

9.21 TOWN OF UNION

This section presents the jurisdictional annex for the Town of Union.

A.) HAZARD MITIGATION PLAN POINT OF CONTACT

| Primary Point of Contact | Alternate Point of Contact |
|--|--|
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B.) PROFILE

Population

56,346 (estimated 2010 U.S. Census)

Location

The Town of Union is located in the south-central part of Broome County, NY. The town is on the north side of the Susquehanna River and communities of Union form the western suburbs of Binghamton. According to the U.S. Census Bureau, the town has a total area of 35.8 square miles, of which, 35.2 square miles of it is land and 0.6 square miles is water.

Brief History

The Town of Union was established in 1791 while still part of Tioga County before the creation of Broome County. The name Union came about when General Poor and General Sullivan, each leading troops on separate fronts during the American Revolution re-united at the site of Union. Originally, Union township consisted of more than 700 square miles of territory before it was reduced to create other townships in the county, the last being the Town of Maine in 1848.

Governing Body Format

Home rule is strong in New York State and thus, each town and village has its own governing body. Towns are made up of a Town Board and Supervisor. Villages generally have a Mayor, Clerk, and Council. Along with town and village roads, any public water and sewer systems are operated by the local municipality, though they may cooperate with County departments. Each municipality has charge over its own planning and zoning and uses the County personnel as a resource.

Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the municipality. Refer to the map in section I.) of this annex which illustrates the hazard areas along with the location of potential new development.

| New Development/Potential Development in Municipality | | | | | | |
|---|---|-------------------------|------------------------|--------------------------|----------------------|------------------------|
| Property Name | Type (Residential or Commercial) | Number of Structures | Address | Block and Lot | Known Hazard Zone | Description/ Status |
| Pines at Stoney Creek | Residential | 36 | 1713 Farm to Market | 108.04-1-1 128.08-1-9 | Out zone x | On hold |

C.) NATURAL HAZARD EVENT HISTORY SINCE 2006

Broome County has a history of natural hazard events as detailed in Volume I, Section 5 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events affecting the County and its municipalities. Below is presented a summary of events dating from the year 2006 to indicate the range and impact of natural hazard events in this community. Specific damages have been indicated if available from reference or local sources. For details of events prior to 2006, refer to Volume I, Section 5 of this plan.

| Type of Event | FEMA Disaster # (if applicable) | County Designated? | Date | Approximate Damage Assessment |
|--|---------------------------------|--------------------|-------------------------|--|
| Severe Storms and Flooding | DR 1650 | Yes - IA, PA | June 26 - July 10, 2006 | Evacuations occurred in South Endwell, Fairmont Park, West Corners, and parts of NYS Rt 17 and 17C were closed due to flooding. Many roads, pump stations, lift stations, and culverts in town were damaged. Public facility damage occurred at the Town Hall, State Police Barracks, Scarborough Drive Refuse Facility, and William Hill Park. Private commercial and residential properties were also damaged. According to the Small Business Association, private property damage in the Town totaled \$7,317,400.00 Public assistance requests totaled \$1,037,443.65 |
| Severe Storms and Flooding | DR 1670 | Yes - IA, PA | November 16-17, 2006 | Infrastructure damage was reported at Cornell Hollow Rd Culvert, Townline Rd/Culvert, Cornell Hollow Rd, Struble Rd Culvert, Boswell Hill Rd (shoulders and ditches), Bornt Hill Rd (shoulders and ditches), Robinson Hill Rd Culvert, Smith Dr Bridge, and Ironwood Dr Weirs. Minor damage to private facilities occurred mostly on hillsides. Public assistance requests totaled \$184,150.13. |
| April Nor'easter | DR 1692 | No | April 14 - 18, 2007 | |
| Severe Storms and Flooding | DR 1710 | No | June 19, 2007 | |
| Severe Winter Storm | EM 3299 DR 1827 | No | December 11-31, 2008 | |
| Severe Storms and Flooding | DR 1857 | No | August 8-10, 2009 | |
| Severe Winter Storm and Snowstorm | DR 1957 | No | December 26-27, 2011 | |
| Severe Storms, Flooding, Tornado and Straight Line Winds | DR 1993 | Yes - PA | April 26 - May 8, 2011 | Infrastructure damage was reported at Sally Piper Rd, Rhodes Rd, Robinson Hill Rd, and Town Line Rd. Minor residential flooding and bank erosion on Nanticoke Drive |

| Type of Event | FEMA Disaster # (if applicable) | County Designated? | Date | Approximate Damage Assessment |
|--------------------------------|---------------------------------|--------------------|------------------------------------|---|
| | | | | Was reported as private damages. Public assistance requests totaled \$119,482.53 |
| Hurricane Irene | EM 3328 DR 4020 | Yes - IA, PA | August 26- September 5, 2011 | |
| Remnants of Tropical Storm Lee | EM 3341 DR 4031 | Yes - IA, PA | September 7-11, 2011 | Up to 7 neighborhoods in town were evacuated, and local shelters were established. Many flooded neighborhoods lost electricity. Roads closures included NYS Rte 26, NYS Rte 17 C, Glendale Dr, NYS Rte 17, Watson Blvd, Struble Rd, and Carriann Ln. Various small businesses, commercial enterprises, and retail establishment were affected by either water or road closures for several days. Numerous roads, culverts, pump stations, lift stations, flood walls, and other infrastructure was reported damaged. Public facility damage occurred at the State Police substation, Town Hall, Town Courts, Public Works facility, and more. A 50 Unit mobile home park was destroyed, and another 262 housing units were damaged, of which 26 were severely damaged. Costs for debris removal were estimated at \$645,226, and for emergency creek clearance totaled \$33,997 |

Note: N/A = Not applicable

From Town of Union Action Plan for Disaster Recovery (7/5/2012)

The flooding that occurred September 7-9, 2011 severely affected five neighborhoods in the Town of Union and caused considerable damage in twelve others. The flooding that occurred both in 2005 and 2006 were confined to two major areas in the Town, those being the South Endwell area and the Fairmont Park subdivision.

In 2011, in addition to these two areas, the Westover and West Corners areas were severely affected by flooding. Three of the areas, South Endwell, Fairmont Park, and Westover are affected by backwater from the Susquehanna River. West Corners is affected by the Nanticoke Creek. The Nanticoke Creek affects areas in the western part of the Town of Union including the Route 26 corridor, West Corners, Glendale Drive, and West Endicott. These areas are also subject to backwater effect of the Susquehanna River. That is, once the Susquehanna River rises above a certain stage, floodwaters from the Susquehanna River will back up into the Nanticoke Creek affecting properties in the western portion of the Town.

West Corners

At the western edge of the Town, the West Corners neighborhood was the next most severely hit area, perhaps more so in that the 50 unit mobile home park on Orman Street is only reflected in the data as one unit. All of the trailers, 19 of which were individually owned, were severely affected. Overall, almost 10% of the parcels in this neighborhood were severely damaged. On the plus side, this area has a relatively low population of only 569 people living in 262 housing units, which may have saved the area from having even greater damage. A number of commercial properties also suffered extensive flooding including a national chain pharmacy and a local restaurant.

South Endwell

South Endwell, particularly the area south of Main Street, suffered damage to 7.3% of its parcels. This area has a higher percentage of renters at 40.5%. This area also has a high amount of low income families. Similar to West Corners, the flood could have caused more damage, but this area not only has the lowest population of all of the damaged neighborhoods (at 506 people living in 262 units), but also has a neighborhood is reflective of the buyout programs that the Town of Union has been undertaking since the late 1980s utilizing FEMA and CDBG funding. As Brixius Creek backed up, floodwaters filled the lower level of Town Hall with four feet of water and also impacted surrounding commercial and residential structures along Pearl St.

Westover

One of the most heavily damaged areas was Westover. Over 14% of its parcels experienced substantial damage. This area is relatively low income with almost half of its population living under 80% of the median income for Broome County. It also has a higher percentage of renters at 45.9%. Of all the neighborhoods that were severely affected by the floods; Westover has the highest concentration of minority residents at almost 20%. The area also has relatively few vacant units at 5% of the neighborhood's housing units, therefore the chances of an occupied home being flooded were increased. This neighborhood was also home to a vibrant neighborhood business district that was home to one of the Town's largest employers, BAE Systems. BAE's 27-acre campus, owned by the United States Air Force, suffered significant damage forcing the abandonment of the facility. The Air Force will be demolishing the facility in its entirety, including any required environmental remediation, and the Department of Defense is providing funds for a study to determine the highest and best re-use of the property. Numerous other business were severely impacted including Home Depot, which was closed for several months after the flood. A mothballed coal-powered electricity generating facility was also impacted. Floodwaters also damaged the YMCA, an important neighborhood facility. William Hill Park and the Village of Johnson City water treatment plant were also inundated.

Fairmont Park

The fourth most damaged area is Fairmont Park. Of the 530 housing units with a population of 1,303 people, 6.6% were substantially damaged when floodwaters overtopped the adjoining levee. This neighborhood has a relatively low minority population (4.1%) and is also relatively wealthier with a low amount of LMI households (19.4%). The area also has relatively few renters (5.6%). When the levee was overtopped, several businesses, including an electrical supply house, a gift shop, and a restaurant, were also damaged.

Northside Johnson City

The Northside Johnson City neighborhood is spread across two block groups. Of the 639 households in the area, 2.3% were damaged by the flood. Of those households, 51% were low to moderate income and 35.5% were renters. Approximately 11.5% were minority households.

The Village of Johnson City

Public Works garage was severely damaged as were several surrounding industrial business. Floodwaters also damaged the Johnson City Senior Citizen Center, which is located outside the 500-year floodplain, and portions of the adjoining residential neighborhood.

Southside Johnson City

The Southside Johnson City neighborhood suffered damage to 1.4% of the 296 housing units. This area had the lowest number of vacant units at 2.7%. The population is mostly homeowners with an owner occupancy tenure of 91.7% and also slightly wealthier with a LMI population of 39.9%. Flooding also impacted Boland Park, owned and operated by the Village of Johnson City, a storage

Riverhurst

Riverhurst in south central Endwell suffered major damage to 2.4% of its housing units. This neighborhood lies within the median of most demographic profiles of the flood damaged areas, however, it does have both a slightly smaller population at 783 and a slightly higher minority population at 11.6%.

North Endwell East

The area of North Endwell East had a damage rate of 0.9 % of housing units for the neighborhood of 431 units, This area is also somewhat median in its demographic profile, except for having a slightly smaller minority population at 7.1%. At the northern boundary of the neighborhood the emergency spillway of the Struble Road flood control facility was activated for the first time in history. Large amounts of water were released from the spillway, gaining velocity due to the high elevation. Water cascaded through the Struble Road Sports facility and destroyed a section of Struble Road, exposing underlying drainage structures, forcing closure of the road for months.

Union Center

Of the half of one percent of housing units that were damaged in Union Center, all were located along Route 26. This area has a slightly lower vacancy rate at 3.5%, and of all the other units of which the vast majority were owner occupied at 90%. This area is also somewhat wealthier having a LMI amount of 26%. A number of business were also impacted, including a greenhouse-nursery complex. As debris washed downstream, critical storm water collection facilities became blocked causing Nanticoke Creek to spill outside its normal boundaries. A section of Carrie Ann Dr. was washed away, cutting off access to homes. The Town provided temporary alternate road improvements to allow residents access to their homes.

Oakdale-Reynolds

The Oakdale-Reynolds neighborhood in Johnson City also experienced significant damage. While only two housing units had substantial damage, the majority of the damage in this neighborhood was to numerous commercial and industrial buildings including warehouses, commercial offices, big box retail establishments, neighborhood facilities, and public buildings. For the first time in history, the emergency spillway at the Overbrook flood control facility was activated due to heavy rainfall, discharging a large volume of water into Finch Hollow Creek. The resulting flooding at lower elevations was significant. A portion of the parking lot at the Oakdale Mall was washed away as was Arthur Ave., which adjoins the parking lot. Gander Mountain, a large retail development flooded and has not reopened. Other major retailers including Petco, Toys R Us, and the Christmas Tree Shops were also flooded but have since reopened. A call center that was flooded permanently closed within days of the flood event and the business relocated to another state. A non-profit childcare center for single parents was flooded and the organization is in the process of rebuilding the facility. A village recreational facility, Northside Park was flooded as was the lower level of an adjoining village fire department sub-station.

Airport Heights

The Airport Heights neighborhood, west of Endicott, was flooded as Nanticoke Creek over spilled its banks causing damage to adjoining low-lying homes, although only one dwelling unit experienced substantial damage. Floodwaters also damaged two Town of Union recreational facilities, Glendale Park and the Rt. 17C Sports facility.

Roundtop

The Roundtop neighborhood flooding primarily impacted several Village of Endicott facilities including a golf course, recreational airport, and the sewage treatment plant.

D.) NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

| Hazard type | Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c} | Probability of Occurrence | Risk Ranking Score (Probability x Impact) | Hazard Ranking ^b |
|---------------------|--|---------------------------|---|-----------------------------|
| Flood | 1% Annual Chance: \$144,629,835 0.2% Annual Chance: \$221,094,540 | Frequent | 36 | High |
| Severe Storm | 100-Year MRP: \$0 500-Year MRP: \$942,135 Annualized Loss: \$7,452 | Frequent | 30 | Medium |
| Severe Winter Storm | 1% of GBS: \$32,066,448 5% of GBS: \$160,332,241 | Frequent | 24 | Medium |
| Earthquake | 500-Year MRP: \$2,829,679 2,500-Year MRP: \$27,949,117 Annualized Loss: \$36,008 | Occasional | 20 | Medium |
| Drought | Not available | Frequent | 18 | Low |
| Extreme Temperature | Not available | Frequent | 18 | Low |

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30
Low = Total hazard risk ranking below 20
- The valuation of general building stock and loss estimates was based on custom inventory for Broome County.
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood and earthquake hazards represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.

E.) CAPABILITY ASSESSMENT

This section identifies the following capabilities of the local jurisdiction:

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

The town indicates that it has high planning and regulatory capability and community resiliency; moderate administrative, technical, fiscal, and community political capability; with a moderately willing political capability to enact policies or programs to reduce hazard vulnerabilities in the community.

E.1) 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) |
|--|----------------------------------|-----------------------|--|
| 1) Building Code | Y | Local | Ch 86, 12/31/10 |
| 2) Zoning Ordinance | Y | Local | Ch300, 6/1/11 |
| 3) Subdivision Ordinance | Y | Local | Ch181, 1990 |
| 4) NFIP Flood Damage Prevention Ordinance | Y | Local | Ch121, 1987 |
| 4a) Cumulative Substantial Damages | | Local | |
| 4b) Freeboard | Y | Local | NYS Building Code |
| 5) Growth Management | | Local | |
| 6) Floodplain Management / Basin Plan | Y | Local or Watershed | Ch121, 1987 |
| 7) Stormwater Management Plan/Ordinance | Y | Local | Ch171, 3-2007 |
| 8) Comprehensive Plan / Master Plan/ General Plan | Y | Local | 2010 |
| 9) Capital Improvements Plan | | Local or County | |
| 10) Site Plan Review Requirements | Y | Local | Ch300 art 63, 6-1-12 |
| 11) Open Space Plan | N | Local or County | |
| 12) Stream Corridor Management Plan | N | Local or Watershed | |
| 13) Watershed Management or Protection Plan | N | Local or Watershed | |
| 14) Economic Development Plan | N | County | |
| 15) Comprehensive Emergency Management Plan | N | Local or County | |
| 16) Emergency Response Plan | N | Local or County | |
| 17) Post Disaster Recovery Plan | N | Local | In process |
| 18) Post Disaster Recovery Ordinance | N | Local | |
| 19) Real Estate Disclosure Requirement | | State | |
| 20) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)] | Y | Local or County | Ch 125, 5-1987 |

| Regulatory Tools (Codes, Ordinances., Plans) | Do you have this? (Y or N) | Enforcement Authority | Code Citation (Section, Paragraph, Page Number, Date of adoption) |
|--|----------------------------------|-----------------------|--|
| 21) Aquifer Recharge and Protection Zones | Y | Planning Bd | CH74, 7-1998 |
| 22) Illicit Discharges, activities and connections to storm sewers | Y | Public Works | CH134, 8-2007 |
| 23) Townwide Comprehensive Long Term Recovery Plan | In Progress | Not Applicable | Not Applicable |
| 24) Townwide Comprehensive Drainage Plan | In Progress | Not Applicable | Not Applicable |
| 25) Townwide Floodplain Management Plan and Ordinance | In Progress | Not Applicable | Not Applicable |
| 26) Townwide Comprehensive Sewer Infiltration Study | In Progress | Not Applicable | Not Applicable |

E.2) Administrative and Technical Capability

| Staff/ Personnel Resources | Available (Y or N) | Department/ Agency/ Position |
|--|--------------------|---|
| 1) Planner(s) or Engineer(s) with knowledge of land development and land management practices | Y | Planning Department |
| 2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure | Y | Engineering Building & Code Enforcement |
| 3) Planners or engineers with an understanding of natural hazards | Y | Planning Department |
| 4) NFIP Floodplain Administrator | Y | Building and Code Enforcement |
| 5) Surveyor(s) | Y | |
| 6) Personnel skilled or trained in "GIS" applications | Y | Planning Department |
| 7) Scientist familiar with natural hazards | | |
| 8) Emergency Manager | Y | Commissioner of Public Works |
| 9) Grant Writer(s) | Y | Planning and Town Supervisors office |
| 10) Staff with expertise or training in benefit/cost analysis | Y | Comptroller |

E.3) Fiscal Capability

| Financial Resources | Accessible or Eligible to use (Yes/No/Don't know) |
|--|---|
| 1) Community Development Block Grants (CDBG) | Y |
| 2) Capital Improvements Project Funding | Y |
| 3) Authority to Levy Taxes for specific purposes | Y |
| 4) User fees for water, sewer, gas or electric service | Y |
| 5) Impact Fees for homebuyers or developers of new development/homes | Y |
| 6) Incur debt through general obligation bonds | Y |
| 7) Incur debt through special tax bonds | Y |
| 8) Incur debt through private activity bonds | N |
| 9) Withhold public expenditures in hazard-prone areas | Y |
| 10) State mitigation grant programs (e.g. NYSDEC, NYCDEP) | Y |
| 11) Other | |

E.4) Community Classifications

| Program | Classification | Date Classified |
|--|----------------|-----------------|
| Community Rating System (CRS) | 8 | 10/1/2008 |
| Building Code Effectiveness Grading Schedule (BCEGS) | 4/5 res | 7/12/11 |
| Public Protection | | |
| Storm Ready | | |
| Firewise | | |

N/A = Not applicable. NP = Not participating. - = Unavailable.

The classifications listed above relate to the community's effectiveness in providing services that may impact 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 one (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 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

F. MITIGATION STRATEGY

F.1) Past Mitigation Actions/Status

The town reported an array of past and ongoing mitigation activities, including property acquisitions and infrastructure updates. Completed and ongoing mitigation activities for the Town of Union include the following:

- The Town of Union adopted a new Comprehensive Plan. The Town's existing land use regulations are periodically reviewed and updated as needed.
- The Town has received FEMA approval for 172 property acquisitions under the FEMA-4020-DR-NY HMGP grant program.
- 3 acquisition projects in South Endwell and 1 property in Fairmont Park.
- Install stop wall structure in Fairmont Park across Watson Blvd at Walkover and extend flood wall to Watson Blvd
- Replacing pump station on Ditrich Street and consider sewer/drainage upgrades at Seward Avenue.
- Backup generator for water pumps
- Carrieann Drive box culvert



- Strubel Road box culvert
- Fairmont Park Flood wall

More detailed accounts of past or completed mitigation projects or actions were provided in the Town of Union's 2011 Hazard Mitigation Plan, a summary of which is listed below:

River Road/Argonne Avenue Buyout Program

From 1988 to 1993, the Town purchased flood prone properties along Argonne Avenue and River Road in the Endwell area through the River Road/Argonne Avenue Buyout Program. Most of the houses are 50 years old and considered structurally unsound. The only option was to provide residents with an opportunity to relocate. For a five-year period, the Town used Community Development Block grant (CDBG) funds to purchase properties, demolish homes, and restore the area to its natural state. The Town demolished 35 houses on Argonne Avenue and River Road and purchased 4 parcels of vacant land. The Town will preserve the area as open space. The Town received credit under Activity 520 – Acquisition and Relocation. Since the flood events of 2004 and 2005, the Town is investigating the possibility of purchasing additional properties in the floodplain.

Open Space

Over the years, the Town of Union and Villages of Endicott and Johnson City have considered constructing a walking path along the Susquehanna River. One portion of the trail was actually built by the Endicott Rotary Club. The Binghamton Metropolitan Transportation Study recently completed a “Greenways” study. The study proposes the construction of a pedestrian/bikeway trail along the Susquehanna and Chenango Rivers. A portion of the trail was constructed on a former rail bed in Vestal with transportation enhancement grants.

Watershed Management Plan

The Town of Union will continue to work with the Towns of Maine and Chenango and the Village of Johnson City to discuss appropriate land uses for the Little Choconut Creek watershed.

Flood Warning Dissemination System

The National Weather Service issues flood warnings for major rivers and small streams. The information is shared with the Broome County Office of Emergency Service via the communications link. If there is a prediction for the Susquehanna River reaching a flood stage of 18 feet, the National Weather Service will issue a warning over the communications network with Broome County Office of Emergency Services (BCOES) and the New York State Department of Environmental Conservation (NYSDEC). The New York State Department of Environmental Conservation, Broome County, and the Town of Union will maintain and repair levee systems in the Town and initiate a flood alert procedure. For more information, see the 2011 Town of Union HMP.

Property Owner Protection Measures

One of the ways to reduce flood losses is to make residents aware of flood hazards. As mentioned previously, residents in flood areas will continue to receive a pamphlet (Activity 310-Outreach Project) acquainting residents with the flood warning system, how much warning time is allowed, which radio stations to tune to, and what emergency precautions to take. Flood insurance will continue to be recommended since flood damage is not usually covered by normal homeowner's insurance. Pamphlets will continue to be sent to residents in flood prone areas affected by the Susquehanna River, Nanticoke Creek, and Little Choconut Creek. Each pamphlet is tailored in terms of the type of flood warning that residents should listen for. For example, since the Fairmont Park area is now protected by a levee system, residents shall be made aware of when the

stop log structure is being placed across Watson Boulevard so that they will not try to use it as an access to and from their place of residence. For more information, see the 2011 Town of Union HMP.

Drainage System Maintenance

Smaller storms can cause over bank flooding because debris, silt, and vegetation are allowed to accumulate in drainage structures. Each spring, the Town of Union checks all closed and open storm drainage systems to see if debris has hindered water flow. Before and after any storm, the Town's Highway crews will inspect certain drainage structures.

Town crews will clear debris clogging of all small streams affecting the Town's drainage system. Broome County clears all debris from the pond areas around the dam structures on the Nanticoke Creek, Little Choconut Creek, Brixius Creek, and Patterson Creek in the spring. Broome County personnel periodically check dam structures and pond areas before and after each storm occurrence. NYSDEC will inspect and clear open channels, ditches, and outlets in the Westover area that may impact the flood protection works. The time periods for inspection of these structures are listed in an agreement signed between the U.S. Army Corps of Engineers and NYSDEC.

Storm Water Management

Any new residential, commercial, or industrial development shall be designed so that the storm water discharge from the subdivision does not exceed the discharge that emanated from the property when it was undeveloped. Storm water runoff from new developments shall not be permitted to increase into inadequate downstream storm sewers during the time of peak runoff. The design and size of the facilities shall be based upon anticipated runoff for a ten-year storm.

For any residential or commercial development that disturbs 1 or more acres, the developer must provide a Storm Water Pollution Prevention Plan (SWPPP) that will reduce the rate of runoff from new land development to prevent increases in flooding and provide infiltration practices to capture contaminants from the storm water runoff by controlling first ½ inch of runoff for all development phases including grading and construction. The Town of Union is a regulated MS4 under general permit GP-02-02 in accordance with Phase II regulations. For more information, see the 2011 Town of Union HMP.

Summary of CRS Ongoing Activities Recommended for Continuation

The Town of Union is also actively participating in activities listed by FEMA's National Flood Insurance Program Community Rating System (CRS). Of the 18 CRS floodplain management activities available for credit, the Town is participating in the following:

Public Information (Series 300)

- Activity 240: Floodplain Management Plan
- Activity 310: Elevation Certificate
- Activity 320: Map Determination
- Activity 330: Outreach Project
- Activity 350: Flood Protection Library

Mapping and Regulations (Series 400)

- Activity 420: Open Space Preservation
- Activity 450: Storm Water Management

Flood Damage Reduction (Series 500)

- Activity 510: Repetitive Loss Plan
- Activity 520: Acquisition and Relocation

- Activity 540: Drainage System Maintenance
Flood Preparedness (Series 600)
- Activity 610: Flood Warning Program
- Activity 630: Dam Safety

The progress of mitigation actions from the 2011 Town of Union Hazard Mitigation Plan is indicated in Section F.3. Actions that are not yet complete or are ongoing have been carried over to this plan update.

F.2) Hazard Vulnerabilities Identified

The town identified a number of problem areas vulnerable to future natural hazards, many of which have sustained damage from past events. Flood hazard areas include Fairmont Park, West Corners, Westover, and South Endwell. Carrie Ann Drive and Strubel Road were noted as vulnerable until the completion of new drainage structures at these locations. The flood wall at Fairmount Park was also noted as vulnerable.

It is estimated that in the Town of Union, 9,569 residents live within the 1% annual chance flood area (NFIP Special Flood Hazard Area). Of the municipality's total land area, 10.5% is located within the 1% annual chance flood area. \$545,281,586 (10.1%) of the municipality's general building stock replacement cost value (structure and contents) is located within the 1% annual chance flood area.

There are 493 NFIP policies in the community. While there are 274 policies located within the 1% annual chance flood area. FEMA has identified 60 Repetitive Loss (RL) including 23 Severe Repetitive Loss (SRL) properties in the municipality.

Further information regarding the community's participation in the NFIP is provided in section J below.

NFIP Summary

| Municipality | # Policies (1) | # Claims (Losses) (1) | Total Loss Payments (2) | # Rep. Loss Prop. (1) | # Severe Rep. Loss Prop. (1) | # Policies in 1% Boundary (3) | # Policies in 0.2% Boundary (3) | # Policies Outside the 0.2% Flood Hazard (3) |
|--------------|----------------|-----------------------|-------------------------|-----------------------|------------------------------|-------------------------------|---------------------------------|--|
| Union (T) | 493 | 476 | \$22,028,465 | 60 | 23 | 274 | 53 | 166 |

Source:

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, in April 2012 using the "Comm_Name". These statistics are current as of January 31, 2012. Please note the total number of repetitive loss properties includes the severe repetitive loss properties.
- (2) Total building and content losses from the claims file provided by FEMA Region 2 (current as of January 31, 2012).
- (3) The policy locations used are based on the latitude and longitude provided by FEMA Region 2.

HAZUS-MH estimates that for a 1% annual chance flood, \$144,629,835 (2.7%) of the municipality's general building stock replacement cost value (structure and contents) will be damaged, 3,194 people may be displaced, 2,614 people may seek short-term sheltering, and an estimated 25,169 tons of debris could be generated. HAZUS-MH estimates the following damage and loss of use to critical facilities in the community as a result of a 1% annual chance flood event:

| Name | Municipality | Type | Exposure | | Potential Loss from 1% Flood Event | | | Potential Loss from 0.2% Flood Event | | |
|---|--------------|---------------|----------|------------|------------------------------------|------------------------|------------------------------------|--------------------------------------|------------------------|------------------------------------|
| | | | 1% Event | 0.2% Event | Percent Structure Damage | Percent Content Damage | Days to 100-Percent ⁽²⁾ | Percent Structure Damage | Percent Content Damage | Days to 100-Percent ⁽²⁾ |
| NYS Police Endwell Barracks | Union (T) | Police | X | X | 0.0 | 0.0 | NA | 5.0 | 5.7 | 480 |
| Town of union Offices | Union (T) | Municipal | X | X | | | | | | |
| Western Broome YMCA | Union (T) | Poll | X | X | 3.4 | 20.2 | - | 11.4 | 69.1 | NA |
| Washingtonian Hall | Union (T) | Historic | X | X | 4.6 | 27.4 | - | 13.5 | 78.3 | NA |
| West Endicott Park Carousel | Union (T) | Historic | X | X | 14.7 | 96.6 | - | 20.9 | 100.0 | NA |
| WELL #2, SOUTH OF PLANT | Union (T) | Potable Water | | X | - | - | - | 31.2 | - | NA |
| WELL #3, NORTH OF PLANT | Union (T) | Potable Water | | X | - | - | - | 11.4 | - | NA |
| WELL #5, FIFTH STREET | Union (T) | Potable Water | X | X | 9.0 | - | - | 34.0 | - | NA |
| Scarborough Drive Public Works Facility | Union (T) | Public Works | x | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Union Volunteer Emergency | Union (T) | Municipal | x | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Source: HAZUS-MH 2.1

Note: NA = Not available; T = Town

- = No loss calculated by HAZUS-MH 2.1

X = Facility located within the DFIRM boundary.

(1) HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Please note in some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.

Please refer to the Hazard Profiles for additional vulnerability information relevant to this jurisdiction.

F.3) PROPOSED HAZARD MITIGATION INITIATIVES

Note some of the identified mitigation initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities.

| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|---|--|---------------------|--------------------------|---|--------------------|----------------|---------------------------|-----------------------------------|----------|---------------------|--------------------|
| 1. | Provide hazard information at Town facilities: At various locations throughout the Town facility, information regarding natural hazards, emergency preparedness, flood plain management, hazard mitigation, and storm water management will be available to the general public for review. The information available shall be periodically reviewed and update to provide the most current data possible. The maps, detailing flood prone areas, as provided by the National Flood Insurance Program will also be available for review. | N/A | All | 1-2 1-6 2-1 2-6 | Town of Union Planning Department; Town of Union Public Works Department | Medium | Low | Town of Union Town Budget | Ongoing, expand as funding allows | High | PR, PE, NR | Ongoing |
| 2. | Provide hazard information on the Internet: The Town of Union shall continue to maintain a web site that will provide information regarding natural hazards, emergency preparedness, flood plain management, hazard mitigation, and storm water management that will be available to the general public for review. The information available shall be periodically reviewed and updated to provide the most current data possible. The website shall provide links to the Broome County Multi Jurisdictional Hazard Mitigation Plan, Flood | N/A | All | 1-2 1-6 2-1 2-6 | Town of Union Data Processing Department; Town of Union Public Works Department | High | Low | Town of Union Town Budget | Ongoing, expand as funding allows | High | PR, PE, NR | Ongoing |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|---------------------|--------------------------|--|--------------------|----------------|---------------------------|-----------------------------------|----------|---------------------|--------------------|
| | Plain Management, Emergency Operations, and Storm Water Management plans. A link to Broome County's website to provide access to the County's emergency services department and NY Alert. As additional information becomes available, the information will be made available by providing links to a variety of other sites. | | | | | | | | | | | |
| 3. | Provide flooding information to residents in high-risk areas and encourage residents to sign up for NY Alert: Pamphlets will continue to be mailed to residents in flood prone areas affected by the Susquehanna River, Nanticoke Creek, and Little Choconut Creek. Each pamphlet is tailored in terms of the type of flood warning that residents of each area must be aware of. These pamphlets shall be periodically reviewed and updated to provide the most current data possible. | N/A | Flood | 1-2 1-6 2-1 2-6 | Town of Union Planning Department; Villages of Endicott and Johnson City | High | Low | Town of Union Town Budget | Ongoing, expand as funding allows | High | PE | Ongoing |
| 4. | Encourage educational activities: The Town of Union will continue to support and promote educational programs as they become available thru Federal, State, Regional, or County activities regarding natural hazards, mitigation, emergency preparedness, storm water management, or other related topics. The Town of Union will continue to participate in and promote the Broome – Tioga Storm Water Coalition. The Town of Union Board shall continue supply funds and employee time to participate in these educational | N/A | Flood | 1-2 1-6 2-1 2-6 | Town of Union Board; FEMA, SEMO, and other governmental entities | Medium | Low | Town of Union Town Budget | Ongoing, expand as funding allows | High | PE, NR | Ongoing |

| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|---|--|---------------------|--------------------------|---|--------------------|----------------|-------------------------------------|-----------------------------------|----------|---------------------|--------------------|
| | programs. The Town shall encourage residents to sign up for NY Alert. | | | | | | | | | | | |
| 5. | Encourage the utilization of NOAA weather radios: The Town of Union will promote the increased use of NOAA weather radios to access broadcasts of weather forecasts; flood forecasts, warnings or watches and other hazard or post-event information. The Town of Union will investigate potential funding and/or discounting possibilities for acquisition of these radios. Pertinent information will be available to the public thru display, mailing and on the Internet. | N/A | Flood, Severe Storm | 1-2 2-1 2-2 | Town of Union Planning Department; Government agencies of local merchants | Medium | Low | Grant opportunities, private sector | On-going | Medium | ES | Ongoing |
| 6. | Review and update plans: The Town's annex to the Broome County Multi-Jurisdiction; Hazard Mitigation, Flood Plain Management, Emergency Operations, and Storm Water Management Plans will be periodically reviewed and updated to provide the most current data possible. | N/A | All | 1-3 3-1 3-2 3-3 | Town of Union Planning and Public Works Departments; | High | Medium | Town of Union Town Budget | Ongoing, expand as funding allows | High | PR, PE, NR, SP, ES | Ongoing |
| 7. | Support and promote emergency services activities: The Town of Union will continue to support participation in emergency services activities, required by Federal, State, Regional, County, Local Agencies, or private entities and organizations, necessary to promote the review and update process for their emergency plans. The Town will continue to encourage residents to register for NY-Alert. | N/A | All | 3-3 4-3 4-5 | Town of Union Town Board; FEMA, SEMO, and Broome County Emergency Service | High | Medium | Town of Union Town Budget | Ongoing, expand as funding allows | High | ES | Ongoing |
| 8. | Comprehensive Plan and land use regulations: The Town of Union adopted a new Comprehensive Plan. The Town's existing land use regulations are periodically reviewed and updated as needed. | | | | | | | | | | | |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|---------------------|--------------------------|--|--------------------|----------------|---|-----------------------------------|----------|---------------------|--------------------|
| | <p>The process for future reviews of the Comprehensive Plan and land use regulations shall evaluate the following elements:</p> <ul style="list-style-type: none"> • Adequacy of existing storm water management and erosion control to protect increased flood damages. • Adequacy of flood plain management to protect new development in flood prone areas. • Adequacy of construction standards or regulations to provide protection in areas not designated on existing or revised Flood Insurance Program Maps and evaluate the necessity for additional standards or regulations. • Adequacy of storm water management to regulate and enforce requirements under the MS4 storm water program. • Adequacy of regulations to promote the use of underground utilities. • Adequacy of storm water management to protect buildings and other structures from damage due to stream erosion. • Adequacy of regulations to encourage development of major transportation corridors and industrial complexes remote from population centers and environmentally sensitive areas. • Adequacy of standards to support controllable traffic patterns promoting limited access, traffic calming, subdivision interconnection etc. • Adequacy of regulations to support and promote hazard mitigation and damage reduction in general. | | | | | | | | | | | |
| | Please see above. | N/A | Flood | 1-7 1-8 | Town of Union Planning Department; Town of Union Town Board | High | Medium | Town of Union Town Budget | Ongoing, expand as funding allows | High | NR, PR | |
| 9. | Education and Training: The Town of Union will ensure periodic discussions with the members of the Town's Zoning and Planning Boards regarding natural hazards and their relation to site planning, traffic patterns and development standards. Storm water management, National Flood Insurance Program, and flood plain development regulations shall also be addressed. | N/A | All | 1-1 1-4 | Town of Union Town Board; FEMA, SEMO and other governmental entities | Medium | Medium | Town of Union Town Budget | Ongoing, expand as funding allows | High | PE | Ongoing |
| 10. | Support and promote network of creek and stream gauges: The Town of Union will explore avenues by which a system of rain gauges could be installed and maintained, possibly by volunteers living in the area of the gauges, along the creeks and streams within and around the planning area. The Town of Union will assist and coordinate similar efforts by Federal, State, Regional, Local agencies, or private organizations. The existence of these gauges could provide additional advanced warnings in the event | N/A | Flood | 1-3 1-11 2-3 | Town of Union Planning Department | Medium | Medium | Federal Grant opportunities, private sector | Short Term DOF | Low | PP, ES | Ongoing |

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| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|----------------------|--------------------------|---|--------------------|----------------|---------------------------------------|-----------------------------------|----------|---------------------|--------------------|
| | of a high water occurrence. | | | | | | | | | | | |
| 11. | Inspect and maintain drainage system: The Town of Union will continue and expand its existing storm sewer inspection and maintenance program. The current procedures for the inspection and maintenance of closed storm systems, culverts, bridges, ditches, streams, and other drainage features will be reviewed, updated, and documented to ensure the efficiency and effectiveness of the Town's program. | Existing | Flood | 1-1 1-11 | Town of Union Highway Department; Town of Union Sewer Department | High | High | Town of Union Town Budget | Ongoing, expand as funding allows | High | PR, SP | Ongoing |
| 12. | Support and promote preventive activities: The Town of Union will continue to support participation in preventive measure activities initiated by Federal, State, Regional, County, Local Agencies, or private entities and organizations, necessary to promote the review and update process for their emergency plans. | N/A | All | 1-4 3-1 | Town of Union Town Board; FEMA, SEMO and other governmental entities | Medium | Low | Town of Union Town Budget | Ongoing, expand as funding allows | High | PR | Ongoing |
| 13. | Support and promote updating of the Flood Insurance Rate Maps: Effective implementation of the Town of Union Floodplain Management Plan requires the existence of accurate, up to date maps delineating the flood prone sections of the planning area. The Town will continue to cooperate with the necessary Federal, State, Regional, or Local agencies to achieve the most accurate flood information and mapping possible. | N/A | Flood | 1-1 1-3 2-3 | Town of Union Planning Department; FEMA's FIRM Program | High | Medium | Town of Union Town Budget | Ongoing, expand as funding allows | Medium | PR | Ongoing |
| 14. | Support and promote erosion protection along waterways: The Town of Union, thru its various plans and regulations, will continue to encourage | N/A | Flooding, Subsidence | 1-8 | Town of Union Planning, Code Enforcement, and Public Works Departments; | High | High | Available grants and Municipal Budget | Ongoing, expand as funding allows | High | NR, PP | Ongoing |



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| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|---|--|---------------------|--------------------------|--|--------------------|----------------|---|-----------------------------------|----------|---------------------|--------------------|
| | waterway protection thru setback restrictions and required vegetative areas. The Town thru its review and update of existing plans and regulations will consider building setbacks along streams or other minor waterways. | | | | Broome County Soil and Water Conservation District | | | | | | | |
| 15. | Support and promote property owner flood proofing activities: The Town of Union will continue to fund research and technical assistance to residents participating in efforts to flood proof their property. The Town will continue to support staff education, as it pertains to flood proofing, by utilizing available funds and employee time to attend programs instituted by Federal, State, Regional, County, Local Agencies, or private entities and organizations. Should property owners express interest in flood proofing activities beyond their financial means, such as elevation above flood level or property acquisition, the Town will continue its efforts to supply financial assistance to the extent it is available. | | | | | | | | | | | Ongoing |
| | Please see above. | Existing | Flood | 1-1 1-2 | Town of Union Planning Department; Governmental agencies or public | High | Medium | Federal Mitigation Grants and homeowner match | As funding becomes available | Low | PP, PE | |
| 16. | Support and promote Community Rating System: The Town of Union will continue achieve lower cost for flood insurance thru its annual re-certification process. The Town will continue to encourage the acquisition and continuance of sufficient flood insurance coverage by residents in flood prone areas. | N/A | Flood | 1-2 1-7 2-1 | Town of Union Planning Department; FEMA's FIRM Program | Medium | Low | Town of Union Town Budget | Ongoing, expand as funding allows | High | PR | Ongoing |
| 17. | Improve existing drainage facilities: The Town of Union will continue improve the existing storm system by repairing or replacing existing roads, ditches, culverts, etc. which become damaged due to drainage or flooding problems. Every effort shall continue to be made to mitigate the flooding problem thru increased capacity or system efficiency. Areas include those areas identified in the Town-wide Comprehensive drainage study : | Existing | Flood | 1-1 1-8 1-11 | Town of Union Highway Department; Public Works Department | High | High | Federal, State, County grant opportunities, Town of Union Town Budget | Ongoing, expand as funding allows | High | SP, PP | Ongoing |
| 18. | Support and promote | N/A | All | 3-1 | Town of Union | High | Low | Town of | Ongoing, | High | ES | Ongoing |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|---|--|---------------------|--------------------------|--|--------------------|----------------|---|--|----------|---------------------|--------------------|
| | interaction with emergency service providers: | | | 3-3 4-1 | Town Board; NYS Police; Broome County Sheriff; UVES (ambulance); and Endwell, West Corners, West Endicott, Union Center and Choconut Center Fire Departments | | | Union Town Budget | expand as funding allows | | | |
| 19. | Support and promote tree maintenance programs: The Town of Union will continue its maintenance program for trees along Town rights of ways. The Town will continue to assist the utility companies in the performance of their maintenance programs. The Town will continue its program of problem area identification and report to utility companies the location requiring maintenance. The Town will continue to provide residential brush pick-up or develop drop-off areas to encourage property maintenance by owners. | N/A | Severe Storm | 1-2 3-1 4-4 | Town of Union Highway Department; NYSEG | Medium | Low | NYSEG and Town of Union Town Budget | Ongoing, expand as funding allows | High | NR, PP | Ongoing |
| 20. | Support and promote underground utilities: The Town of Union will continue to require the installation of buried utilities for new development. The Town will continue to encourage the utility companies to convert existing overhead facilities to those that are underground at the time replacement becomes necessary. | New and Existing | Severe Storm | 1-1 3-1 | Town of Union Planning and Public Works Departments; NYSEG and developers | High | Low | NYSEG, developers and Town of Union Town Budget | Ongoing, expand as funding allows | Medium | SP, PP | Ongoing |
| 21. | Review and update Zoning Ordinance to ensure suitable development in steep sloped areas: The Town of Union will review existing regulations and | N/A | Flood | 1-4 1-7 1-8 1-9 | Town of Union Planning Department; Town of Union Planning Board | Medium | Low | Town of Union Town Budget | 12-18 months from plan implementation. | Medium | PR, NR | Ongoing |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|---------------------|--------------------------|-----------------------------|--------------------|----------------|---|-------------------|----------|---------------------|--------------------|
| | suggest changes to prohibit certain activities in the steeply sloped areas of the town. For instance, the town does not currently have a forestry management ordinance or any prohibition against dumping on steep slopes. Slope and interface setbacks should be considered. | | | | | | | | | | | |
| 22. | Improvement to flood walls, additional stormwater detention facilities, backup generators including study and ear mark grant for a floodwall at Fairmont Park. | Existing | Flood | 1-1 1-8 1-11 | Town of Union DPW | High | High | Federal, State grant opportunities, Town match | Long Term DOF | Medium | PP, NR | New |
| 23. | Provide funding to re-establish a uniform elevation for the existing Westover Levee that was overtopped due to settlement in numerous sections. Permission to further elevate the structure to provide at least two feet of free board will be requested from NYSDEC. During the flood event of September 2011 the earthen levee surrounding the Westover neighborhood was overtopped in many locations causing substantial devastation to homes and the adjoining Main Street business district. One of the town's largest employers, BAE systems was forced to permanently abandon its 27-acre site. | Existing | Flood | 1-1 1-11 | Town of Union P&CD; DPW | High | High | Federal grant opportunities, ACOE, CDBG-DR | Short Term DOF | High | PP | New |
| 24. | Purchase land on Seward Avenue to relocate Scarborough Drive Highway and Refuse facility that has been flooded 3 times over the last 8 years. Loss of equipment will be prevented and it will allow department to be run out | Existing | Flood | 1-1 1-11 | Town of Union DPW; BCOEM | High | High | Federal grant opportunities, CDBG-DR | Short Term DOF | Medium | PP | New |



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|------------|--|--|---------------------|--------------------------|-----------------------------|--------------------|----------------|---|-------------------|----------|---------------------|--------------------|
| | of facility during a disaster such as flooding. It will allow crews to be more proactive in the Town to events instead of having to dedicate crews to relocate equipment before the event. | | | | | | | | | | | |
| 25. | Improve McKinley Ave –Pine St area storm drainage to eliminate roadway flooding at key intersection. This activity involves upgrades to the storm sewer system that follows the general line and grade of Brixius Creek. During the flood event of September 2011 sections of the roads along the storm sewer lines developed sink holes as a result of large volumes of high velocity storm runoff from Brixius Creek. | Existing | Flood | 1-1 1-11 | Town of Union DPW; BCOEM | High | High | Federal grant opportunities, CDBG-DR | Short Term DOF | Medium | PP, SP | New |
| 26. | Funds are being allocated to conduct an analysis of reported sewer back-up issues at S. Seward Ave and to install back-flow prevention devices in the utility strip if they are deemed to be necessary and appropriate by the Town of Union. Several property owners have reported that their homes were subject to the back flow of sewer water into their homes during the September 2011 flood event. This issue may also be further addressed by another proposed project that will replace the pumping station on Deitrich Ave. | Existing | Flood | 1-1 1-3 1-11 | Town of Union DPW | Medium | Medium | Federal grant opportunities, CDBG-DR | Short Term DOF | Medium | PP | New |
| 27. | Funding will be used to replace the pump station on Deitrich Ave. The pump station is undersized for the volume it was required to handle during the flooding in September of 2011, which likely contributed to | Existing | Flood | 1-1 1-11 | Town of Union P&CD; DPW | Medium | Medium | CDBG 10.1- DR | Short Term | High | SP, PP | New |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|---------------------|--------------------------|--|--------------------|----------------|----------------------------|------------|----------|---------------------|--------------------|
| | sewage backups that occurred in the adjacent residential neighborhood. | | | | | | | | | | | |
| 28. | Taft Avenue Sewer upgrades. In September of 2011, many businesses suffered structural and /or damage to essential capital components of their buildings due to flooding, especially in portions of the Village of Johnson City and the Westover, Main Street Endwell, and West Corners business districts. Several property owners have reported that their homes were subject to the back flow of sewer water into their homes during the September 2011 flood event. | Existing | Flood | 1-1 1-11 | Town of Union P&CD; DPW | Medium | Medium | CDBG 10.1- DR | Short Term | High | SP, PP | New |
| 29. | Provide funds to prepare a townwide drainage study and Comprehensive Drainage Plan. The study will include a hydrologic analysis of the major watershed areas of the town and make recommendations for repairs and future capital improvement projects to minimize flood damage due to excessive runoff during significant storms. | Existing | Flood | 1-1 1-3 | Town of Union P&CD; DPW | Medium | Medium | CDBG 10.1- DR | Short Term | High | PR | New |
| 30. | Provide funding to complete an extensive field survey of the existing sanitary sewer system to determine areas of potential infiltration of ground water and/or storm water into the sewer pipe network during peak storm events, and to create a Town-wide Comprehensive Sewer Infiltration Study. | N/A | Flood | 1-1 1-3 | Town of Union P&CD; BJCJSTP, VOESTP, DPW | High | High | CDBG 10.1- DR | Short Term | Medium | PR | New |
| 31. | Provide funding to supplement a grant from New York State to prepare a Long Term Community Recovery Plan for | N/A | Flood | 1-1 1-3 1-7 | Town of Union P&CD; DPW | High | Medium | CDBG10.1- DR, NYSEMO | Short Term | Medium | PR | New |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|---------------------|--------------------------|---|--------------------|----------------|--------------------|------------|----------|---------------------|--------------------|
| | the Town of Union, including the Villages of Endicott and Johnson City. The purpose of the Long Term Community Recovery Plan is to provide a much more in-depth analysis of the impacts of the September 2011 flood event on the Town's housing and commercial industrial inventory and markets. The plan will also identify potential adaptive re-uses of properties and investigate potential funding sources for catalytic redevelopment activities. | | | | | | | | | | | |
| 32. | Provide funds to update the Town's Floodplain Management Plan, and incorporate the Villages of Endicott and Johnson City into the new plan. Neither of the two villages currently have plans. The floodplain development ordinance will also be revised as part of this project. The flood event of September 2011 impacted several areas throughout the Town that have not historically been flooded and are not currently addressed in the Town's Floodplain Management Plan. The new plan will also make recommendations for improving the Town's Floodplain Development Ordinance. | N/A | Flood | 1-1 1-3 1-7 | Town of Union P&CD; DPW | Medium | Medium | CDBG 10.1 DR | Short Term | Medium | PR | New |
| 33. | Provides funding to hire an engineering consultant to perform field surveys of flood damaged non-residential buildings for a Town-wide Floodproofing Feasibility Analysis to determine if there are cost efficient measures that can be taken to make the | Existing | Flood | 1-1 1-3 2-1 | Town of Union P&CD; CE, ED, BCDP, BCIDA | High | Medium | CDBG 10.1- DR | Short Term | Medium | PR | New |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|---|--|---------------------|--------------------------|------------------------------|--------------------|----------------|------------------------|-------------------|----------|---------------------|--------------------|
| | structures reasonably defensible from flooding. During the flood event of September 2011 a significant number of businesses and neighborhood facilities were impacted by floods, and shut down for weeks or months, causing severe disruption to the local economy. | | | | | | | | | | | |
| 34. | Provide a portion of the required 25% local match for the FEMA buyout program as well as costs for pre-demolition asbestos surveys, asbestos removal if required, demolition costs, and soft costs for a Town-wide acquisition of open space. In September of 2011, many homes in the Fairmont Park, Westover, West Corners, and South Endwell neighborhoods were flooded. 172 owners have been approved for the FEMA buyout program. | Existing | Flood | 1-1 1-2 | Town of Union P&CD; TB | High | High | CDBG10.1-DR, FEMA HMGP | Short Term | High | PP | New |
| 35. | Conduct a Town-wide acquisition for redevelopment, involving the voluntary sale of flood damaged homes in the Westover neighborhood to the Town. Once acquired, the structures will be demolished. The vacant lots will be made available for future development in a more flood resistant manner. | Existing | Flood | 1-1 1-2 1-11 | Town of Union P&CD; TOUED | High | High | CDBG 10.1-DR | Short Term DOF | High | PP | New |
| 36. | Fund a Town-wide owner occupied housing rehabilitation program for income eligible owners of single and two-family homes to undertake structural and major capital component repairs and/or replacement. Based upon an analysis of unmet housing needs the Town | Existing | Flood | 1-1 1-2 1-11 | Town of Union P&CD; CEO | High | High | CDBG 10.1-DR, Owner | Short Term | High | PP | New |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|---------------------|---------------------------|---------------------------|--------------------|----------------|---------------------|------------|----------|---------------------|--------------------|
| | has determined that there remains a need for funding to restore homes to habitable condition. | | | | | | | | | | | |
| 37. | Conduct a Town-wide multi-family rehabilitation program to provide funding on a 50% match basis for owners of flooded rental properties who undertake structural repairs or repairs to major capital building components. At least 51% of the units rehabilitated must be occupied by persons or households meeting HUD's low and moderate income requirements and where the rent is determined to be reasonable, according HUD guidelines, to the household income. The flood event of September 2011 substantially damaged a number of rental units thereby reducing the availability of affordable housing. | Existing | Flood | 1-1 1-2 1-11 | Town of Union P&CD; CEO | High | High | CDBG 10.1-DR, Owner | Short Term | High | PP | New |
| 38. | Conduct a town-wide small business program for Structural/Capital Repairs provide grants of up to \$2,000 to eligible non-residential commercial/industrial property owners for repairs necessitated by the impacts of the flood in September 2011. | Existing | Flood | 1-1 1-6 1-11 4-6 | CP&CD; TOUED | High | High | CDBG 10.1-DR | Short Term | Medium | PE, PP | New |
| 39. | Conduct a Town-wide Non-Residential Floodproofing Program to provide matching grants of up to \$15,000 to eligible non-residential commercial/industrial property owners for floodproofing measures designed to protect repairs that have been made to the structures. This program will be coordinated with the | Existing | Flood | 1-1 1-6 1-11 4-6 | Town of Union CD | High | High | CDBG 10.1-DR | Short Term | Medium | PP | New |



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|------------|--|--|--|--------------------------|---|--------------------|----------------|--|--|----------|---------------------|--------------------|
| | proposed townwide floodproofing feasibility study that will identify which buildings are reasonably defensible from flooding. | | | | | | | | | | | |
| 40. | Stop Log Closure Project - The Town of Union has received requests from numerous property owners in the Fairmont Park area regarding the construction of the final portion of the Flood Protection System previously installed. This would require a stop log closure across Watson Boulevard to the East of the existing closure. The existing closure provides protection from floodwaters approaching from the West but the area remains vulnerable during extremely high floodwater occurrences from the East. | New/ Existing | Protection for 72 residential properties, portions of 7 streets and 12 acres of commercial property, 2 acres of which are currently developed. | 1-1 1-7 1-11 | Town of Union Public Works Department: NYSOEM and FEMA | High | High | SEMO and FEMA Mitigation Programs and Town of Union Town Budget | Short Term DOF 30 weeks, after funding available | High | PP, SP | New |
| 41. | Property Buyout Program - The Town of Union has received requests from numerous residents, in the flood prone section of the planning area, regarding the possibility of another buyout program. The Town has initiated the application process to acquire funds for this purpose. The proposed project consists of a voluntary buyout program located in the 100-year flood plain in the south Endwell area. | Existing | Flood | 1-1 1-2 1-11 | Town of Union Planning/CD NYSOEM and FEMA | High | High | HMGP, SEMO and FEMA Mitigation Programs and Town of Union Town Budget | Short Term DOF 24 weeks, after funding available | High | PP | New |
| 42. | Local Waterfront Revitalization Program-Tow Rivers Greenway. The Town of Union will explore the revitalization of the waterfront within the planning area. The potential exists develop land along the Susquehanna River into a community recreational facility. | N/A | Flood | 1-1 1-3 3-1 | Town of Union Planning Department; Various governmental agencies | Medium | Medium | Available grants and Town of Union Town Budget | Long Term DOF | Medium | PP, NR | New |



SECTION 9.21: TOWN OF UNION

| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|---|--|---------------------|--|---|--------------------|----------------|---|------------------------------------|----------|---------------------|--------------------|
| 43. | Storm Drainage System Improvements - The Town of Union will continue to improve its storm sewer system by increasing capacity for portions of the system that experience problems during or immediately following hazard events. | Existing | Flood | 1-1 1-11 | Town of Union Highway and Engineering Departments; Broome-Tioga Storm Water Coalition | High | High | Federal grant opportunities and Town of Union Town Budget | On-going, expand as funding allows | High | SP | New |
| 44. | Municipal Website Improvements - The Town of Union will continue to support and promote a more powerful Internet site with the ability to enhance its information accessibility to the general public. | N/A | All | 1-2 2-1 2-2 2-4 2-5 2-6 | Town of Union Data Processing Department; Town of Union Planning and Public Works Departments | Medium | Low | Town of Union Town Budget | On-going, expand as funding allows | High | PE | New |
| 45. | Staff and Financial Resources - The Town of Union administrative staff indicates that the time needed for tasks related to hazard mitigation, emergency preparedness, storm water management, flood plain management, public outreach, etc. is on the increase. | N/A | All | 1-1 1-4 1-7 1-8 2-1 | Town Board | High | Medium | Town of Union Town Budget | On-going, expand as funding allows | Medium | PR, PE | New |
| 46. | CERT Program - The Town of Union CERT Training Program is a community outreach program intended to provide fundamental Disaster Preparedness skills to area residents, at no cost to them, so they can better protect themselves, their families, and potentially their neighbors until "first responder" help arrives. This training is a 24 hour course, delivered one evening per week over a 7-week period. | N/A | All | 3-3 4-3 4-6 | Town of Union Town Board; FEMA's CERT Program Team | High | Medium | Town of Union Town Budget and available grants | Ongoing, expand as funding allows | High | PE, ES | New |
| 47. | Critical Facility Protection - The Town of Union will continue to maintain a list of critical facilities, in and around the planning area, related to hazard | Existing | All | 1-1 4-1 | Town of Union Highway and Public Works Departments | Medium | Medium | Federal grant opportunities, Homeland Security grant | On-going, expand as funding allows | High | PP | New |



| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|--|--|--|---------------------|---------------------------------|--|--------------------|----------------|---|----------------|----------|---------------------|--------------------|
| | mitigation, emergency preparedness, or emergency response. The Town will seek to provide or improve protection of these facilities by all means available. | | | | | | | opportunities, Town of Union Budget | | | | |
| 48 | Evaluate and pursue funding for relocation of the Scarborough Drive public works facility out of the flood zone. | Existing | Flood, Severe Storm | 1-1 4-1 | Town of Union Highway and Public Works Departments | Medium | Medium | Federal grant opportunities, Town of Union Budget | Short Term DOF | High | PP | New |
| 49 (Village of Johnson City action #11.) | Install backup power supply (generator) at the Town of Union Water Booster Station located on Fairview Street, Johnson City, which is utilized to supply water to the Broome County Landfill and Airport. | Existing | All | 1-1 1-3 1-11 3-1 | Water District Broome County | High | High | Federal grant opportunities, State, County and private sector funding | Long Term DOF | Low | ES, SP | New |
| 50 | Install Door dams in Johnson City YMCA to prevent ingress of flood waters. | Existing | Flood Severe Storm | 1-1 1-5 1-11 | YMCA CD | Medium | Low | State, County, municipal and private sector funding | Short Term DOF | Low | PP | New |
| 51 | Evaluate feasibility of County/Town Airforce Plan 59 redevelopment project (former BAE facility) which included a 12-acre wood frame structure and a 27 acre site vulnerable to flooding (floodwall overtopped in 2011). | Existing | Flood, Severe Storm | 1-1 1-11 | Town of Union Planning BCIDA | Medium | Medium | Town of Union Town Budget | Short Term DOF | High | PR | New |
| Flood-1 | Purchase, relocate, or elevate structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. | | | | | | | | | | | |
| | Phase 1: Identify appropriate candidates based on cost-effectiveness versus retrofitting. | | | | | | | | | | | |
| Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. | | | | | | | | | | | | |
| | Please see above. | Existing | Flood, Severe Storm | 1-1 1-2 2-1 2-2 3-2 | Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from BCPD, NYSOEM, FEMA | High | High | FEMA Mitigation Grants | Long Term DOF | Medium | PP | New |

| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|------------|--|--|-----------------------|---|--|--------------------|--------------------------------|---|------------|----------|---------------------|--------------------|
| Flood-2 | Maintain compliance with and good-standing in the NFIP including adoption and enforcement of floodplain management requirements (e.g. regulating all new and substantially improved construction in Special Hazard Flood Areas), floodplain identification and mapping, and flood insurance outreach to the community. Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives (below). | | | | | | | | | | | |
| | Please see above. | N/A | Flood, Severe Storm | 1-1 1-2 1-4 1-5 1-6 1-7 2-1 2-2 3-2 | Municipality (via Municipal Engineer/NFIP Floodplain Administrator) with support from NYSOEM, FEMA | High | Low-Medium | Municipal Budget | On-going | High | PR, PE | New |
| Flood-3 | Conduct and facilitate community and public education and outreach for residents and businesses to include, but not be limited to, the following to promote and effect natural hazard risk reduction: <ul style="list-style-type: none"> Provide and maintain links to the HMP website, and regularly post notices on the County/municipal homepage(s) referencing the HMP webpages. Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. Use email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Work with neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding. | | | | | | | | | | | |
| | Please see above. | N/A | All Hazards, Or Flood | 1-2 1-7 1-9 2-1 2-2 3-2 3-4 4-6 | Municipality with support from Planning Partners, BCPD, NYSOEM, FEMA | Medium | Medium | Municipal Budget, HMA programs with local or county match | Short Term | Medium | PE | New |
| Flood-4 | Obtain and archive elevation certificates | N/A | Flood, Severe Storm | 1-1 1-2 1-4 1-5 4-1 | NFIP Floodplain Administrator | Medium | Low | Municipal Budget | On-going | High | PP | New |
| Flood-5 | Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0 | New and Existing | All Hazards | All Goals and Objectives | Municipality with support from Planning Partners, BCPD, NYSOEM, FEMA | High | Low – High (for 5 year update) | Municipal Budget, FEMA planning grants | On-going | High | PR | New |
| Flood-6 | Complete ongoing updates of Emergency Management Plans | New and Existing | All Hazards | 1-1 1-10 4-2 | Municipality with support from NYSOEM | Low | Low | Municipal Budget | On-going | High | PP | New |
| Flood-7 | Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations | N/A | All Hazards | 3-1 3-3 4-5 | Municipality with support from County, NYSOEM, FEMA and surrounding | Medium | Low | Municipal Budget | Short Term | High | PR, ES | New |

| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|----------------|--|--|---------------------|--|--|--------------------|----------------|---|------------------------|----------|---------------------|--------------------|
| | | | | | communities | | | | | | | |
| Flood-8 | Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping | N/A | All Hazards | 1-4 1-5 2-2 3-1 4-1 | Municipality with support from County, NYSOEM and FEMA | Medium | Medium | Municipal Budget | Short Term | Medium | PR, ES | New |
| Flood-9 | Work with regional agencies (i.e. County and SOEM) to help develop damage assessment capabilities at the local level through such things as training programs, certification of qualified individuals (e.g. code officials, floodplain managers, engineers). | N/A | All Hazards | 1-5 2-2 2-3 3-1 4-1 4-3 | Municipality with support from County, NYSOEM and FEMA | Medium | Medium | Municipal Budget, FEMA HMA and HLS grant programs | Short-Long Term DOF | Medium | PR | New |
| Flood-10 | Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: <ul style="list-style-type: none"> Support the performance of enhanced risk and vulnerability assessments for hazards of concern. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level. | | | | | | | | | | | |
| | Please see above. | N/A | All Hazards | 1-1 1-3 1-8 2-2 3-1 4-1 | Hazard Mitigation Plan Coordinator | Medium-High | Medium-High | FEMA Mitigation Grant Programs with local match | Long Term DOF | Medium | PP, PR | New |
| Severe Storm-1 | Enhance the County/community resilience to severe storms (incl. severe winter storms) by joining the NOAA "Storm Ready" program and supporting communities in joining the program. "StormReady" communities are better prepared to save lives from the onslaught of severe weather through advanced planning, education and awareness. Participation in the NOAA "StormReady" program shall include providing information on the "StormReady" program, facilitating public outreach and awareness programs, and supporting community storm risk reduction activities as appropriate. Specific actions addressed by "StormReady" participation include establishing a 24 hour Warning Point, increase number of ways EOC receives NWS warnings, increase number of ways to disseminate warnings, monitoring hydrometeorological data, providing annual weather safety talks, train weather spotters, create a formal hazardous weather plan, host annual visits by NWS to communities, etc. | | | | | | | | | | | |
| | Please see above. | N/A | Severe Storm | 1-1 1-2 2-1 | Municipality with support from County, NYSOEM | Medium | Low | Municipal Budget | Short Term DOF | Medium | PE | New |

| Initiative | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals and Objectives Met | Lead and Support Agencies | Estimated Benefits | Estimated Cost | Sources of Funding | Timeline | Priority | Mitigation Category | 2011 Action Status |
|--------------|---|--|---------------------|--------------------------|---|--------------------|----------------|--|---------------|----------|---------------------|--------------------|
| | | | | 2-2 2-6 | and FEMA | | | | | | | |
| Earthquake-1 | Obtain training and conduct rapid screening assessment of critical facilities for earthquake vulnerability. | N/A | Earthquake | 1-1 4-2 4-3 | Municipal Emergency Management, Fire, PD with support from County, NYSOEM | Medium | Medium | Municipal Budget, State and County grant opportunities | Long Term DOF | Low | PP, ES | New |
| Earthquake-2 | Develop a post-earthquake management plan to address building safety inspections, gas leaks, and other elements to protect public safety. | N/A | Earthquake | 1-11 4-5 4-6 | Municipal Emergency Management, Fire, PD with support from County, NYSOEM | Medium | Medium | Municipal Budget, State and County grant opportunities | Long Term DOF | Low | PR,ES | New |

Notes: *Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (NA) is inserted if this does not apply

Acronyms

| | | | |
|---------|--|---------|---|
| ARC | American Red Cross | NFIP | National Flood Insurance Program |
| BCDSS | Broome County Department of Social Services | NYSDEC | New York State Department of Environmental Conservation |
| BCIDA | Broome County Industrial Development Agency | NYSDOT | New York State Department of Transportation |
| BCOES | Broome County Office of Emergency Services | NYSEG | New York State Electric and Gas |
| BCPD | Broome County Planning Department and Economic Development | NYSFMSA | New York State Floodplain and Stormwater Managers Association |
| BCSWCD | Broome County Soil and Water Conservation District | NYSOEM | New York State Office of Emergency Management |
| BJCJSTP | Binghamton Johnson City Joint Sewerage Treatment Plant | P & CD | Planning and Community Development |
| CERT | Community Emergency Response Team | TOUED | Town of Union Economic Development |
| CD | Community Development | USACE | United States Army Corp of Engineers |
| CP | Community Planning | USGS | United States Geological Survey |
| DPW | Department of Public Works | VOESTP | Village of Endicott Sewer Treatment Plant |
| FEMA | Federal Emergency Management Agency | | |

Costs:

Where actual project costs have been reasonably estimated:

Low = < \$10,000

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

High = > \$100,000

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

Low = Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.

Medium = Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.



High = Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

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

Low = < \$10,000

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

High = > \$100,000

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

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

Medium = Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.

High = Project will have an immediate impact on the reduction of risk exposure to life and property.

Potential FEMA HMA Funding Sources:

PDM = Pre-Disaster Mitigation Grant Program

FMA = Flood Mitigation Assistance Grant Program

RFC = Repetitive Flood Claims Grant Program

SRL = Severe Repetitive Loss Grant Program

HMGP = Hazard Mitigation Grant Program

Timeline:

Short = 1 to 5 years. Long Term = 5 years or greater. OG = On-going program.

DOF = Depending on funding.

Notes (for Mitigation Type):

1. PR=Prevention: Government, administrative or regulatory actions or processes that influence the way land and buildings are developed and built Examples of these are acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
2. PP= Property Protection: These actions also include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
3. PE=Public Education and Awareness: Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
4. NR=Natural Resource Protection: Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. SP=Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
6. ES=Emergency Services: Actions that protect people and property, during and immediately following, a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

G.) PRIORITIZATION OF MITIGATION INITIATIVES

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits equal or exceed Costs? (Yes or No) | Is project Grant eligible? (Yes or No) | Can Project be funded under existing programs/budgets? (Yes or No) | Priority (High, Med., Low) |
|--------------|---------------------|----------|-------|---|---|---|-------------------------------|
| 1. | 4 | M | L | Y | N | Y | H |
| 2. | 4 | H | L | Y | N | Y | H |
| 3. | 4 | H | L | Y | N | Y | H |
| 4. | 4 | M | L | Y | N | Y | H |
| 5. | 3 | M | L | Y | N | N | M |
| 6. | 4 | H | M | Y | Y | Y | H |
| 7. | 3 | H | M | Y | N | Y | H |
| 8. | 2 | H | M | Y | N | Y | H |
| 9. | 2 | M | M | Y | N | Y | H |
| 10. | 3 | M | M | Y | Y | N | L |
| 11. | 2 | H | H | Y | N | Y | H |
| 12. | 2 | M | L | Y | N | Y | H |
| 13. | 3 | H | M | Y | N | Y | M |
| 14. | 1 | H | H | Y | Y | N | H |
| 15. | 2 | H | M | Y | Y | N | L |
| 16. | 3 | M | L | Y | N | Y | H |
| 17. | 3 | H | H | Y | Y | N | H |
| 18. | 3 | H | L | Y | N | Y | H |
| 19. | 3 | M | L | Y | Y | Y | H |
| 20. | 2 | H | L | Y | Y | N | M |
| 21. | 4 | M | L | Y | N | Y | M |
| 22. | 3 | H | M | Y | Y | N | M |
| 23. | 2 | H | M | Y | Y | N | H |
| 24. | 2 | H | M | Y | Y | N | M |
| 25. | 2 | H | M | Y | Y | N | M |
| 26. | 3 | M | M | Y | Y | N | M |
| 27. | 2 | M | M | Y | Y | N | H |
| 28. | 2 | M | M | Y | Y | N | H |
| 29. | 2 | M | M | Y | Y | N | H |
| 30. | 2 | H | H | Y | Y | N | M |
| 31. | 3 | H | M | Y | Y | N | M |

| | | | | | | | |
|---|-----|---|---|---|---|---|---|
| 32. | 3 | M | M | Y | Y | N | M |
| 33. | 3 | H | M | Y | Y | N | M |
| 34. | 2 | H | H | Y | Y | N | H |
| 35. | 3 | H | H | Y | Y | N | H |
| 36. | 3 | H | H | Y | Y | N | H |
| 37. | 3 | H | H | Y | Y | N | H |
| 38. | 4 | H | H | Y | Y | N | M |
| 39. | 4 | H | H | Y | Y | N | M |
| 40. | 3 | H | H | Y | Y | N | H |
| 41. | 3 | H | H | Y | Y | N | H |
| 42. | 3 | M | M | Y | Y | N | M |
| 43. | 2 | H | H | Y | Y | N | H |
| 44. | 6 | M | L | Y | N | Y | H |
| 45. | 5 | H | M | Y | N | Y | M |
| 46. | 3 | H | M | Y | N | Y | H |
| 47. | 2 | M | M | Y | Y | N | H |
| 48 | 2 | M | M | Y | Y | N | H |
| 49 (Village of Johnson City action #11.) | 4 | H | H | Y | Y | N | L |
| 50 | 3 | M | L | Y | Y | N | L |
| 51 | 2 | M | M | Y | N | N | H |
| Flood 1 | 5 | H | H | Y | Y | N | M |
| Flood 2 | 9 | H | M | Y | N | Y | H |
| Flood 3 | 8 | M | M | Y | Y | Y | M |
| Flood 4 | 5 | M | L | Y | N | Y | H |
| Flood 5 | ALL | H | H | Y | Y | Y | H |
| Flood 6 | 3 | L | L | Y | N | Y | H |
| Flood 7 | 2 | L | L | Y | N | Y | H |
| Flood 8 | 5 | M | M | Y | N | Y | M |
| Flood 9 | 6 | M | M | Y | Y | Y | M |
| Flood 10 | 6 | M | M | Y | Y | N | M |
| Sever Storm | 5 | M | L | Y | N | Y | M |
| Earthquake 1 | 3 | M | M | Y | N | Y | L |
| Earthquake 2 | 3 | M | M | Y | N | Y | L |
| | | | | | | | |

Notes: H = High. L = Low. M = Medium. N = No. N/A = Not applicable. Y = Yes.

Explanation of Priorities

High Priority = A project that meets multiple objectives (i.e., multiple hazards), benefits exceeds cost, has funding secured or is an on-going project and project meets eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation Grant Program (PDM) programs. High priority projects can be completed in the short term (1 to 5 years).

Medium Priority = A project that meets goals and objectives, benefits exceeds costs, funding has not been secured but project is grant eligible under, HMGP, PDM or other grant programs. Project can be completed in the short term, once funding is completed. Medium priority projects will become high priority projects once funding is secured.

Low Priority = Any project that will mitigate the risk of a hazard, benefits do not exceed the costs or are difficult to quantify, funding has not been secured and project is not eligible for HMGP or PDM grant funding, and time line for completion is considered long term (1 to 10 years). Low priority projects may be eligible other sources of grant funding from other programs. A low priority project could become a high priority project once funding is secured as long as it could be completed in the short term.

Prioritization of initiatives was based on above definitions: Yes

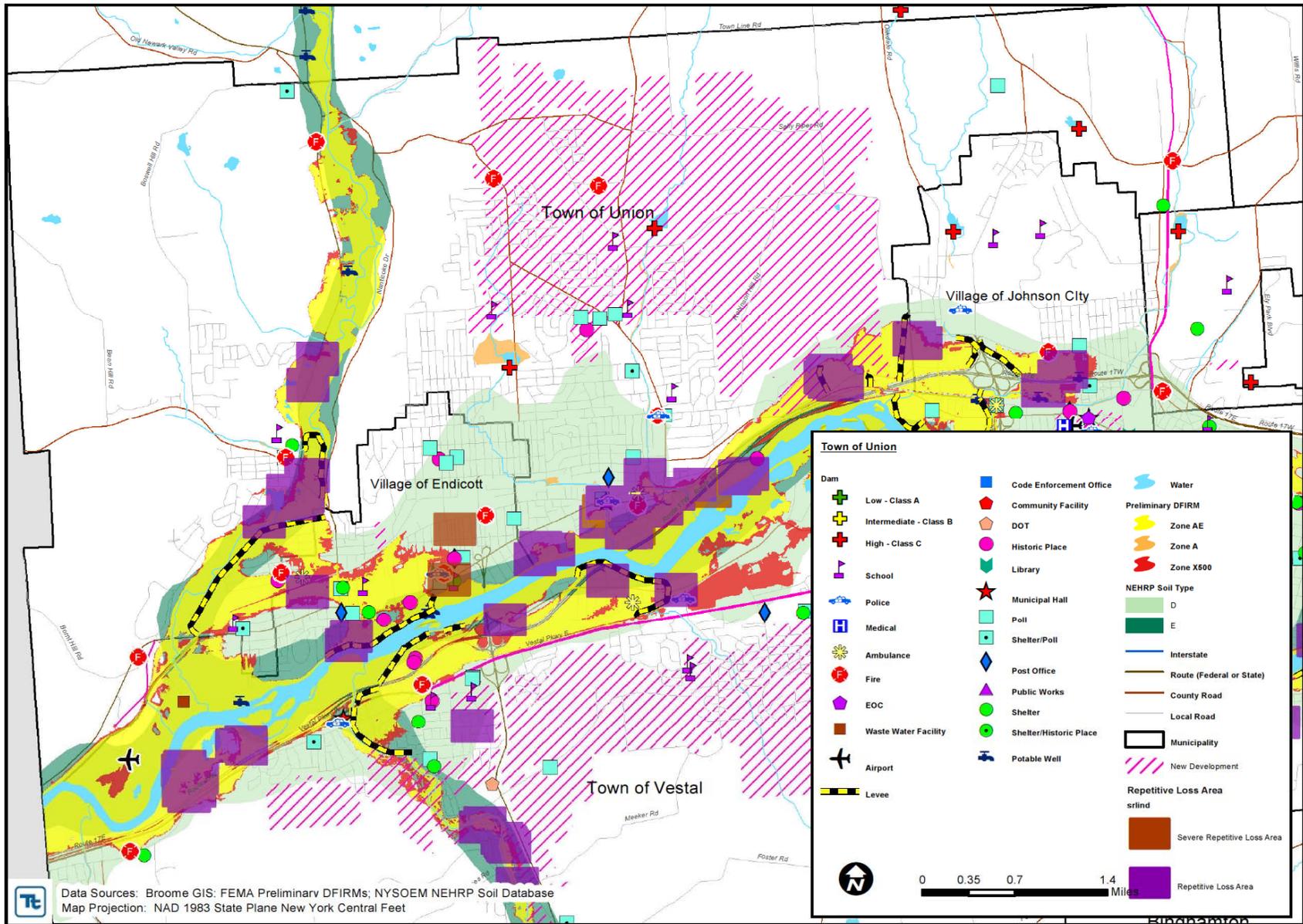
Prioritization of initiatives was based on parameters other than stated above: Not applicable.

H.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None at this time.

I.) HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map has been generated for the Town of Union to illustrate the probable areas impacted within the Town of Union and is provided on the next page. This map is based on the best available data at the time of the preparation of this Plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Union has significant exposure. The Planning Area maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.



J.) STATUS OF INCORPORATION OF MITIGATION PLANNING INTO EXISTING AND FUTURE PLANNING MECHANISMS

It is the intention of this municipality to incorporate mitigation planning as an integral component of daily municipal operations. Below is a list of planning mechanisms that have been/will be incorporated into municipal procedures.

| Planning Mechanisms | Has Been Utilized | Will Be Utilized |
|--|-------------------|------------------|
| Operating Budget When constructing upcoming budgets, Hazard Mitigation Actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the Hazard Mitigation goals and objectives. | X | |
| Capital Improvement Budget When constructing upcoming budgets, Hazard Mitigation Actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the Hazard Mitigation goals and objectives. | | X |
| Human Resource Manual Employee job descriptions may contain Hazard Mitigation Actions. | | X |
| Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes or development permitting the town will review the hazard mitigation plan and other hazard analysis to ensure consistent and compatible land use. | | X |
| Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable the town will incorporate Hazard Mitigation Actions in the development and extent of the regulations. | | X |
| Grant Applications Data and maps will be used as supporting documentation in grant applications | X | |
| Municipal Ordinances When updating municipal ordinances Hazard Mitigation will be a priority. | | X |
| Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans. | | |
| Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The will incorporate hazard resistant construction standards into the design and location of projects. | | X |
| Day to Day Operations Incorporate Hazard Mitigation Actions in daily operations and all projects will be a goal of the municipality. | X | |
| Local School Service Projects The municipality to work closely with the local school district and assist with community service projects for the service organizations. Several of the Town's Hazard Mitigation Actions can be implemented as a joint project with the school district. | | X |
| Municipal Budget- Adopted annually Municipality will look at Mitigation Actions when allocating funding. | X | |
| Economic Development- The local economic development group will utilize the identification of hazard areas when assisting new business in finding a location. | X | |

K.) ADDITIONAL COMMENTS

No additional comments at this time.

NFIP ADMINISTRATOR INPUT SHEET

1. Planning and Regulatory

The Town of Union joined the NFIP on March, 1978, and is currently an active member of the NFIP. Flood Insurance Rate Maps have been in effect for the community since March 1, 1978. *The Town of Union* is proactive in floodplain management with ordinances meeting minimum requirements. The current NYS Residential Building Code requires 2 foot elevation for residential structures above based flood elevation in SHA's. *The Town of Union* has completed Community Assistance Visits (CAV), with the most recent visit completed on May 11, 2004. As of December 2012 there is no need for a CAV. *The Town of Union* has no outstanding compliance issues.

2. Administrative and Technical Staff

The Town of Union has identified personnel to manage and uphold the *Town of Union's* compliance with the NFIP. Dedicated staff include: Deputy Commission of Public Works for Codes & Ordinances/Building Official is the Floodplain Manager. In addition, *the Town of Union* has supplementary staff for which NFIP is an auxiliary duty; personnel include Senior Building/Code Inspector, Building/Code Inspector, Commissioner of Planning and Senior Planner. Staff members (both dedicated and supplementary) complete numerous tasks in order for *the Town of Union* to be in compliance of NFIP standards. Tasks include permit reviews, building inspections, floodplain permits and flood map information.

3. Financial

As of December 31, 2011 there are 493 flood insurance policies enforced within *the Town of Union*. Of the 493 insurance policies, 103 are within the Special Flood Hazard Area (SFHA), and 390 are located outside the SFHA. Repetitive loss insurance claims have been reported in several areas within *the Town of Union* including South Endwell, Fairmont Park, and West Corners. As of December 31, 2011 there have been 60 of repetitive loss properties and 23 of severe repetitive loss properties within *the Town of Union*.

4. Educational

The Town of Union conducts numerous educational and/or outreach activities related to the NFIP. Activities include providing a yearly newsletter regarding flood insurance, mitigation activities, flood smart practices, evacuation procedures, and flood zone determinations. The Town is a CRS community with a ranking of class 8. The Town's website provides information on flooding and links to FEMA, the Town supplies flood manuals to 3 local libraries.

5. Actions to Strengthen the Program

The Town of Union has taken numerous steps to strengthen the NFIP program and its administration. Actions include the Town requires a special permit for activities within the floodplain from the Planning Board. The Town promotes the NFIP in its outreach programs and encourages participation for property owners.