

8.16 - Jurisdictional Annex, City of Rensselaer

This section presents the jurisdictional annex for the City of Rensselaer. 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.

8.16.1 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: Jeanna Fritz Title: Floodplain Administrator Address: 62 Washington Street, Rensselaer, NY 12144 Phone Number: 518-465-1693 E-mail Address: Jeanna.fritz@rensselaerny.gov | | | Name: Mark Hendricks Title: Engineering Aide Address: 62 Washington Street, Rensselaer, NY 12144 Phone Number: 518-465-1693 E-mail Address: mark.hendricks@rensselaerny.gov | | | |
| Jurisdictional Assessment Team Members | | | | | | |
| Local Jurisdiction Role/Position | Name | Email | Phone | Date of Invitation | Method of Invitation | Agreed to participate? |
| Land Use/Community Planner | Charles Moore | charles.moore@rensselaerny.gov | 518-465-1693 | 1/3/2019 | meeting | Y |
| Emergency Manager | Rich Mooney | rich.mooney@rensselaerny.gov | 518-462-9511 | 1/3/2019 | e-mail | Y |
| Floodplain Manager/Administrator | Jeanna Fritz | jeanna.fritz@rensselaerny.gov | 518-465-1693 | 2/14/2019 | meeting | Y |
| Public Works Director / City Engineer | Bill Smart | bill.smart@rensselaerny.gov | 518-694-3968 | 1/3/2019 | meeting | Y |
| Building Code Official | Jeanna Fritz | jeanna.fritz@rensselaerny.gov | 518-465-1693 | 2/14/2019 | meeting | Y |
| Fiscal/Budget Officer | Joann Johnson | joann.johnson@rensselaerny.gov | 518-694-7937 | 2/14/2019 | meeting | Y |
| Manager/Administrator | Steve Springer | steve.springer@rensselaerny.gov | 518-462-5512 | 1/3/2019 | meeting | Y |
| Elected Officials | Rich Mooney | rich.mooney@rensselaerny.gov | 518-462-9511 | 1/3/2019 | e-mail | Y |
| Local Hospital | n/a | | | | | |
| Major University | n/a | | | | | |
| Significant Business | AMRI | alliot.hagen@amriglobal.com | 518-433-7964 | 2/19/2019 | e-mail | Y |
| Neighboring County 1 | Richard Lajoy (City of Albany) | rlajoy@albanyny.gov | 518-434-5995 | 2/20/2020 | e-mail/Phone | Y |
| Neighboring County 2 | n/a | | | | | |
| Neighboring County 3 | n/a | | | | | |
| Neighboring County 4 | n/a | | | | | |
| Tribal Group/Nation | n/a | | | | | |

8.16.2 JURISDICTION PROFILE

8.16.2.1 Location and Land Area

The City of Rensselaer is located in west Rensselaer County, in the eastern part of New York State. It shares a border with North Greenbush to the north; East Greenbush to the south; North and East Greenbush to the east; 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 City of Rensselaer has a total area of 3.50 square miles (9.08 km²), of which 3.17 square miles (8.21 km²) is land and 0.33 square miles (0.87 km²) is water.

8.16.2.2 Population

According to the 2010 U.S. Census Bureau's American Community Survey 5-Year Estimates, the population of City of Rensselaer is estimated to be 9,392 persons.

8.16.2.3 Demographics

Of a total area of 3.33 square miles (2010 Census data), the land area is 3.01 square miles and the population per square mile is 2,579.2 persons.

Of the total population, there are 92.7 males per 100 females (all ages). 20.2% of the population are persons under 18 years, and 12.6% 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 566, or 6.5%, of which 49.3% 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, 80.8% are high school graduates or higher, and 15.4% 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 4,376 total households and 2.14 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 9 or 0.1 % overall, with 0 (0.0%) institutionalized and 9 (0.1%) 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 \$49,773; the per capita income in past 12 months (2017) was \$29,622; and the percentage of persons in poverty was 15.3%. 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 15.1%, and percentage of people with a disability over age 65 years is 34.2%. The total percentage of persons (civilian, noninstitutionalized) without health insurance is 6.4%. 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.

8.16.2.4 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.

City of Rensselaer was at one time was Three Villages: Greenbush, East Albany and Bath. The Dutch claimed the land in 1609 based on Henry Hudson's exploration of the Hudson River. Settlement occurred at least as early as 1628. By 1642 there was a brewery and many farms, also a ferry was established by Hendrick Albertsen running from the mouth of Beaver Creek in Beverwyck (Albany) to the future City of Rensselaer. Greenbush (originally t'Greyn Bos in Dutch) was the earliest settlement from Dutch times, the hamlet of East Albany was part of the village of Greenbush, and Bath (also Bath-on-Hudson), which was laid out in 1795 and incorporated as a village prior to 1874. In 1897, Greenbush was chartered as a city, its name was changed to Rensselaer, and its limits were extended in 1902 by the annexation of the village of Bath and the western part of the town of East Greenbush.

8.16.2.5 Governing Body Format

The Rensselaer Common Council represents the residents of the City of Rensselaer as the legislative body responsible for setting the governing policies of the city. The Council adopts the City budget and passes laws, policies and regulations that govern the City. It is made up of six elected officials, one representing each ward, and is chaired by the Common Council President, who is elected citywide. Its leadership includes the President Pro Tempore and Majority Leader. The Council works cooperatively with the Mayor and the City administration to ensure that tax dollars are responsibly spent and that all residents have access to the services and programs that make urban living safe, affordable and desirable.

8.16.2.6 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 City of Rensselaer reviewed and updated its prior feedback to reflect current conditions in the community as of early 2019.

The City of Rensselaer is an older, built-out city. The only large tracts of developable land exist along the Hudson River waterfront. The City of Rensselaer noted four key areas of major new development taking place, or planned, for the next five years in the municipality. Planned development has begun in Delaet's Landing. Master Plan for development in Killean's Landing is completed and City is looking for developer. A connecting pedestrian/bike trail from Delaet's to Killean's Landing is in final design review and construction is expected to begin in 2019. Details are provided in the table below.

| 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 |
| Delaet's Landing | Primarily Residential | Not Determined | 555 Broadway | 145.52-1-1.1 | Floodplain | Initial apartment bldg. near completion |
| Killean's Landing | Mixed Used | Not Determined | N/A | 143.28-1-1.1 to 133.-3-1 | Floodplain | City Seeking Developer for ... |
| Bath Springs | Commercial | 8 | 2 Forbes Ave | 133.-3-7 | Floodplain | Rehabilitation of Existing textile plant buildings |
| Riverfront Trail | Public | 0 | N/A | 143.44-1 to 133.69-1-3 | Floodplain | Public Bike and Pedestrian Trail along riverfront |

The City of Rensselaer enforces local laws to protect new development from the effects of natural hazards. They include Rensselaer Codes: 101:1 NYS Fire Prevention and Building Code, 105:1-17 Flood Damage Prevention, 145:2 Stormwater Management (F-Watercourse Management, G-Flood Control), 179 Zoning (-9 Flood hazard zones, -26 & 27 Development near streams and Wetlands, -37 to 47 Site Plan Review, and 81 Subdivision Design Standards.

8.16.3 HAZARD IDENTIFICATION

The following hazards represent those that were deemed to be significant hazards of concern for the City of Rensselaer:

| Profiled Hazards in the City of Rensselaer | | | | | | | | | | | | | |
|--|--|------------------------------|-----------|---------|------|--------------|--------------------|-----------------------|--------------------------|----------------------|------------|------------------------|-----------------------|
| 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 | | | |
| Rensselaer, City 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.

8.16.4 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 City of Rensselaer 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 24, 2013 – Thunderstorm Winds

A National Weather Service storm survey team determined that straight line winds (microburst) impacted the City of Rensselaer. Based on the damage assessment, mainly trees, the team estimated the maximum wind speeds at 90 to 100 miles per hour. Several trees fell on homes, causing minor structural damage. One of trees fell on a porch resulting in minor injuries to a man.

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

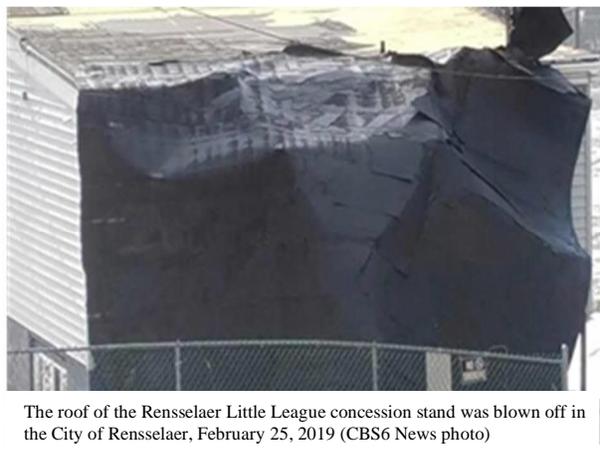
Numerous strong to severe thunderstorms occurred across Rensselaer County. Thunderstorm winds caused damages throughout the county, downing trees and power lines, and heavy rains caused flooding in many areas of the county.

February 26, 2019

Wind gusts in excess of 50 mph were common across the area, with several sites recording gusts in excess of 60 mph. Numerous power outages and downed trees occurred in the Capital District as a result of the winds, and some structural damage to barns and houses was reported as well. In the City of Rensselaer, part of a concession stand roof blew off at the Rensselaer Little League Field, and bricks were also reportedly blown off the side of an auto parts store.



Bricks were blown off of the side of an auto parts store in the City of Rensselaer, February 25, 2019 (CBS6 News photo)



The roof of the Rensselaer Little League concession stand was blown off in the City of Rensselaer, February 25, 2019 (CBS6 News photo)

8.16.5 NATIONAL FLOOD INSURANCE PROGRAM SUMMARY

The City of Rensselaer has participated in FEMA's National Flood Insurance program since March 18, 1980.

- Total number of policies¹: 113
- Insurance in force²: \$16,591,400
- Total number of losses: 64
- Total claims paid: \$382,194
- Repetitive Loss Properties: 6
- Severe Repetitive Loss Properties: 0

The City of Rensselaer 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.

Section 8.16 - Jurisdictional Annex, City of Rensselaer

Name: Mark Hendricks Title: Engineering Aide
 Community: City of Rensselaer Email and Phone: mark.hendricks@rensselaer.ny.gov 518-465-1693



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@rensco.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? | | |
|--|--------------------------------------|--|---|---|--|--|--|
| 1987 | 3/18/80 | Building and Zoning Administrator | [] Yes [X] No | [X] Yes [] No | [X] Yes [] No | | |
| Provide an explanation of NFIP administration services (i.e., permit review, GIS, education or outreach, inspections, engineering capability, etc.): | | | | | | | |
| Permit generation, review, building inspections. Maintain mapping, answer questions and assist residents with questions regarding floodplain, FIRMS, Flood Insurance program | | | | | | | |
| Describe barriers to running an effective NFIP program in the community (if applicable): | | | | | | | |
| There are no barriers, but training, procedures and coordination could be improved. | | | | | | | |
| 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? |
| 2011? | [X] Yes [] No | [X] Yes [] No | [X] Yes [] No | [X] Yes [] No | [] Yes* [X] No * Class | [] Yes [] No | [X] Yes [] No |
| *Describe any outstanding compliance issues (i.e., current violations): | | | | | | | |
| None known | | | | | | | |

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: Mark Hendricks Title: Engineering Aide
 Representing: City of Rensselaer Email and Phone: mark.hendricks@rensselaer.ny.gov 518-465-1693



Provide an explanation of your local floodplain permitting process:

Per sections 179-26 and 27 and development that will be within a floodplain must go through special use permit review, this entails a review by the City Engineer and Planning Dept, then public meeting with the Planning Department, which includes public comment of abutting property owners.

| 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? |
|--|--|---|--|---|---|---|--|---|
| [X] Yes [] No | [] Yes [X] No | [X] Yes [] No | [X] Yes [] No | [] Yes [X] No | [X] Yes [] No | [X] Yes [] No | [X] Yes [] No | [X] Yes [] 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? | | |
| [X] Yes [] No | | [] Yes [X] No | | [X] Yes [] No | | [] Yes * [X] 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: | | | | | | | | |
| Monitoring and assistance is conducted through the Building and Planning Department, Department fields between 5 to 10 Floodplain or insurance questions per year, every effort is made to assist, to include materials or printing and dissemination of FIRMettes . | | | | | | | | |
| 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? | | | | |
| [X] Yes [] No | | | | [X] Yes [] 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

8.16.6 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 City of Rensselaer.

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 |
| City of Rensselaer | \$1,588,138,000 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 3 | 1 | 0 | 2 | 42 | 0 | 4 | 3 | 0 | 6 |
| Rensselaer County | Population, Census 2010: | | 159,429 | | | | | | | | | | | | | | | | |
| City of Rensselaer | Population, Census 2010: | | 9,392 | | | | | | | | | | | | | | | | |
| Rensselaer County | Vulnerable Population, Census 2010 (under 5 years, and over 64 years) | | 30,429 | | | | | | | | | | | | | | | | |
| City of Rensselaer | Vulnerable Population, Census 2010 (under 5 years, and over 64 years) | | 1,841 | | | | | | | | | | | | | | | | |

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 34 percent of land in the City of Rensselaer 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 (%) |
| Rensselaer, City of | 2,191 | 741 | 34% |

Improved Property. Approximately 23 percent of improved property in the City of Rensselaer 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 (%) |
| Rensselaer, City of | \$1,588,138,000 | \$372,823,892 | 23% |

Population. Approximately 11 percent of the population of the City of Rensselaer reside 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 |
| Rensselaer, City of | 9,392 | 1,013 | 11% |

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 City of Rensselaer.

| Critical Facilities in the Floodplain | | | |
|---------------------------------------|-------------------------|----------------------------------|-------------------------|
| Municipality | Type of Facility | Name of Facility | Flood Zone ⁷ |
| Rensselaer, City of | Electric Power Facility | Rensselaer Cogeneration Facility | A/AE/AO |
| Rensselaer, City of | Fire Station | Rensselaer Fire Department | A/AE/AO |
| Rensselaer, City of | Freight Station | AMTK | A/AE/AO |
| Rensselaer, City of | Freight Station | CSXT | A/AE/AO |
| Rensselaer, City of | HAZMAT Facility | Organichem Corp. | A/AE/AO |
| Rensselaer, City of | HAZMAT Facility | Organichem Corp. | A/AE/AO |
| Rensselaer, City of | HAZMAT Facility | Organichem Corp. | A/AE/AO |
| Rensselaer, City of | HAZMAT Facility | Organichem Corp. | A/AE/AO |
| Rensselaer, City of | HAZMAT Facility | Rensselaer COGEN | A/AE/AO |

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

| Critical Facilities in the Floodplain | | | |
|---------------------------------------|---------------------|--|-------------------------|
| Municipality | Type of Facility | Name of Facility | Flood Zone ⁷ |
| Rensselaer, City of | Oil Facility | Getty Terminals Corporation | X500 |
| Rensselaer, City of | Oil Facility | Petroleum Fuel & Terminal Company Rensselaer | A/AE/AO |
| Rensselaer, City of | Passenger Station | Albany-Rensselaer | A/AE/AO |
| Rensselaer, City of | Police Station | Rensselaer Police Department | A/AE/AO |
| Rensselaer, City of | Port | Bray Terminals Wharf | A/AE/AO |
| Rensselaer, City of | Port | Petroleum Fuel and Terminal Co., Rensselaer | A/AE/AO |
| Rensselaer, City of | Port | Port of Albany Rensselaer Wharf | A/AE/AO |
| Rensselaer, City of | Port | Sun Refining and Marketing Co. Rensselaer | A/AE/AO |
| Rensselaer, City of | Shelter | Rensselaer - First Presbyterian Church | A/AE/AO |
| Rensselaer, City of | Wastewater Facility | Combined Sewer Overflows | A/AE/AO |

Historic and Cultural Resources. The following historic and cultural resources are located in the floodplain in the City of Rensselaer.

| Historic and Cultural Resources in the Floodplain | | | |
|---|--------------------------------------|--|-------------------------|
| Municipality | Historic Structure/Landmark/District | Location/Address | Flood Zone ⁸ |
| Rensselaer, City of | Aiken House | NE Corner of Riverside and Aiken Avenues | A/AE/AO |
| Rensselaer, City of | Clark-Dearstyne-Miller Inn | 11-13 Forbes Avenue | A/AE/AO |
| Rensselaer, City of | Fort Cariplo | South of Columbia Street on Riverside Avenue | A/AE/AO |
| Rensselaer, City of | Irwin, W.P., Bank Building | 156 Broadway | A/AE/AO |
| Rensselaer, City of | Patroon Agent's House and Office | 15 Forbes Avenue | A/AE/AO |

8.16.7 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 City of Rensselaer, the hazard with the highest estimated average annual losses is flooding.

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

| Summary of Annual Loss Estimates – City of Rensselaer ⁹ | | | | | | | | | | | | | |
|--|---|----------------------|----------------------------------|--|----------------------|----------------------|----------------------|--------------------------------------|----------------------|----------------------|------------|-----------|----------------------|
| 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 | NOAA NCEI, 1996-2018 | HAZUS | HAZUS | NOAA NCEI, 1996-2018 |
| Rensselaer, City of | \$1,588,138,000 | \$67 | \$647 | \$4,115 | \$511 | \$22,576 | \$5,718 | \$1,603 | \$0 | \$138,230 | \$4,098 | \$0 | \$4 |



⁹ * **It is important to note that this table reflects estimates of average annualized damages. For any hazard, individual event damages could be substantially higher.**

8.16.8 HAZARD RANKINGS AND KEY RISK FINDINGS

Hazard rankings for the City of Rensselaer 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, by far, the highest priority hazard for the City of Rensselaer.

| Hazard Rankings – City of Rensselaer | | | | | |
|--|--------------------|-----------------------|---------------|-----------------|---|
| Hazard | Future Probability | Potential Consequence | Relative Risk | Hazard Priority | Average Annualized Losses ¹⁰ |
| Extreme Temperatures (Coldwave/ Heat Wave) | Low | Low | Low | Low | \$67 |
| Hurricane/ Tropical Storm | Low | High | Moderate | Moderate | \$647 Wind; \$4,115 Wind + Flood |
| Lightning | High | Low | Low | Low | \$511 |
| Tornado | Low | High | High | High | \$22,576 |
| Wind | High | Low | High | High | \$5,718 |
| Winter Storm (Ice Storm/Snow Storm) | High | Moderate | Moderate | Moderate | \$1,603 |
| Drought | Low | High | Low | Low | \$0 |
| Flood | High | High | High | High | \$138,230 |
| Earthquake | Low | High | Moderate | Moderate | \$4,098 |
| Landslide | High | Low | Moderate | Moderate | \$0 |
| Wildfire | Low | Low | Low | Low | \$4 |

Key risk findings identified by the City of Rensselaer JAT as representing the highest local priorities for mitigation are:

- Stormwater is causing serious erosion in the draw area between Valley View and Falcon Chase. No action could put a portion of Valley View Drive in peril, as well as private property and perhaps dwellings closer to draw on Falcon Chase. Needs pipe extension and slope stabilization. Slope stabilization only would not address the volume of water running into S-bend of draw.
- Culvert on Partition Street is an aged, failing culvert bridge with underhanging utilities that catches debris. This increases flood risk upstream from the structure. Failure of the structure would also cause a traffic problem slowing emergency services. Insufficient flow capacity. Loss of life if culvert fails under traffic. Potential of property damage from

¹⁰ 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.

flooding or slowed emergency services. Potential catastrophic failure and flooding if no action is taken.

- Current code has no section for Green Practices which can reduce and treat urban storm water runoff, and current code has holes in language that has made enforcement difficult in some instances.
- Obsolete, failing unused bridge structure (Second Avenue Bridge) creates a flood chokepoint on Mill Creek and causes erosion issues.
- Erosion along Quackenderry Creek course in hollow is undermining steep slopes.
- Proposed Killean's Landing development will impact approximately half of Rensselaer's Riverfront making it imperative that the highest standards for riverfront development be implemented. The City should develop a stringent set of standard specifications and practices to be adhered to by developers.
- Development of buildings and structures is occurring too close to streams in the City (including Mill Creek, Quackenderry Creek, and an Unnamed Creek).
- Harrison Street Culvert - replace obsolete, aging culvert in Quackenderry Creek that is flow restriction point in hollow.
- Ensure proper training is provided the individual designated floodplain manager in order to perform duties in a competent manner.
- Residents could benefit from additional information on hazards, risks, and hazard mitigation measures they can take on their own properties to reduce damages and improve resident safety before, during and after a hazard event.
- 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.
- Code enforcement: Enforcement of NYS and Local Building Codes with Continual CEO training.
- As a community participating in the NFIP, our Floodplain Manager must enforce our local floodplain management ordinance. To do so effectively, he/she must be very familiar with the FEMA-480 document. Certified Floodplain Managers receive their certification after passing an exam which tests their knowledge of FEMA-480. An unknowledgeable floodplain manager may not implement the ordinance or the FEMA requirements properly. In turn, lives/property can be put at risk or in harm's way and additionally, our community's eligibility to continue its participation in the NFIP could be jeopardized if we do not undertake floodplain management activities in accordance with NFIP requirements (as spelled out in FEMA-480).

AECOM

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

8.16.9 OUTREACH TO THE PUBLIC AND OTHER STAKEHOLDERS

As part of this 2019 Plan Update, the City of Rensselaer 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 City of Rensselaer included:

| Outreach Activities | | | |
|---------------------|------------------------|--|---|
| Date of Activity | Type of Activity | Activity Details | Lead Department and/or Staff Title Who Undertook Activity |
| [4/9/2018] | [Public Hearing] | [Public Hearing on Proposed Killlean's Landing Development for GEIS] | [Planning Department/Clough Harbor Associates] |
| [3/12/2019] | [Public Hearing] | [Ward Outreach Meeting – Discuss Comprehensive Plan Update, and General Ward Concerns, Ward 1] | [Planning Dept] |
| [3/14/2019] | [Public Hearing] | [Ward Outreach Meeting – Discuss Comprehensive Plan Update, and General Ward Concerns, Ward 2] | [Planning Department] |
| [3/19/2019] | [Public Hearing] | [Ward Outreach Meeting – Discuss Comprehensive Plan Update, and General Ward Concerns, Ward 5] | [Planning Department] |
| [3/21/2019] | [Public Hearing] | [Ward Outreach Meeting – Discuss Comprehensive Plan Update, and General Ward Concerns, Ward 3] | [Planning Department] |
| [3/26/2019] | [Public Hearing] | [Ward Outreach Meeting – Discuss Comprehensive Plan Update, and General Ward Concerns, Ward 6] | [Planning Department] |
| [3/28/2019] | [Public Hearing] | [Ward Outreach Meeting – Discuss Comprehensive Plan Update, and General Ward Concerns, Ward 4] | [Planning Department] |
| [Ongoing] | [City Website] | [Informational Postings- Hazard Mitigation Plan, Public Hearings for Projects, Informational Advisories] | [Planning Depart/City Clerk] |
| [Ongoing] | [Informational Kiosk] | [“Kiosk” for distribution of various informational pamphlets, such as FEMA Flood Insurance Information, Disaster preparedness etc.] | [Planning Department] |



The City of Rensselaer has received the following comments to date as a result of its outreach activities.

| Comments Log | | | | | | | | | |
|--------------|---|----------------------------|----------------------|---------------------------|----------------------------|---|---|-----------------------------|-------------------|
| # | Comment | Comment Submitted By | Comment Submitted To | Comment Submitted on Date | How was comment submitted? | Disposition (Concur; non-concur; will evaluate) | Response / Action Proposed | Responsible Party | Action taken |
| 1 | Cutting Trees to Develop Killian's Landing could lead to flooding | J. Farrell | Planning Bd | 04/09/18 | Verbal | Non-Concur | Not all trees being cut many will remain and development will not cause an increased flood risk above that which already exists from the location, any additional runoff from the pavement will be address in the stormwater management plan prior to any actual development | Planning | None at this time |
| 2 | Killian's Landing Development could lead to flooding and possible PCB Contamination | R. Hotaling | Planning Bd | 04/09/18 | Verbal | Non-Concur | Resp. 1 development will not cause an increased flood risk above that which already exists from the location, any additional runoff from the pavement will be address in the stormwater management plan prior to any actual development, a screening was done of the area which did not identify any PCB concerns, however a more thorough investigation should be done before any construction activities are allowed to begin | Planning | None at this time |
| 3 | Killian's Landing Development could lead to flooding | K. Woods | Planning Dept | 04/12/18 | E-mail | Non-Concur | See response 1 and with the additional comment that stormwater/flooding issue would be addressed during the Permitting process to insure any development met all regulations | Planning/ Planning Board | None at this time |
| 4 | Revise Building & Parking Locations to protect shoreline and provide flood resilience, also concerned about development increasing the risk of flooding | J. Anzevino, Scenic Hudson | Planning Dept | 04/20/18 | E-mail | Concur | All concerns have been noted in GEIS, all layouts are preferred concepts but will not necessarily be what will be eventually proposed at that time, before actual layout and construction, at this point it will be the review process that will insure these concerns, too much fill, sustainable shorelines, flood damage prevention are followed and enforced. | Planning/ Planning Board | None at this time |

| Comments Log | | | | | | | | | |
|--------------|---|-----------------------|----------------------|---------------------------|----------------------------|---|--|--------------------|---|
| # | Comment | Comment Submitted By | Comment Submitted To | Comment Submitted on Date | How was comment submitted? | Disposition (Concur; non-concur; will evaluate) | Response / Action Proposed | Responsible Party | Action taken |
| 5 | Trash/Debris Dumped on empty Lots | Ward 5 public Meeting | Planning Dept | 03/19/19 | Verbal | Concur | City will need to review and tighten Code language as well as enforcement procedure and follow through | Building/ Planning | City looking into Consultant to help modify existing code language and add new language to prevent illegal dumping, protect slopes, and encourage green practices in the City |
| 6 | Excessive Ground water causing Safety/Property concerns | Ward 3 Public Meeting | Planning Dept | 03/21/19 | Verbal | Will Evaluate | City has already undertaken projects to relieve groundwater issues in the City, further areas will need to be identified and solutions if necessary and feasible devised | DPW/Engineering | Identify sites where excessive groundwater is causing issues and design mitigation projects |

8.16.10 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.

8.16.10.1 Legal and Regulatory Capability

The table below summarizes the regulatory tools that are available to the City of Rensselaer. The City 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 | Building/Zoning Dept | 101-1 Code is NYS Code |
| b. Zoning ordinance | Y | Building/Zoning | 179-55, 56 1/3/1979 |
| c. Subdivision ordinance or regulations | Y | Building/Zoning | 179-1 1/3/1979 |
| d. Special purpose ordinances (floodplain management, stormwater management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements) | Y | Building/Zoning | 105-1 6/17/87, 145-1 12/19/2007, |
| e. Growth management ordinances (also called "smart growth" or anti-sprawl programs) | N | | NYS does not have a statewide growth management ordinance. The City could integrate some aspects of growth mgmt. into zoning, but as a fully developed urban area, this type of reg is not really applicable. |
| f. Site plan review requirements | Y | Planning | 179-38 to 43 3/5/2002 |
| g. General, comprehensive or master plan | Y | Planning | 2006 |
| h. A capital improvements plan | Y | Planning/City Council | 2014 |
| i. An economic development plan | Y | Planning | (2006) in Comprehensive Plan |
| j. An emergency response plan | Y | Mayor | 91:1 12/1/19993 |

| 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 | N | | |
| l. A post-disaster recovery ordinance | N | | |
| m. Real estate disclosure requirements | N | | NYS mandates seller disclosure statewide. |
| n. Other | | | |

8.16.10.2 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the City of Rensselaer. The City 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 | Director and Assistant Director of Planning, both in the Department of Planning and Development |
| b. Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure | Y | Building Inspector and Code Enforcement Officer |
| c. Planners or Engineer(s) with an understanding of natural and/or human-caused hazards | Y | The planning department has a general understanding of such hazards, City has a part time City Engineer |
| d. Floodplain manager | Y* | Building Inspector is Floodplain Manager |
| e. Surveyors | N | Note: City has access to surveyors on fee for service basis, none on staff |
| f. Staff with education or expertise to assess the community's vulnerability to hazards | Y | City has part-time City Engineer on staff as well as contractual line for further technical assistance from consulting engineers |
| g. Personnel skilled in GIS and/or HAZUS | Y | Director and Assistant Director of Planning are both trained in GIS. No one on staff is trained in HAZUS but we are looking into it. |
| h. Scientists familiar with the hazards of the community | N | No scientists on City staff but consultants are available. |
| i. Emergency manager | N | |
| j. Grant writers | Y | Planning staff writes some grants but only has limited resources. Consultants hired to write grants at times. |

| Administrative and Technical Capability | | |
|--|--------------------|--|
| Staff / Personnel Resources | Available (Y or N) | Department / Agency / Position |
| k. Staff with expertise or training in benefit/cost analysis | Y | City has a Comptroller and Assistant Comptroller |
| *All communities participate in the National Flood Insurance Program; as such, they are required by the regulations to have an appointed floodplain manager. | | |

8.16.10.3 Fiscal Capability

The table below summarizes financial resources available to the City of Rensselaer. The City 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 |
| 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 (Water and Sewer) |
| e. Impact fees for homebuyers or developers for new developments/homes | Yes, for developers and probably homebuyers |
| 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 | Don't know |
| i. Withhold spending in hazard-prone areas | No |
| j. State mitigation grant programs | Yes |
| k. Other | |



8.16.10.4 Overall Capabilities

The City of Rensselaer'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 |
| Moderate | Moderate | Moderate | Moderate | Moderate |
| How these capabilities can be expanded and/or improved to reduce risk: | | | | |
| 1) Better written standard operating procedures for job titles and department operations, to include communication and cooperation between departments. 2) Update Comprehensive Plan to include hazard mitigation policies 3) Join CRS 4) Increased training and GIS proficiency for building/planning personnel | | | | |

8.16.10.5 Community Classifications

The table below summarizes classifications for community program available to the City of Rensselaer.

| Community Classifications | | |
|--|----------------|-----------------|
| Program | Classification | Date Classified |
| Community Rating System (CRS) * | NP | |
| Building Code Effectiveness Grading Schedule (BCEGS) | NP | |
| Public Protection | NP | |
| Storm Ready | NP | |
| FireWise | NP | |

Notes:

- = Unavailable

N/A = Not applicable

NP = Not participating.

* CRS Ranking as of April 2019

The classifications listed above relate to the City of Rensselaer'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/>

8.16.11 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.

8.16.12 PLAN FOR EVACUATION NEEDS AND SHELTERING

The City of Rensselaer has an emergency response plan¹¹. It does not have a post-disaster recovery plan or a post-disaster recovery ordinance¹². 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 City of Rensselaer has access to shelter data and will coordinate with the

¹¹ Source: Local Capability Assessment

¹² Source: Local Capability Assessment

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.

8.16.13 FUTURE NEEDS - RISK/VULNERABILITY

The City of Rensselaer has identified no future needs to better understand risk/vulnerability in the community. (otherwise, explain what community identifies)

8.16.14 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 City of Rensselaer 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 City of Rensselaer undertook the following plan integration mechanisms over the last planning cycle:

- 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.
- Municipality does not have a master, general, or comprehensive plan.
- 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.
- Community currently has a local zoning ordinance.]
- 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). City updated I&OM Plan to include a more formalized and frequent inspection/cleaning cycle.
- Worked with Planning Department has added hazard vulnerability to subdivision and site plan review criteria. Already in ordinances, also looking to update based on recent code review.

Targeted Plan Integration Activities for the Next Planning Cycle (2019-2024) – The City of Rensselaer 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.
- Join (or continue to maintain participation in) the NFIP's Community Rating System.
- 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.
- 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.)

8.16.15 MITIGATION STRATEGY

This subsection sets forth the mitigation strategy for the City of Rensselaer. It describes:

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

8.16.15.1 Progress on 2011 HMP Initiatives

The following table was completed by the City of Rensselaer 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.

Local priorities have remained generally the same since the last version of the plan was prepared.

| 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 | |
| R-1 | Replace 17,000' of water main and appurtenances and 52000' of sanitary sewer main and storm drain and eliminate a CSO on Washington Avenue and Farley Dr. to improve currently restricted fire protection flows and thus improve firefighting ability and limit spread of fires. | High | Wildfires and flooding | Common Council / Planning | X | | | | Project Completed, City has ongoing CSO elimination and infrastructure upgrades ongoing | | X | Not carried forward; specific project is complete |
| R-2 | Reconstruction of Partition Street infrastructure to replace deteriorating combined sewer lines with total separation of storm and sanitary sewer. This will address potential flooding in wet weather due to deteriorated and overtaxed clay combined sewer system. | High | Flooding | Planning / DPW | X | | | | Project Completed, City has ongoing CSO elimination and infrastructure upgrades ongoing | | X | Not carried forward; specific project is complete |
| R-3 | Study the feasibility of developing a stormwater detention area on the upper Quackenderry Creek to prevent pressure. (Implementation may involve cooperation with the Town of North Greenbush if a detention area is identified that crossed municipal boundaries.) | Medium | Flooding | Planning | X | | | | Dam and EAP Completed, as well as other flood control measures, City continues to seek funding for other needed flood control measures on the Quackenderry | | X | Not carried forward; specific project is complete |
| R-4 | Implement plan (currently under development) to mitigate potential flood damage to residential properties in a two-block area that share a common rear property line at the Quackenderry Creek. Depending on the results of the planning study, this project may include property acquisition, creek bank stabilization, drainage, and enforcement. | High | Flooding | Planning and DPW | X | | | | Bank Stabilization project complete, but City also seeking to create stream overlay districts not only for Quackenderry but Mill Creek as well | | X | Not carried forward; specific project is complete |
| R-5 | Develop a plan to improve enforcement of ATV use and illegal dumping in the Hollow, both of which destabilize the steep slopes and increase the risk of landslide | High | Landslide | Police / DPW / Code Enforcement | | | | X | City Code was updated in 2012, but there are still further refinements to be made, as well as develop projects to deal with slope issues in the hollow. | X | | Now the emphasis should be on improved enforcement and slope stabilization projects. |
| R-6 | Develop a long-range plan to address landslide issues associated with flow through an intermittent stream between Valley View and Falcon Chase. Likely components of the plan would be to extend the drainage system to relieve flooding of the stream, embankment stabilization and a designated | Medium | Landslide | Planning | | | | X | Other Projects needed to be completed however the City has hired an Engineering firm to evaluate and begin the process of developing plans to address the situation | X | | Project cannot be done as originally envisioned, connector road was never built so access is more difficult, and infrastructure needed is more extensive |
| R-7 | Mill Creek flooding prevention – design and construction of a structural element to slow down water as it leaves the falls which would eliminate flooding on Second Avenue. | Low-Medium | Flooding | Planning / DPW | | | | X | Original solution described is impractical given the nature of Mill Creek's route of travel after the falls a more practical approach taking into account the constriction points should be put forward. | X | | City is still seeking Grant funding to remove Second Ave Bridge and perform slope work, improve flow thereby removing on of the Mill Creek bottlenecks. |

| 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 | |
| R-8 | Development and implementation of a public awareness/education campaign to encourage hazard preparedness. Elements will include at least information posted on the city website and made available in public places such as city hall and the library. | Medium | All hazards | Planning Dept. | X | | | | Initial Phase completed, however City in process of upgrading website, public awareness and information will be one of the areas upgraded. | | X | Not carried forward; specific project is complete |
| R-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, Mayor | | | x | | The City instituted an emergency alert system for residents to sign up for, as well as public information banners on the City website, Hazard Mitigation plan is posted in the Building Planning Portion of the City Website, 2 informational kiosks (one at City Hall and one at Library) containing Stormwater related material. Building/Planning personnel routinely field floodplain questions from the public and have created and supplied Firmettes to inquirers. | x | | County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well. |
| R-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, Mayor | | | x | | The following code sections were modified between 2011 - 19 Chapter 145 Stormwater Management, 179 Zoning and 105 Flood Damage Prevention | x | | County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well. |
| R-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, Mayor | | | x | | Locally administered on an ongoing basis; our community (<u>did not</u>) 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. |
| R-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, Mayor | | | x | | Yes, we have Comprehensive Plan, and No on Disaster Mitigation Section | x | | County is carrying forward this County-led activity with no changes; our municipality will carry it forward as well. |
| R-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, Mayor | | | 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 | |
| R-NFIP-1 | Update/revise floodplain management ordinance to comply with latest FEMA regulations. | High | Flooding | Planning/Building | | | x | | Ordinance is dated 1987. Not updated because it was not a section that seemed to need updated on its own (separate from a comprehensive code review that will be needed in the near future). | x | | Ongoing type of activity; will be carried forward with no changes. |
| R-NFIP-4 | Update/revise floodplain management ordinance to be consistent with potential future new FIRMs | Medium | Flooding | Planning/Building | | | 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. |
| R-NFIP-5 | Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs) | Medium | Flooding | Planning/Building | | | | x | City will insure that individual given FPM Title will be adequately Trained | X | | City to insure adequate Training funding available for CFM training |
| R-NFIP-6 | Join the Community Rating System (CRS) | High | Flooding | Planning/Building with support from other departments | | | | x | Municipality opted not to enter CRS. | x | | Municipality intends to explore further during next planning cycle; carrying forward with no changes |

8.16.15.2 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 City of Rensselaer, 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 | |
| C4-5409-01/04 (R1&R2) and DWSRF 15749 | North Broadway Sewer Separation Project 9, and Washington Ave. Sewer Separation Project 4b and Washington Ave and Broadway Water Main Project | Wildfires and Flooding | Replace aging infrastructure in this area to reduce flooding from storm overflows and increase water pressure to fight fires, or loss of water due to failure of deteriorated water mains | Cost | \$9,602,490 |
| | | | | Level of Protection | Est. \$1,000,000 to \$2,000,000 |
| | | | | Damages Avoided; Evidence of Success | Water pressure was increased in the Central and lower end of the City and the problem areas along Columbia Turnpike and central Rensselaer were quiet, the were also less incents of area flooding due to an overloading of the Combined and separated systems. |
| EDAP # 5796 | Quackenderry Creek Flood Control Project Phase IV | Fires/Wildfires and Flooding | Original problem was flooding in the Hollow neighborhood, and the Willow St. Area, this project was to repair the trash rack prior to the Hollow, that would keep debris from accumulating just beyond the Hollow and flooding the area, and the 16-inch watermain crossing the creek was bored and moved under the creek eliminating that potential issue. | Cost | \$265,967 |
| | | | | Level of Protection | Est. \$ 500,000 |
| | | | | Damages Avoided; Evidence of Success | during the extremely wet period late summer 2018 there was no flooding in the Hollow and only minor overflow of the banks at Willow |
| NPN | Quackenderry Creek Flood Mitigation Culvert Removal | Flooding | Project was to remove an old railroad precast culvert, that created a bottleneck in the Quackenderry Creek about 75 yards from its mouth into the Hudson, Project removed the culvert, laid the slopes back and stabilized with Heavy Stone Fill | Cost | \$111,364 |
| | | | | Level of Protection | Est. \$250,000 |
| | | | | Damages Avoided; Evidence of Success | Flow on the lower end of the Quackenderry was steady and there were no flooding events upstream except as noted above for Phase IV. |

8.16.15.3 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 City of Rensselaer 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 City of Rensselaer 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 | | | | | | | | | | | | | | |
|--|--|-------------------------------------|---------------------------|---|---|--------------------|----------------------------|--------------------|---|-----------------|--|---|------------------------|--|
| 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 ¹³ ? | EHP ¹⁴ Issues ? | Estimated Timeline | Project Lead (Include relevant Department and Position Title) | Estimated Costs | Estimated Benefits | Potential Funding Sources ¹⁵ | Priority ¹⁶ | Action Worksheet Provided? ¹⁷ |
| * NOTE: Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater. | | | | | | | | | | | | | | |
| 1 | Hollow Slope-Code Review and Upgrade (2011 R-5) | 1, 2, 3 | Landslide/ Flooding | Current Code has no section for Green Practices which can reduce and treat urban storm water runoff, and current code has holes in language that has made enforcement difficult in some instances | Review current code language and upgrade to close legal holes thereby improving enforcement, add Green Practices to Storm water section of code to encourage Green Infrastructure in City | No | No | 2020 - 2022 | Building/ Planning | \$ 20,000 | Green Practices will reduce storm runoff in system and occurrences, or severity of flooding-a tighter code will help with code enforcement | In House | High | |
| 2 | Valley View-Slope Stabilization Valley View (2011 R-6) | 3 | Landslide | Storm Drainage Undermining slopes between Valley View and Falcon Chase | Extend existing storm drainage system beyond bend in draw between Valley View and Falcon Chase and stabilize slopes | No | Yes | 2019 - 2020 | Engineering | \$ 350,000 | Reduce threat of damage to property from slope failure | CFA, DEC | High | Yes |
| 3 | Mill Creek Second Ave. Bridge Removal (2011 R-7) | 3 | Flooding | Obsolete, failing unused bridge structure creates a flood chokepoint on Mill Creek as well as erosion issues | Remove Bridge and abutments, lay back and stabilize slope, redirect utilities | No | Yes | 2021 - 2025 | Planning/ Engineering | \$ 1,000,000 | Reduce flood risk in Ring Street area, erosion, and threat to life and property if bridge fails | DOT, TAP, CFA | Medium | |
| 4 | Slope Stabilization Quackenderry Creek | 3 | Landslide | Erosion along Quackenderry Creek course in hollow undermining steep slopes | Install additional stream bank stabilization, stabilize slopes that are showing signs of future failure. | No | Yes | 2022 - 2024 | Planning/ Engineering | \$ 500,000 | Reduce chance of landslides in Hollow that could alter Quackenderry course or threaten homes above Hollow. | DEC | Medium | |
| 5 | Killean's Landing GEIS Environmental Recommendation Implementation | 4 | Flooding | Proposed Killean's Landing development will impact approximately half of Rensselaer's Riverfront making it imperative that the highest standards for riverfront development be implemented. | Using recommendations from GEIS and additional Environmental Best Practices Develop a stringent set of standard specifications and practices to be adhered to by Developers | No | Yes | 2020 - 2021 | Planning/ Engineering | \$ 50,000 | Ensure the proper development of Killean's Landing and provide framework for any future riverfront development | DRI, DEC, DOS | High | |
| 6 | Stream Overlay District | 1,4 | Flooding | Development of Buildings and Structures too close to Streams in the City | Survey and Create a Stream Zoning Overlay District for Mill, Quackenderry and Un-named Creek | No | Yes | 2021/22 | Planning | \$ 30,000 | Creation of Overlay District will give Planning and Zoning additional authority to control building and development along stream courses | DEC | Medium | |
| 7 | Harrison Street Culvert Replacement | 3 | Flooding | Replace obsolete, aging culvert in Quackenderry Creek in the Hollow that is flow restriction point in hollow | Replace culvert with new larger culvert that will allow additional flow through neighborhood in Hollow. | No | Yes | 2023 -2025 | Planning/ Engineering | \$ 550,000 | Increase stream flow through neighborhood lessening chance of flooding | DOT | Low | |
| 8 | Floodplain Management Training | 2 | Flooding | Insure proper training is provided the individual designated floodplain manager in order to perform duties in a competent manner | Mandatory floodplain management training with first year of hire for Building and Zoning Administrator and annual refresher training | No | No | 2019-2020 | Planning | \$ 1,500 | City will insure at least one trained individual to direct and assist in Floodplain Management | In House | High | |

¹³ CF – Critical Facility. Please respond “Y” (yes) if the project’s purpose is to protect a critical facility, or “N” (no) if not.

¹⁴ 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.

¹⁵ 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.availabs.org/capabilities/administerfunding>. Jurisdictions should identify additional funding opportunities you may be aware of that are not on the state list.

¹⁶ Priority – See “Prioritization Methodology” on the next page.

¹⁷ 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 | | | | | | | | | | | | | | |
|--|--|-------------------------------------|---------------------------|--|--|--------------------|----------------------------|--------------------|---|-----------------|--|---|------------------------|--|
| 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 ¹³ ? | EHP ¹⁴ Issues ? | Estimated Timeline | Project Lead (Include relevant Department and Position Title) | Estimated Costs | Estimated Benefits | Potential Funding Sources ¹⁵ | Priority ¹⁶ | Action Worksheet Provided? ¹⁷ |
| * NOTE: Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater. | | | | | | | | | | | | | | |
| 9 | Partition Street Culvert Replacement | 3 | Flooding | Failing culvert with low hanging utilities creates choke point for high water flow, and debris catcher further adding to flooding threat | Replace culvert with new structure redirect utilities | No | Yes | 2020 - 2022 | Planning/ Engineering | \$ 978,000 | Reduce chance of flooding in Hollow | NYSDOT Bridge NY | High | Yes |
| 10 | Participate in County-Led Hazard Mitigation Outreach (2011 R-CL-1) | 1 | All hazards | Residents could benefit from additional information on hazards, risks, and hazard mitigation measures they can take on their own properties to reduce damages and improve resident safety before, during and after a hazard event. | 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) | No | No | 2020 - 2029 | Planning | \$ 10,000 | Using combined resources with the County will allow the City of Rensselaer better and more thorough outreach | Budget | High | |
| 11 | Request code/ordinance review by Count as needed (2011 R-CL-2) | 4 | All hazards | Communities are safer and more resilient when new construction and substantial improvements take into account the latest information on hazard vulnerabilities and measures to reduce risk. | 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) | No | No | 2020 - 2022 | Building/ Planning | \$ 20,000 | See Initiative #1 - During the Code review and upgrade any County Input would be helpful | Budget/DOS | High | |
| 12 | Send CEO to County-Led Training (2011 R-CL-3) | 2 | All hazards | There can be a loss of institutional knowledge with staff changes. Even when staff is the same, continual training improves local capabilities and allows officials to better regulate activities in hazard areas to protect lives and property. | Code enforcement: Enforcement of NYS and Local Building Codes with Continual CEO training. (prevention) | No | No | 2020 - 2029 | Building Dept. | \$ 1,500 | Code Enforcement has had a high turnover insuring regular attendance for training opportunities will be invaluable | Budget | High | |

| PROPOSED 2019 HMP MITIGATION INITIATIVES | | | | | | | | | | | | | | |
|--|---|-------------------------------------|---------------------------|---|--|--------------------|----------------------------|--------------------|---|-----------------|---|---|------------------------|--|
| 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 ¹³ ? | EHP ¹⁴ Issues ? | Estimated Timeline | Project Lead (Include relevant Department and Position Title) | Estimated Costs | Estimated Benefits | Potential Funding Sources ¹⁵ | Priority ¹⁶ | Action Worksheet Provided? ¹⁷ |
| * NOTE: Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater. | | | | | | | | | | | | | | |
| 13 | Send Comprehensive Plan Update to County for Review by County Planning (2011 R-CL-4) | 2,3,4 | All hazards | A long-term vision for the community that doesn't take into account hazard areas can put lives and property at risk. Taking into account natural hazards and hazard mitigation measures can make the community more resilient. | Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review of draft plans by the County Planning Department (prevention) | No | No | 2020-2022 | Planning | \$ 500 | City is in the process of updating our Comprehensive Plan, County input would produce a more complete review and update | DOS-LGE Grants + In House | Medium | |
| 14 | Attend County-Led Workshops on Natural Hazards and Hazard Mitigation (2011 R-CL-5) | 2,4 | All hazards | When municipal staff aren't armed with information on zoning and planning issues that sometimes arise regarding natural hazards and hazard mitigation, they may make decisions that don't foster community resiliency. | Hold periodic workshops for municipalities regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation. (prevention) | No | No | 2020-2029 | Building/Planning | \$ 500 | City already attends MS4 Coalition Meetings which have been extremely beneficial to City, this should be expanded to include any Mitigation workshops | Budget | Medium | |
| 15 | Update Floodplain Management Ordinance per New FEMA Regulations (as needed) (2011 R-NFIP-1) | 3,4 | Flooding | Outdated ordinances mean that a community is not regulating to the latest codes and standards or hazard information, and that does not foster community resiliency. | Update/revise floodplain management ordinance to comply with latest FEMA regulations. | No | No | 2021/2022 | Planning | \$ 30,000 | See Initiative #6, City seeking to create Stream Overlay District that will help guide and direct future code changes and development near streams | DEC Grant | Medium | |
| 16 | Update Floodplain Management Ordinance when New FIRMs are Issued (2011 R-NFIP-4) | 3,4 | Flooding | Outdated ordinances mean that a community is not regulating to the latest codes and standards or hazard information, and that does not foster community resiliency. | Update/revise floodplain management ordinance to be consistent with potential future new FIRMs | No | No | 2020 - 2029 | Building/Planning | \$ 5000 | In conjunction with Initiative #1 this will insure a seamless process when updates occur | Budget/In house | Medium | |
| 17 | Floodplain Manager CFM Certification (2011 R-NFIP-5) | 2 | Flooding | As a community participating in the NFIP, our Floodplain Manager must enforce our local floodplain management ordinance. To do so effectively, he/she must be very familiar with the FEMA-480 document. Certified Floodplain Managers receive their certification after passing an exam which tests their knowledge of FEMA-480. An unknowledgeable floodplain manager may not implement the ordinance or the FEMA requirements properly. In turn, lives/property can be put at risk or in harm's way and additionally, our community's eligibility to continue its participation in the NFIP could be jeopardized if we do not undertake floodplain management activities in accordance with NFIP requirements (as spelled out in FEMA-480). | Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs) | No | No | 2020 - 2029 | Building/Planning | \$ 1,500 | See initiative #8 this will insure that there will be no lapse in having at least one trained individual to act as Floodplain Manager even if there are personnel changes | Budget/in house | High | |

| PROPOSED 2019 HMP MITIGATION INITIATIVES | | | | | | | | | | | | | | |
|--|------------------------------|-------------------------------------|---------------------------|---|---|--------------------|----------------------------|--------------------|---|-----------------|--|---|------------------------|--|
| 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 ¹³ ? | EHP ¹⁴ Issues ? | Estimated Timeline | Project Lead (Include relevant Department and Position Title) | Estimated Costs | Estimated Benefits | Potential Funding Sources ¹⁵ | Priority ¹⁶ | Action Worksheet Provided? ¹⁷ |
| * NOTE: Projects related to Critical Facilities (CF) must protect the facility to the 500-year event or worst damage scenario, whichever is greater. | | | | | | | | | | | | | | |
| 18 | Join the CRS (2011 R-NFIP-6) | 2 | Flooding | Policy premiums could be reduced if the City pursues CRS certification and class increases. | Join the Community Rating System (CRS) | No | No | 2020 | Building/Planning | \$ 1,100 | Becoming a CRS member could lower insurance rates and improve the City's readiness, and follow through of programs | Budget | Medium | |
| 19 | Mitigation of RLPs *NEW* | 1 | Flooding | The City of Rensselaer has six NFIP Repetitive Loss Properties | The City will support property owners who wish to undertake flood mitigation on private property. | No | TBD | 5 Years | Mayor and Floodplain Manager | High | High | FEMA PDM or HMGP | Medium | |

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 | | | | | | | | | | | | | | 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? | |
| 1 | Old 2011 R-5 – Code Review/Upgrade | Flooding/Landslide | Y | Y | H | L | Y | N | Y | Y | N | N | N | H |
| 2 | Old 2011 R-6 – Slope Stabilization Valley View | Landslide | Y | Y | H | M | Y | N | Y | Y | N | N | N | H |
| 3 | Old 2011 R-7 – Second Avenue Bridge Removal | Flooding | N | Y | M | H | Y | Y | N | Y | N | N | Possibly | M |
| 4 | Slope Stabilization Quackenderry Creek | Landslide | N | Y | M | M | Y | Y | Y | Y | N | N | N | M |
| 5 | Killeen's Landing GEIS Env. Recommendation Implementation | Flooding | Y | Y | H | L | Y | N | Y | Y | N | N | N | H |
| 6 | Stream Overlay District | Flooding | N | Y | M | L | Y | Y | Y | Y | N | N | N | M |
| 7 | Harrison St. Culvert Replacement | Flooding | N | Y | M | M | Y | N | Y | Y | N | N | N | L |
| 8 | Floodplain Management Training | Flooding | N | Y | H | L | Y | N | Y | Y | N | N | Y | H |
| 9 | Partition Street Culvert Replacement | Flooding | N | Y | H | H | Y | Y | Y | Y | N | N | Y | M |
| 10 | Participate in County-Led Hazard Mitigation Outreach (2011 R-CL-1) | All hazards | N | Y | H | L | Y | N | Y | Y | N | N | N | H |
| 11 | Request code/ordinance review by Count as needed (2011 R-CL-2) | All hazards | Y | Y | H | M | Y | Y | Y | Y | N | N | N | H |
| 12 | Send CEO to County-Led Training (2011 R-CL-3) | All hazards | N | Y | H | L | Y | Y | Y | Y | N | N | N | H |
| 13 | Send Comprehensive Plan Update to County for Review by County Planning (2011 R-CL-4) | All hazards | N | Y | M | L | Y | N | Y | Y | N | N | N | M |
| 14 | Attend County-Led Workshops on Natural Hazards and Hazard Mitigation (2011 R-CL-5) | All hazards | N | Y | M | L | Y | N | Y | Y | N | N | N | M |
| 15 | Update Floodplain Management Ordinance per New FEMA Regulations (as needed) (2011 R-NFIP-1) | Flooding | Y | Y | M | M | Y | Y | Y | Y | N | N | N | M |
| 16 | Update Floodplain Management Ordinance when New FIRMs are Issued (2011 R-NFIP-4) | Flooding | N | Y | M | L | Y | Y | Y | Y | N | N | N | M |

| | | | | | | | | | | | | | | |
|----|---|----------|---|---|---|---|-------|---|----------------|---|---|---|---|---|
| 17 | Floodplain Manager CFM Certification (2011 R-NFIP-5) | Flooding | Y | Y | H | L | Y | N | Y | Y | N | N | N | H |
| 18 | Join the CRS (2011 R-NFIP-6) | Flooding | N | Y | M | L | Y | N | Y | Y | N | N | N | M |
| 19 | Mitigation of RLPs *NEW* | Flooding | N | Y | H | H | Equal | N | Private/Grants | Y | N | N | N | 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 City of Rensselaer are included on the following pages.

Section 8.16 - Jurisdictional Annex, City of Rensselaer

| NYS DHSES Action Worksheet | | | |
|---|--|---|--|
| Project Name: | Slope Stabilization Valley Vies | | |
| Project Number: | RHM-01 | | |
| Risk / Vulnerability | | | |
| Hazard of Concern: | Landslide | | |
| Description of the Problem: | Stormwater causing serious erosion in draw area between Valley View and Falcon Chase | | |
| Action or Project Intended for Implementation | | | |
| Description of the Solution: | Installation of stormwater structures and piping to extend stormwater beyond bend in draw where erosion is taking place. | | |
| 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: | 200 Year | Estimated Benefits (losses avoided): | No action could put a portion of Valley View Drive in peril, as well as private property and perhaps dwellings closer to draw on Falcon Chase. |
| Useful Life: | 50 Years | | |
| Estimated Cost: | \$ 350,000 | | |
| Plan for Implementation | | | |
| Prioritization: | High | Desired Timeframe for Implementation: | Summer 2019 –Summer 2020 |
| Estimated Time Required for Project Implementation: | 9 months – 1 year to secure funding, design and construct | Potential Funding Sources: | NYSDEC WQIP, Slope Stabilization Grant |
| Responsible Party: (Department/ Organization) | Engineering | Local Planning Mechanisms to be Used in Implementation, if any: | Asset Management/City Capital Improvement Plan |
| Three Alternatives Considered (including No Action) | | | |
| Alternatives: | Action | Estimated Cost | Evaluation |
| | No Action | \$0 | |
| | Slope Stabilization Only | \$ 250,000 | Short-term fix only does not address volume of water running into S-bend of draw |
| | Pipe Extension & Slope Stabilization | \$ 350,000 | Long-term fix, will carry water beyond S-bend eliminated the erosion potential |
| 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 8.16 - Jurisdictional Annex, City of Rensselaer

| NYS DHSES Action Worksheet | | | |
|---|---|---|--|
| Project Name: | Partition St. Culvert Replacement | | |
| Project Number: | PIN 1761.14 | | |
| Risk / Vulnerability | | | |
| Hazard of Concern: | Flooding | | |
| Description of the Problem: | Culvert is an aged failing culvert bridge with underhanging utilities that will catch debris further increasing flood risk upstream from the structure, failure would also cause a traffic problem slowing emergency services | | |
| Action or Project Intended for Implementation | | | |
| Description of the Solution: | Replace culvert with new structure increasing flow potential, direct utilities under creek eliminating debris hazard. | | |
| 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: | 200 Year | Estimated Benefits (losses avoided): | Loss of life if culvert fails under traffic, reduce potential of property damage from flooding or slowed emergency services. |
| Useful Life: | 100 Years | | |
| Estimated Cost: | \$ 978,000 | | |
| Plan for Implementation | | | |
| Prioritization: | High | Desired Timeframe for Implementation: | Design-Letting 2019-2020 Construction 2020 - 2021 |
| Estimated Time Required for Implementation: | 2 Years for Design and construction | Potential Funding Sources: | NYSDOT Bridge NY |
| Responsible Party: (Department/ Organization) | Planning/Engineering | Local Planning Mechanisms to be Used in Implementation, if any: | Planning- Ongoing Grant Research and Submissions |
| Three Alternatives Considered (including No Action) | | | |
| Alternatives: | Action | Estimated Cost | Evaluation |
| | No Action | \$0 | Potential catastrophic failure, flooding potential if no action |
| | Rehab Culvert Bridge | \$ 750,000 | Cosmetic fix will extend life of bridge somewhat but will not address other issues |
| | Replace Culvert Bridge | \$ 978,000 | Long Term that address all issues |
| 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: | | | |