1/22/19]	[Meeting with North Greenbush Library leadership.]	[Provided Library with Hazard Mitigation. Public Information materials and discussed emergency management planning and mitigation activities.]	[Comptroller]
[1/29/19]	[Discussion with RPI Tech Park and Town Website Posting]	[Discussion with RPI Tech Park Director on status of Hazard Mitigation project and any issues or concerns from the Park. Posted updated pertinent information (completed worksheets, meeting agenda, JAT info, etc.) on Town Website.]	[Comptroller]
[3/14/19]	[Discussion with Van Rensselaer Manor]	[Police Chief and Van Rensselaer Manor Executive Director discussed hazard mitigation and other emergency preparedness matters.]	[Police Chief]
[6/13/19]	[Town Board Meeting]	[Police Chief and Comptroller provided briefing at Town Board Meeting on the town hazard mitigation planning update.]	[Police Chief/Comptroller]

The Town of North Greenbush has received no comments to date as a result of its outreach activities.

8.12.10 CAPABILITY ASSESSMENT

This section describes the following capabilities of the local jurisdiction:

- Legal and regulatory capability;
- Administrative and technical capability;
- Fiscal capability;
- Community resiliency;
- Community political capability; and
- Community classification.

8.12.10.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Town of North Greenbush. The Town reviewed its responses from the 2011 HMP and has updated its prior feedback to reflect present-day conditions.

Legal and Regulatory Capability			
Regulatory Tools (Codes, Ordinances, Plans)	Do you have this? (Y or N)	Enforcement Authority	Code Citation (Section, Paragraph, Page Number, Date of Adoption)
a. Building code	Y	State building code enforced by Town	Town Code, Chapter 99, Sections 1 – 17, adopted 3/26/1987
b. Zoning ordinance	Y	Based on Town Comp Plan	Chapter 197, Adopted 1981
c. Subdivision ordinance or regulations	Y	Based on Town Comp Plan	Chapter 31, Adopted 10/10/1960
d. Special purpose ordinances (floodplain management, stormwater management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements)	Y	County can add layers	See a. above (Note – Floodplain Maps on file are dated June 18, 1980).
e. Growth management ordinances (also called “smart growth” or anti-sprawl programs)	Y	Incorporated into comp plan and subsequent	See c above
f. Site plan review requirements	Y	State SEQR	See c above
g. General, comprehensive or master plan	Y	State provides framework for plan	See c above
h. A capital improvements plan	Y		Part of the town Budget process
i. An economic development plan	Y	Town and County IDA	Town IDA, NYS Law Section 27.a
j. An emergency response plan	Y	Multiple Plans	Town CEM Plan

Legal and Regulatory Capability			
Regulatory Tools (Codes, Ordinances, Plans)	Do you have this? (Y or N)	Enforcement Authority	Code Citation (Section, Paragraph, Page Number, Date of Adoption)
k. A post-disaster recovery plan	Y	Working on updated Plan as part of "J"	Town CEM Plan
l. A post-disaster recovery ordinance	N		
m. Real estate disclosure requirements	N		
n. Other			

8.12.10.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Town of North Greenbush. The Town reviewed its responses from the 2011 HMP and has updated its prior feedback to reflect present-day conditions.

Administrative and Technical Capability		
Staff / Personnel Resources	Available (Y or N)	Department / Agency / Position
a. Planner(s) or engineer(s) with knowledge of land development and land management practices	Y	Building/Consulting Engineer
b. Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Building/Consulting Engineer
c. Planners or Engineer(s) with an understanding of natural and/or human-caused hazards	Y	Building/Consulting Engineer
d. Floodplain manager	Y*	Building
e. Surveyors	Y	On contract
f. Staff with education or expertise to assess the community's vulnerability to hazards	Y	Public Safety Commission, Hwy and Utilities Commission
g. Personnel skilled in GIS and/or HAZUS	N	Rely on County or Contractor
h. Scientists familiar with the hazards of the community	N	
i. Emergency manager	Y	Chief of Police
j. Grant writers	Y	On Contract
k. Staff with expertise or training in benefit/cost analysis	Y	Comptroller
*All communities participate in the National Flood Insurance Program; as such, they are required by the regulations to have an appointed floodplain manager.		

8.12.10.3 Fiscal Capability

The table below summarizes financial resources available to the Town of North Greenbush. The Town reviewed its responses from the 2011 HMP and has updated its prior feedback to reflect present-day conditions.

Fiscal Capability	
Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
a. Community Development Block Grants (CDBG)	Yes, but they have concluded
b. Capital improvements project funding	Yes
c. Authority to levy taxes for specific purposes	Yes
d. Fees for water, sewer, gas, or electric service	Yes
e. Impact fees for homebuyers or developers for new developments/homes	Yes
f. Incur debt through general obligation bonds	Yes
g. Incur debt through special tax and revenue bonds	Yes
h. Incur debt through private activity bonds	Yes
i. Withhold spending in hazard-prone areas	Yes
j. State mitigation grant programs	No
k. Other	

8.12.10.4 Overall Capabilities

The Town of North Greenbush's 2019 assessment of its overall capabilities to implement hazard mitigation strategies in each of the above categories, in addition to their local assessment of how these capabilities could be expanded and/or improved to reduce risk, is presented in the table below.

Overall Capabilities				
Overall legal and regulatory capability to implement hazard mitigation strategies	Overall technical capability to implement hazard mitigation strategies	Overall fiscal capability to implement hazard mitigation strategies	Overall administrative capability to implement hazard mitigation strategies	Community's willingness to enact policies and programs that reduce hazard vulnerabilities
High	Moderate	Low	Moderate	High
How these capabilities can be expanded and/or improved to reduce risk:				
The lack of dedicated resources and budget prevent further progress in these important areas. Following a Major Disaster Declaration the town would apply for eligible hazard mitigation funding.				

8.12.10.5 Community Classifications

The table below summarizes classifications for community program available to the Town of North Greenbush.

Community Classifications		
Program	Classification	Date Classified
Community Rating System (CRS) *	N/A	
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	
Public Protection	N/A	
Storm Ready	N/A	
FireWise	N/A	

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating

* CRS Ranking as of April 2019

The classifications listed above relate to the Town of North Greenbush's ability to provide effective services to lessen its vulnerability to the natural 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 1,000 feet of a creditable fire hydrant and is within five 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/>

8.12.11 PLAN FOR DISPLACED RESIDENTS

New York State requires that intermediate and long-term housing options must be available for relocating displaced residents to maintain post-disaster social and economic stability. Intermediate and long-term housing options for displaced residents was evaluated as part of the 2019 HMP Update. Additional information can be found in Appendix C.

8.12.12 PLAN FOR EVACUATION NEEDS AND SHELTERING

The Town of North Greenbush has an emergency response plan¹⁰. It has a working version post-disaster recovery plan but does not have a post-disaster recovery ordinance¹¹. Keeping the Town's Comprehensive Emergency Management Plan current is listed as an action item on the Town's mitigation strategy (initiative number NG-3). Rensselaer County has an existing Comprehensive Emergency Management Plan (CEMP) documenting the County's plan for evacuation and sheltering measures during hazard events. The Plan is posted online at: <http://www.rensco.com/wp-content/uploads/2019/07/Rensselaer-County-CEMP.pdf>. As part of this hazard mitigation plan update, the Rensselaer County reviewed their existing CEMP and determined that updates were necessary at this time. Updates to the CEMP are being completed at this time. Once finalized and approved, the County will post the updated CEMP at the same address and will follow procedures in its updated CEMP in all future disasters. The County BPS indicated that there are no designated evacuation routes.

Appendix B contains updated shelter data provided by the Red Cross in 2018. Shelter locations are not made public until facilities are actually opened for an event and therefore, pages of Appendix B that include shelter information are nonpublic. Since every possible shelter is not opened during every event, the data is not made public in order to ensure that individuals in need of shelter do not seek it at facilities which may remain closed during a particular event. The Town of North Greenbush has access to shelter data and will coordinate with the Red Cross as part of their standard operating procedures if and when a need is identified for local shelters to be opened in the community.

¹⁰ Source: Local Capability Assessment

¹¹ Source: Local Capability Assessment

8.12.13 FUTURE NEEDS - RISK/VULNERABILITY

The Town of North Greenbush has identified no future needs to better understand risk/vulnerability in the community.

8.12.14 PLAN INTEGRATION

For a community to succeed in reducing risk in the long term, the information and recommendations of the hazard mitigation plan must be integrated into day-to-day local government operations. Throughout the planning process, partnerships are formed between departments and agencies, and sustained actions between these partners will increase the community's resilience to disasters. "Plan integration" can be thought of as the process whereby a local government incorporates the mitigation plan findings and projects into other planning mechanisms (governance structures that are used to manage local land use development and community decision making).

It is the intention of the Town of North Greenbush to incorporate mitigation planning as an integral component of daily municipal operations. The balance of this subsection describes local accomplishments over the last planning cycle (2011-2019), and targeted activities for the next planning cycle (2019-2024).

Demonstration of Progress over the Last Planning Cycle (2011-2019) – The Town of North Greenbush undertook the following plan integration mechanisms over the last planning cycle:

- Issued a letter to each community department head to solicit their support and explore opportunities for integrating hazard mitigation planning objectives into daily activities.
- Worked with the Planning Department to educate them on the Hazard Mitigation Plan and encourage that on the next update of the master plan, general or comprehensive plan, hazard mitigation for natural hazards is addressed.
- Coordinated with the building department (via meeting with the code enforcement officer) to ensure that they have adopted and are enforcing the minimum standards established in the current State-adopted IBC.
- Having participated in the NFIP and only enforcing minimum requirements at the time of the first plan's adoption, coordinated with your Floodplain Administrator to determine if enforcement beyond FEMA minimum requirements would be prudent for the community.
- Community currently has a local zoning ordinance.
- Worked with the local zoning board to educate them on the Hazard Mitigation Plan and encourage consideration of low occupancy, low-density zoning in hazard areas, when practicable.]
- Revised job descriptions to include mitigation-related duties to further institutionalize mitigation.
- Revised capital or operating budgets to include a line item for mitigation project funding.

- Modified the local comprehensive plan to add a hazard element.
- Worked with the Department of Public Works to adopt more rigorous procedures for inspecting and cleaning debris from streams and ditches (i.e., more frequently).
- Worked with Planning Department has added hazard vulnerability to subdivision and site plan review criteria.
- Reached out to partner groups in the community (i.e., nonprofit organizations, businesses, etc.) to identify those who may be willing to donate goods or services and create a database of contact information and indicated goods/services.
- Actively sought citizen volunteers to help implement mitigation programs and activities.
- Worked with local library staff members to discuss the mitigation plan so they are well-versed in its purpose and understand where to direct interested parties for more information, to provide feedback, or to become involved.

Targeted Plan Integration Activities for the Next Planning Cycle (2019-2024) – The Town of North Greenbush plans to implement the following plan integration mechanisms into local government operations from this point forward through the next planning cycle:

- Issue a letter to each department head to solicit their support and explore opportunities for further integration of hazard mitigation into the daily activities of the community as a whole.
- Incorporate hazard mitigation for natural hazards in the next update of the master, general or comprehensive plan.
- Add a specific hazard mitigation element to the next update of the master, general or comprehensive plan.
- Adopt and enforce the minimum building standards established in the current State-adopted IBC (NY edition).
- Maintain community participation in FEMA's National Flood Insurance Program.
- Enforce codes and standards beyond FEMA minimum requirements.
- Join (or continue to maintain participation in) the NFIP's Community Rating System.
- Steer growth and development away from high risk locations by using the risk assessment from the hazard mitigation plan as a tool to monitor future updates of community land use plans, zoning and subdivision codes and the development review process.
- Modify work plans, policies or procedures to include hazard mitigation concepts/activities.
- Revise job descriptions to include mitigation-related duties to further institutionalize mitigation.
- Revise capital or operating budgets to include a line item for mitigation project funding.
- Issue directives to require departments/agencies in the community to carry out certain hazard mitigation activities.

- Add hazard vulnerability to subdivision and site plan review criteria.
- Perform inventories of historic sites in hazard areas in your community to identify where special treatment may be needed to protect them from specific natural hazards.
- Require the Department of Public Works to inspect and clean debris from streams and ditches more frequently.
- Add hazard vulnerability to subdivision and site plan review criteria.
- Perform inventories of historic sites in hazard areas in the community to identify where special treatment may be needed to protect them from specific natural hazards.
- Reach out to state agencies for assistance with natural hazard mitigation activities.
- Reach out to colleges and universities for technical assistance with natural hazard mitigation activities.
- Adopt (or continue to enforce) a local stormwater management plan/ordinance.
- Protect life and property in high hazard areas by limiting densities of new development.
- Increase resilience by limiting the extension of public infrastructure in high hazard areas.
- Reduce the vulnerability of future development in high hazard areas by reviewing development regulations and modifying where needed.
- Use the risk assessment to inform future updates of the community emergency operations plan, evacuation plan, and/or post disaster recovery plan.
- Implement hazard mitigation activities through existing plans and policies.
- Sponsor training on best practices for hazard mitigation for local government staff. (Note: this may be accomplished with other local governments.)

8.12.15 MITIGATION STRATEGY

This subsection sets forth the mitigation strategy for the Town of North Greenbush. It describes:

Progress on 2011 HMP Initiatives
Past Mitigation Accomplishments
Proposed 2019 HMP Mitigation Initiatives
Action Worksheets

8.12.15.1 Progress on 2011 HMP Initiatives

The following table was completed by the Town of North Greenbush HMP Committee Members. It summarizes the progress that was made on the local hazard mitigation initiatives that were set forth in the community's mitigation strategy from the initial HMP in 2011.

The Town of North Greenbush has reported no significant changes to local priorities since the

last version of this Plan. In 2018, the Town, with the aid of an engineering firm, conducted on-site surveys at over two dozen locations throughout the Town where stormwater flow issues (due to aged culverts, pipes, catch basins, drainage ditches, etc.) result in flooding of private and public property. Estimated costs for repair of these projects is upwards of \$200,000. The Town collects a limited amount of appropriation through the Property Tax Levy for the Town Highway Budget for stormwater retention pond maintenance in accordance with NYS MS4 regulations. Since these monies are not sufficient to repair all of these identified projects, the Town would apply for State or Federal Aid for its needed projects.

PROGRESS ON 2011 HAZARD MITIGATION PLAN INITIATIVES												
2011 HMP Initiative Number	Mitigation Initiative Description	2011 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
NG-1	Wetlands Restoration/Flood Mitigation. Location: Wynants Kill (behind Jack's Drive-In) at North Greenbush and Brunswick town line Project: Create fishing area which can be regularly dredged. This will take care of silt and debris flowing down Wynants Kill.	1 (High)	Flooding in North Greenbush, Brunswick, Troy	Highway Department and Town Board				x	Lack of funding has prevented needed work to complete this project. Also, such work will require permit from NYS Regulator Agency.	X		The project has not changed from the 2009 Plan. The estimated project cost is \$350,000.
NG-2	Storm Water Management Location: Between Douglas and Pine Streets in Wynantskill Project: Replace 30 year old galvanized culvert pipe where water flows downhill into 2 catch basins and into an 18" pipe going into the Wynants Kill.	2 (High)	Flooding	Highway Department and Town Board				x	Lack of funding has prevented needed work. The Town recently completed a less costly stormwater drainage project adjacent to this project area.	X		The project has not changed from the 2009 Plan. The estimated project cost is \$300,000.
NG-3	Disaster Preparedness Location: Town Hall Project: Improve disaster and storm readiness of Town Hall for Town government functioning, continuity of operations and emergency management operations.	2 (High)	Prepare Town government for emergency management and continuity of functions	Town Board				x	The Town Comprehensive Management Plan was revised in 2011 and is updated regularly. In coordination with the American Red Cross, the Town developed a procedure to utilize Town Hall as a Shelter in time of need. The Town also developed an emergency plan for incidents that could impact the Summer Camp Program.	X		On-going activity that will carry forward.
NG-4	Storm Water Management Location: Red Oak Lane and Miller Rd. in Defreestville Project: Existing 36" aluminum pipe is okay, but construction upstream at East Greenbush water tower has resulted in forcing more water downhill which floods homes built many years ago in flood plain. The water then flows into a 30" pipe and across Rt. 4, flooding it, and then into the Quackenderry Creek and Rensselaer. Need to mitigate water flow from above.	3-Medium	Flooding	Highway Department and Town Board		x			Rensselaer City received a hazard mitigation grant to remove debris from the ravine that has successfully managed water flow. The Town also required a developer for an approved but yet unbuilt 26 acre Commercial/Retail Mall to design a site drainage system that recycles stormwater.	X		The town completed a portion of this project on the lower end of Red Oak Lane at a cost of \$28,000. With the availability of additional funding of \$150,000 the Town would prepare a stormwater drainage engineering analysis to ascertain other necessary mitigation activities and perform corrective measures.
NG-5	Storm Water Management Location: Snyder's Lake Project: Remove silt from the lake which is being filled with sediment that creates drainage problems affecting downstream.	4-Medium	Flooding and preservation of natural resource	Highway Department and Town Board				x	Lack of funding has prevented needed work.	X		The project has not changed from the 2009 Plan. The estimated project costs are \$130,000.

PROGRESS ON 2011 HAZARD MITIGATION PLAN INITIATIVES												
2011 HMP Initiative Number	Mitigation Initiative Description	2011 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
NG-CL-1	Public awareness program on Hazards, Prevention, and Mitigation: County will maintain a hazard mitigation and mitigation planning web presence (local municipal web sites to link up to this site, if they haven't already done so); all participating jurisdictions to support preparation of a joint annual hazard mitigation and mitigation planning fact sheet and its distribution; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/tv announcements, etc. at the discretion of each jurisdiction (incorporating as much free information as possible from the FEMA Publications Warehouse and other appropriate sources). (public education)	High	All hazards	County-led action item. CPG Member Town Supervisor			x		Town website provides status of hazard mitigation planning activities and a link to the current County Multi-Jurisdictional Plan. Town regularly provides updates on the planning initiatives at monthly Town Board Meetings and has furnished the Town Public Library with copies of the hazard mitigation planning update documents.	X		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
NG-CL-2	Code update: Review existing local codes and ordinances against the identified hazards to determine whether there need to be any amendments to address identified hazards and, where a need is identified, modify/ amend the codes/ordinances as applicable. (prevention)	Medium	All hazards	County-led action item. CPG Member Town Supervisor			x		After careful review by Town Staff it was determined that the existing Town Zoning Ordinance, Building Code, Subdivision Regulations and Sanitary Code remain applicable.	X		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
NG-CL-3	Code enforcement: Enforcement of NYS and Local Building Codes with Continual CEO training. (prevention)	Medium	All hazards	County-led action item. CPG Member Town Supervisor			x		Locally administered on an ongoing basis; our community did not have a need to go to the county for support/training.	X		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
NG-CL-4	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review of draft plans by the County Planning Department (prevention)	High	All hazards	County-led action item. CPG Member Town Supervisor			x		The Town adopted a Comprehensive Emergency Management Plan using the State CEM Model Plan which incorporates natural disaster mitigation techniques. The Town did not require a courtesy review by the County Planning Department.	X		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.
NG-CL-5	Hold periodic workshops for municipalities regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation. (prevention)	Low	All hazards	County-led action item. CPG Member Town Supervisor			x		County led activity. Municipality attends meetings/workshops as offered by the County whenever municipal staff members have schedule availability.	X		County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well.

PROGRESS ON 2011 HAZARD MITIGATION PLAN INITIATIVES												
2011 HMP Initiative Number	Mitigation Initiative Description	2011 HMP Priority	Hazard(s) Mitigated	Lead and Support Agencies	Status				Status Details	Relevance		Relevance Details
					Completed	Initiated but Not Completed	Ongoing Type of Activity	Not Initiated		Still Relevant - Carry Forward to Updated Mitigation Strategy	No Longer Relevant - Omit from Updated Mitigation Strategy	
NG-NFIP-1	Update/revise floodplain management ordinance to comply with latest FEMA regulations.	3 (Medium)	Flooding	Town Board			x		Ordinance is dated 1987 and remains applicable.	X		Ongoing type of activity; will be carried forward with no changes.
NG-NFIP-3	Add/train sufficient members of staff to adequately enforce NFIP regulations/floodplain management ordinances.	2 (Medium)	Flooding	Town Board			x		Town Enforcement Staff maintain annual certifications.	X		Ongoing type of activity (with staffing changes); will be carried forward with no changes.
NG-NFIP-4	Update/revise floodplain management ordinance to be consistent with potential future new FIRMs	4 (Medium)	Flooding	Town Board			x		FEMA has not issued new FIRMs since the last hazard mitigation plan was prepared.	X		Ongoing type of activity; will be carried forward with no changes.
NG-NFIP-5	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	5 (Medium)	Flooding	Town Board				x	Not agency required; municipality opted not to require CFM certification.		X	
NG-NFIP-6	Join the Community Rating System (CRS)	1 (High)	Flooding	Town Board				x	Municipality opted not to enter CRS.		X	Municipality has reevaluated in 2019 and opted not to initiate the process.

8.12.15.2 Past Mitigation Accomplishments

NYS DHSES requires the documentation of local mitigation efforts and accomplishments since the previous hazard mitigation plan was prepared, regardless of funding source and regardless of whether the project was included in the prior plan. They note that the goal of this requirement is to provide a context for each jurisdiction's projects, act as a source of ideas for mitigation projects, and evaluate the accuracy of assumptions and engineering solutions to inform future projects, and to support future mitigation planning and its coordination with other planning, zoning, and environmental procedures within the jurisdiction.

The following table summarizes past mitigation accomplishments for the Town of North Greenbush, from the time the 2011 HMP was approved through its first update in 2019.

Past Mitigation Accomplishments					
Project Number	Project Name	Hazard(s) Addressed	Brief Summary of the Original Problem and the Solution (Project)	Evaluation of Success	
NG-1	Wynants Kill Creek Dredging with NYS DEC Permit	Waterway Flooding	Flooding caused by accumulation of silt at choke point in waterway. Town performs limited periodic dredging to remove silt.	Cost	\$5,000
				Level of Protection	Private property flooding
				Damages Avoided; Evidence of Success	Flooding was less than usual during the 2019 Spring very wet season.
NG-4	Red Oak Lane Stormwater Management	Flooding	Flooding caused by new upstream construction. Town repaired lower portion of drainage system.	Cost	\$28,000
				Level of Protection	Private property flooding
				Damages Avoided; Evidence of Success	Flooding was less than usual during the 2019 Spring very wet season.
NG-5	Snyder's Lake silt removal to improve drainage.	Flooding/Lake Pollution	Town performed limited silt removal to control flow in selected locations around the Lake.	Cost	\$10,000
				Level of Protection	Private property flooding
				Damages Avoided; Evidence of Success	Limited silt removal has improved flow control.
NG-8	Dodge Street Stormwater Repair	Flooding	Deterioration of old stormwater infrastructure was replaced. Mitigation Projected completed 4/2019.	Cost	\$10,000
				Level of Protection	Road undermining and property flooding
				Damages Avoided; Evidence of Success	Completed project successfully channeled water without property or road flooding.

8.12.15.3 Proposed 2019 HMP Mitigation Initiatives

The process for selection and prioritization of mitigation actions is described in greater detail in Section 5 of the main text. The outcomes of that overall process are summarized here.

This plan proposes the actions determined to be the most appropriate for the resources and capabilities of the community based on the experience of local officials, with input from the public and other stakeholders. The relatively large number of flood mitigation actions reflects the fact that flooding is the hazard of greatest concern. Actions determined to be appropriate for the plan were reviewed during public and committee meetings and there was consensus that those intended to mitigate the effects of flooding should be the highest priorities for most communities. As with the 2011 Plan, this 2019 Plan Update includes a series of County-led initiatives with municipal participation to address a wider range of hazards. In addition, each local mitigation strategy proposes actions reflecting the commitment of the County and local jurisdictions to compliance with requirements of the NFIP. Potential actions were reviewed relative to potential financial as well as administrative and legal costs and the degree to which they would be endorsed by the public. Potential actions were reviewed during the meetings relative to their potential benefit of effectiveness in saving lives, protecting the natural environment, and reducing disruption and damage. Actions selected by each jurisdiction include activities to protect existing and future structures and infrastructure and enhance community resilience.

Part of enhancing community resilience involves adapting to a changing climate. In accordance with NYS Mitigation Planning Standard 9, plans developed with NYS DHSES-administered funds must include information on climate change as part of the hazard vulnerability analysis and contain strategies/projects to address increased vulnerability that may result from climate change. This requirement was established to encourage jurisdictions to plan for and accommodate climate change and sea level rise. By developing mitigating strategies and/or projects for hazards that are exacerbated by climate change, jurisdictions will better protect residents, avoid, or reduce damage to property and public infrastructure, and reduce personal hardship. In accordance with this State Standard, previous sections of this plan have presented information on how climate change may affect jurisdictional vulnerability or increased frequency of occurrence and/or severity in exposure to flooding, wildfire, drought, and extreme temperatures. Climate change is addressed by mitigating the various hazards that it exacerbates. Rensselaer County and its communities have proposed a range of hazard mitigation initiatives to address their highest hazards including those hazards that are exacerbated by a changing climate. Additionally, as discussed further in the main text of this plan in Section 5, under New York State's Climate Smart Communities (CSC) program, the Town of North Greenbush is a Registered CSC and has passed a resolution adopting the CSC pledge which acknowledges climate change and documents the City's commitment to take steps to reduce its impacts

Proposed 2019 HMP Mitigation Initiatives for Town of North Greenbush are shown in the following table. These include both new initiatives and initiatives that were carried forward from the 2011 HMP.

PROPOSED 2019 HMP MITIGATION INITIATIVES TOWN OF NORTH GREENBUSH

Initiative Number	Initiative Name	HMP Goal(s)/ Objective(s) Being Met	Hazard(s) to be Mitigated	Description of the Problem	Description of the Solution	CF ¹² ?	EHP ¹³ Issues?	Estimated Timeline	Project Lead (include relevant Department and Position Title)	Estimated Costs	Estimated Benefits	Potential Funding Sources ¹⁴	Priority ¹⁵	Action Worksheet Provided? ¹⁶
* NOTE: Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater.														
NG-1	Wetlands Restoration - Wynantskill Creek Wetlands Restoration @ Jack's Drive-in. Create public fishing access area which can be regularly dredged which will abate silt buildup.	Y	Flooding	Silt prone areas causing private property flooding and Lake water quality issues	Dredge waterway and create town public fishing area	N	N	6 months	Town Board/Highway Department/Highway Superintendent	\$350,000	Abate silt and debris that is causing flooding	State or Federal Aid	H	Y
NG-2	Stormwater Management - Douglas and Pine Street's to replace 30 year old galvanized culvert pipe.	Y	Flooding	Stormwater Flooding ineffective infrastructure	Replace 30 year old galvanized culvert pipe	N	N	6 months	Town Board/Highway Department/Highway Superintendent	\$300,000	Reduce property damage flooding	State or Federal Aid	H	Y
NG-3	Disaster Preparedness - Continue to improve disaster preparedness and continuity of government operations	Y	Enhance Readiness	Ensure Comprehensive Emergency Management Plan is up to date, and staff are cognizant of emergency duties	Review and update CEM as necessary and coordinate with County and other public and private entities	Y	N	Ongoing	Town Board and all Town Staff	\$25,000	Enhance Readiness, Response and Recovery requirements	Town	M	N
NG-4	Stormwater Management - Red Oak Lane stormwater drainage engineering analysis to repair/improve upper drainage which is causing flooding to private property.	Y	Flooding	Property flooding due to aged infrastructure	Retain services of Engineer Firm to prepare stormwater analysis and recommendations to upgrade infrastructure	N	N	12 months	Town Board/Highway Department/Highway Superintendent	\$150,000	Reduce property flooding	State of Federal Aid	M	N
NG-5	Stormwater Management - Snyder's Lake to remove silt build-up from the Lake causing flooding	Y	Flooding	Silt build-up is causing poor drainage, flooding and water quality issues	Remove silt from Lake in identified flood prone areas	N	N	12 months	Highway Department/Highway Superintendent	\$130,000	Reduce property flooding	State or Federal Aid	H	N
NG-6 (new)	Establish Town Stormwater Committee	Y	Flooding	Coordinate prevalent management issues, floodplain map updates, and training and certification when necessary in accordance with federal and NYS MS4 regulations	Monitor on-going projects, inter-municipal coordination, enhance community public awareness	Y	Y	Ongoing	Town Board/Building Department/Building Inspector	N/A	Identify and abate property flooding	Town	M	N

¹² CF – Critical Facility. Please respond “Y” (yes) if the project’s purpose is to protect a critical facility, or “N” (no) if not.

¹³ EHP – Environmental or Historic Preservation. Please respond “Y” (yes) if the project is expected to have environmental and/or historic preservation issues, or “N” (no) if not.

¹⁴ Potential Funding Sources – A list of Federal and State sources of funding for hazard mitigation projects can be found in the latest NYS Hazard Mitigation Plan online at <https://mitigateny.avilabs.org/capabilities/administerfunding>. Jurisdictions should identify additional funding opportunities you may be aware of that are not on the state list.

¹⁵ Priority – See “Prioritization Methodology” on the next page.

¹⁶ Action Worksheet Provided. Please respond “Y” (yes) if you have filled out a detailed Action Worksheet, or “N” (no) if not. NYS DHSES State Standard 7 recommends that further consideration be given to all proposed actions by completing a NYS DHSES Action Worksheet, the State requires completion of a minimum of two NYS DHSES Action Worksheets for the jurisdiction’s highest priority projects. For jurisdictions containing a Special Flood Hazard Area, at least one of these Action Worksheets must be for a project that addresses flooding. Action Worksheets have been prepared for a minimum of two proposed mitigation initiatives. Action Worksheets are included at the end of this section, following the prioritization methodology.

PROPOSED 2019 HMP MITIGATION INITIATIVES TOWN OF NORTH GREENBUSH

Initiative Number	Initiative Name	HMP Goal(s)/ Objective(s) Being Met	Hazard(s) to be Mitigated	Description of the Problem	Description of the Solution	CF ¹² ?	EHP ¹³ Issues?	Estimated Timeline	Project Lead (include relevant Department and Position Title)	Estimated Costs	Estimated Benefits	Potential Funding Sources ¹⁴	Priority ¹⁵	Action Worksheet Provided? ¹⁶
* NOTE: Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater.														
NG-CL-1	Public awareness program on Hazards, Prevention and Mitigation. County will maintain a mitigation planning web presence to support joint annual hazard mitigation requirements, assist with periodic meetings and providing public information support incorporating FEMA publications and other appropriate sources	Y	All Hazards	Enhance hazard mitigation activities	County Coordinated action team for plan update and public awareness	Y	Y	Ongoing	County/Town Board/Building Department/Building Inspector	N/A	Enhance readiness, response and recovery efforts	County/Town	M	N
NG-CL-2	Code Update: Ensure existing local codes and ordinances are current to address identified hazards	Y	All Hazards	Maintaining Codes and Ordinances to augment town emergency management requirements	Existing codes and ordinances remain applicable and will continue to be reviewed in coordination with County	Y	Y	Ongoing	Town Board/Building Department/Building Inspector	N/A	Enhance readiness, response and recovery	Town	M	N
NG-CL-3	Attend periodic workshops and training sessions for municipalities regarding planning and zoning issues related to hazard mitigation and maintain certifications for enforcement	Y	All Hazards	Ensure currency of planning and zoning to enhance hazard mitigation	Town will continue to attend all relevant County, etc. workshops and training sessions	Y	Y	Ongoing	Town Board/Building Department/Building Inspector	N/A	Remain current on issue and solution	County/Town	L	N
NG-CL-4	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques thru a courtesy review of draft plans by County Planning Department (prevention)	Y	All Hazards	Ensure comprehensive plans are consistent with mitigation priorities	Town will continue to participate in County-Led effort	Y	Y	Ongoing	Town Board/Building Department/Building Inspector	N/A	Reduce property flooding and related damages	County/Town	H	N
NG-CL-5	Hold periodic workshops for municipalities regarding zoning and planning issues that arise for natural hazards and mitigation	Y	All Hazards	Ensure town codes are consistent with mitigation priorities	Town will continue to participate in County-Led effort	Y	Y	Ongoing	Town Board/Building Department/Building Inspector	N/A	Reduce property flooding and related damages	County/Town	L	N
NG-NFIP-1	Update floodplain management ordinance to comply with latest FEMA regulations	Y	Flooding	Ensure ordinance is applicable to floodplain regulations	Town will update Town ordinance as necessary when applicable	Y	Y	Ongoing	Town Board/Supervisor	N/A	Reduce property flooding and related damages	Town	M	N
NG-NFIP-3	Add/Train sufficient members of staff to adequately enforce NFIP regulations and floodplain management ordinance	Y	Flooding	Ensure staff are adequately on current regulations	Town will continue to ensure staff receive appropriate training and maintain annual certification	Y	Y	Ongoing	Town Board/Supervisor	N/A	Reduce property flooding and related damages	Town	M	N
NG-NFIP-4	Update/Revise floodplain management ordinance to be consistent with new FIRM's	Y	Flooding	Maintain currency with ordinance to FIRM's	Town will ensure ordinance is current	Y	Y	Ongoing	Town Board/Building Department/Building Inspector	N/A	Reduce property flooding and related damages	Town	M	N

Prioritization Methodology for Proposed 2019 HMP Mitigation Initiatives

To prioritize its mitigation initiatives, the community established a methodology to take into account several key factors. Priorities were determined by a qualitative prioritization process established by the community. A higher priority was assigned to projects where: the life/safety risk of taking no action was deemed to be unacceptably high; the project addresses one of the community's highest hazards and/or key risks; benefits were projected to equal or exceed project costs; critical facilities or key local assets were being protected; funding and staff resources were deemed to be sufficient and/or accessible for project implementation; negative impacts were not anticipated on environmental and/or historic resources or any segment of the population; and/or where there was overall support for the project from the local community (government officials, public, and stakeholders).

PRIORITIZATION METHODOLOGY FOR PROPOSED 2019 HMP MITIGATION INITIATIVES TOWN OF NORTH GREENBUSH														Priority
Initiative Number	Initiative Name	Hazard(s) Addressed	Is the life/safety risk of taking no action deemed to be unacceptably high?	Does the project address one of the community's highest hazards and/or key risks?	Benefits	Costs	Are the project's benefits estimated to equal or exceed its costs?	Are critical facilities or key local assets being protected by the project?	Are funding resources sufficient and/or accessible for project implementation?	Are staff resources sufficient or available for project implementation?	Are negative impacts anticipated on environmental resources?	Are negative impacts anticipated on historic resources?	Are negative impacts anticipated on any segment of the population?	
NG-1	Wetlands Restoration - Wynantskill Creek Wetlands Restoration @ Jack's Drive-in Project	Waterway/Wetlands Flooding	N	Y	Prevent property damage	\$350,000	Exceed	N	N	N	N	N	N	H
NG-2	Stormwater Management - Douglas and Pine Streets Project	Stormwater Flooding	N	Y	Prevent property damage	\$300,000	Exceed	N	N	Y	N	N	N	H
NG-3	Disaster Preparedness - Continue to improve disaster preparedness and continuity of government	All Hazards	Y	Y	Improve readiness, response and recovery	N/A	N/A	N/A	Y	Y	N	N	N	M
NG-4	Stormwater Management - Red Oak Lane Project	Stormwater Flooding	N	Y	Prevent property damage	\$150,000	Exceed	N	N	N	N	N	N	M
NG-5	Stormwater Management - Snyder's Lake Project	Stormwater Management	N	Y	Prevent property damage	\$130,000	Exceed	N/A	N	N	N	N	N	H
NG-6	Establish Town Stormwater Committee	Stormwater Flooding	N	Y	Prevent property damage	N/A	N/A	N/A	Y	Y	N	N	N	M
NG-CL-1	Public Awareness Program, etc.	All Hazards	N	N	Enhance, readiness, response and recovery	N/A	N/A	N/A	Y	Y	N	N	N	M
NG-CL-2	Maintain Code Update	All Hazards	N	Y	Enhance readiness, response and recovery	N/A	N/A	N/A	Y	Y	N	N	N	M
NG-CL-3	Attend workshops and training	All Hazards	N	Y	Enhance readiness, response and recovery	N/A	N/A	N/A	Y	Y	N	N	N	L

NG-CL-4	Ensure plans incorporate natural disaster hazard mitigation techniques thru review by County	All Hazards	Y	Y	Enhance readiness, response and recovery	N/A	N/A	Y	Y	Y	N	Y	Y	M
NG-CL-5	Periodic Workshops for zoning and planning issues	All Hazards	Y	Y	Enhance readiness, response and recovery	N/A	N/A	Y	Y	Y	N	Y	Y	M
NG-NFIP-1	Update Floodplain ordinance to FEMA regulations	Flooding	N	N	Enhance readiness, response and recovery	N/A	N/A	Y	Y	Y	Y	Y	Y	M
NG-NFIP-3	Add/Train staff to enforce NFIP and floodplain regulations	Flooding	N	N	Enhance readiness, response and recovery	N/A	N/A	Y	Y	Y	Y	Y	Y	M
NG-NFIP-4	Revise Floodplain ordinance to FIRM's	Flooding	N	N	Enhance readiness, response and recovery	N/A	N/A	Y	Y	Y	Y	Y	Y	M

Action Worksheets

NYS DHSES State Standard 7 recommends that further consideration be given to all proposed actions by completing a NYS DHSES Action Worksheet, the State requires completion of a minimum of two NYS DHSES Action Worksheets for the jurisdiction's highest priority projects. Furthermore, for jurisdictions containing a Special Flood Hazard Area, at least one of these Action Worksheets must be for a project that addresses flooding.

Action Worksheets prepared by the Town of North Greenbush are included on the following pages.

Section 8.12 - Jurisdictional Annex, Town of North Greenbush

NYS DHSES Action Worksheet			
Project Name:	Wetlands Restoration - Wynantskill Creek Wetlands Restoration and Public Fishing Access @ Jack's Drive-in		
Project Number:	Town of North Greenbush NG-1		
Risk / Vulnerability			
Hazard of Concern:	Waterway/Wetlands Flooding		
Description of the Problem:	Silt prone areas along Creek causing private property flooding, erosion and water quality issues		
Action or Project Intended for Implementation			
Description of the Solution:	Dredge waterway and create Town public fishing area		
Is this project related to a Critical Facility?	Yes * <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
* Projects related to critical facilities must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater.			
Level of Protection:	100 Year Flood	Estimated Benefits (losses avoided):	Flooding, soil erosion, sediment build up and water quality issues within Creek and establish public fishing access which can be easily dredged as needed
Useful Life:	50+ Years		
Estimated Cost:	\$350,000		
Plan for Implementation			
Prioritization:	H	Desired Timeframe for Implementation:	2020
Estimated Time Required for Project Implementation:	6 Months	Potential Funding Sources:	FEMA Hazard Mitigation Grant Program
Responsible Party: (Department/Organization)	Town Board/Highway Department	Local Planning Mechanisms to be Used in Implementation, if any:	Engineering Assessment and project proposal
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Will result in continued flooding
	Dredge Waterway	\$300,000	Unlikely to obtain DEC permit
	Prepare phased project proposal	\$5,000	Completed proposal ready when funding becomes available
Progress Report (this section to be completed at next plan update-do not fill in now)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

Section 8.12 - Jurisdictional Annex, Town of North Greenbush

NYS DHSES Action Worksheet			
Project Name:	Stormwater Management - Douglas and Pine Streets		
Project Number:	Town of North Greenbush NG-2		
Risk / Vulnerability			
Hazard of Concern:	Stormwater flooding on private/public property		
Description of the Problem:	Stormwater Flooding caused by 30 year old galvanized 30" culvert pipe		
Action or Project Intended for Implementation			
Description of the Solution:	Replace 30 year old galvanized culvert pipe which channels stormwater into 2 culverts.		
Is this project related to a Critical Facility?	Yes * <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
* Projects related to critical facilities must intend to protect to the 500-year flood event or the actual worst damage scenario, whichever is greater.			
Level of Protection:	100 Year Flood	Estimated Benefits (losses avoided):	Private/Public property flood damage
Useful Life:	50+ Years		
Estimated Cost:	\$300,000		
Plan for Implementation			
Prioritization:	H	Desired Timeframe for Implementation:	2020
Estimated Time Required for Project Implementation:	6 Months	Potential Funding Sources:	FEMA Hazard Mitigation Grant Program
Responsible Party: (Department/ Organization)	Town Board/Town Highway Department	Local Planning Mechanisms to be Used in Implementation, if any:	Engineering Assessment
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Continued flooding
	Phased project repair	\$100,000	Not an effective solution
	Prepare engineering assessment for project	\$10,000	Result in a plan of action
Progress Report (this section to be completed at next plan update-do not fill in now)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			