



## 9.2 City of Norwich

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

### 9.2.1 Hazard Mitigation Plan Point of Contact

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

Primary Point of Contact	Alternate Point of Contact
A. Wesley Jones, Directory of Emergency Management One City Plaza, Norwich, NY 13815 Phone: 607-334-1299 <a href="mailto:awjones@norwichnewyork.net">awjones@norwichnewyork.net</a>	Christine A. Carnrike, Mayor One City Plaza Norwich, NY 13815 607-334-1209 Office <a href="mailto:mayor@norwichnewyork.net">mayor@norwichnewyork.net</a>

### 9.2.2 Municipal Profile

This section provides a summary of the community.

#### Population

According to the U.S. Census, the 2010 population for the City was 7,190.

#### Location

The City of Norwich is located in picturesque upstate New York, nestled in the Chenango River Valley and has a total area of just over 2.0 square miles. The river winds south along the eastern edge of the city. Along the western border, the Canasawacta Creek flows south, until it unites with the Chenango River at the southern city limits.

Regionally, Norwich lays almost dead center of the "upside down triangle" that can be drawn connecting the cities of Syracuse, Albany, and Binghamton, along Interstates 90, 88, and 81, respectively. The City is located in the center of this triangle, on the intersection of State Highway 12 and State Highway 23.

Norwich is located less than an hour from the greater Binghamton area, Oneonta, Cortland and Utica. Syracuse is just over an hour away and Albany and Rochester are two hours from Norwich.

#### Brief History

The first settlers arrived around 1788. The Town of Norwich was formed in 1793 from the Towns of Union (now in Broome County) and Bainbridge in southeastern Chenango County. Afterwards, Norwich, as a "mother town" of the county, lost substantial territory in the formation of new towns. In 1806, Norwich gave up territory to form the Towns of Pharsalia, Plymouth and Preston. More of Norwich was lost in 1807 to form part of New Berlin and part of the Town of Columbus. In 1808 and 1820, Norwich exchanged territory with the Town of Preston.

The community of Norwich set itself off from the town in 1816 by incorporating as a village, later becoming the City of Norwich in 1914.

#### Governing Body Format

The City is governed by a six-member Common Council and a part-time Mayor form of government. This governing body will assume responsibility for adoption and implementation of this plan. The Mayor’s





position is part-time and has a two-year term. The Common Councilors are also part-time and serve four-year terms. Three Council seats are up for election every other November.

The City’s Charter provides for a strong Common Council, weak Mayor System. While the Mayor controls the day-to-day operations of the City, all ordinances, laws and budget matters are ultimately decided by the Common Council. The Mayor leads the Council meetings but only has a vote in the event of a tie. All City department heads report to the Mayor on a day-to-day basis.

The City is also represented on the County level by two City supervisors who are elected every two years. One Supervisor serves Wards 1, 2 and 3 in the City (primarily the western portion of the City) and the other represents Wards 4, 5 and 6 (predominately the eastern section). The Supervisors only act as a representative for the City on the County level. They do not have a vote at the City level or serve on any City committees.

**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 9.2.8 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.2-1. Growth and Development**

Property Name	Type (Residential or Commercial)	Number of Structures	Parcel ID(s)	Known Hazard Zone*	Description / Status
Norwich Shoe Apartments	Residential	34 units, 4 structures	136.41-1-7 (Main Structure)	None	Residential

\* Only location-specific hazard zones or vulnerabilities identified.

**9.2.3 Natural Hazard Event History Specific to the Municipality**

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

**Table 9.2-2. Hazard Event History**

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
September 7-11, 2011	Tropical Storm Lee	DR-4031 EM-3341	Yes - IA, PA	Yes – IA and PA. Approximately \$1M in PA damage. Multiple road closures (approximately 20 streets for 24-48 Hours. City Wastewater Treatment Plant – \$850,000 damage. Various other “small projects” – FEMA standard. Total PA damage: approximately \$1 million. Numerous private structures with basement flooding. Overtime and cost for cleanup.
April 26 – May 8, 2011	Severe Storms, Flooding, Tornado and Straight Line Winds	DR-1993	Yes - PA	Yes – PA. Multiple evacuations. No shelter, injuries, or death. Multiple road closures (approximately 12 streets for 24-48 Hours. County owned bridge connecting Pleasant Street in the City to Red Mill Hill Road in the Town completely destroyed. Numerous private structures with basement flooding. Overtime and cost



Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses for cleanup.
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Notes:

- EM Emergency Declaration (FEMA)
- FEMA Federal Emergency Management Agency
- DR Major Disaster Declaration (FEMA)
- IA Individual Assistance
- N/A Not applicable
- PA Public Assistance

### 9.2.4 Hazard Vulnerabilities and Ranking

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

#### Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for City of Norwich.

**Table 9.2-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a</sup>	Probability of Occurrence <sup>c</sup>	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Drought	Damage estimate not available	Occasional	14	Medium
Extreme Temperature	Damage estimate not available	Frequent	39	High
Flood	1% Annual Chance: \$88,441,000	Frequent	42	High
Severe Storm	100-Year MRP: \$0 500-year MRP: \$119,759 Annualized: \$1,542	Frequent	48	High
Winter Storm	1% GBS: \$0 5% GBS: \$0	Frequent	48	High
Wildfire	Estimated Value in the WUI: \$1,021,656,000	Occasional	28	Medium
Infestation	Damage estimate not available	Frequent	39	Low
Natural Gas	Damage estimate not available	Frequent	21	Medium

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
  - b. The valuation of general building stock and loss estimates was based on the custom inventory developed for Chenango County and probabilistic modeling results and exposure analysis as discussed in Section 5.
  - c. Frequent = Hazard event is likely to occur within 25 years.  
Occasional = Hazard event is likely to occur within 100 years  
Rare = Hazard event is not likely to occur within 100 years
  - d. The estimated potential losses for Severe Storm are from the HAZUS-MH probabilistic hurricane wind model results. See footnote c.
- GBS = General building stock  
MRP = Mean return period  
RCV = Replacement cost value



### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the municipality.

**Table 9.2-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in the 1% Flood Boundary (3)
City of Norwich	285	142	\$1,391,879.27	13	0	230

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of April 30, 2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 4/30/2014.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case

### Critical Facilities

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

**Table 9.2-5. Potential Flood Losses to Critical Facilities**

Name	Municipality	Type	Exposure	Potential Loss from 1% Flood Event		
			1% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent <sup>(2)</sup>
Valley View Manor Nursing Home	Norwich (C)	Senior	X	74.13	100	
Chenango Valley Home & Apartments	Norwich (C)	Senior	X	15.1	88.62	
Norwich High School	Norwich (C)	Shelter	X	42.21	48.68	
Norwich Waste Water Treatment Plant	Norwich (T) *City Owned	Infrastructure	X	40		
Norwich Water Filter Plant	Norwich (T) *City Owned	Infrastructure	X	40		
Chenango Valley Home & Apartments	Norwich (C)	Senior	X	15.1	88.62	
Perry Browne School	Norwich (C)	Shelter	X	0		

Source: HAZUS-MH 2.1

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

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

Note:

NA = Not applicable;

NP = Not provided by HAZUS;

x = Facility located within the DFIRM boundary.

- = No results generated in HAZUS.

Please note it is assumed the wells have electrical equipment and openings are three-feet above grade.





### Other Vulnerabilities Identified by Municipality

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

- The major problem areas in our community are along the Canasawacta Creek on the west and south sides of the City and the Chenango River on the east side of the City. Both areas have suffered from repetitive losses related to flooding, particularly in the last eight years. There's been damage to city infrastructure, including parks and the city pool, and also damage to dozens of houses. One property was bought out in a state buyout program after suffering unrepairable damage.
- In addition, the city's wastewater treatment plant, about a mile south of the city has suffered repetitive, and significant damage from flooding. In the latest flood in 2011, the plant suffered approximately \$800,000 in damages. This is the third major flood to impact the plant since 2005.
- The Perry Browne School is located in the Special Flood Hazard Area. While it has not suffered structural damages to date due to flooding, major flood events have threatened the structure and future risk to flooding is identified as a concern.
- There have been no injuries or loss of life in the City due to flooding in the past eight years.

### 9.2.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

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

### Planning and Regulatory Capability

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

Table 9.2-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Y/N)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, date of adoption, name of plan, explanation of authority, etc.)
Building Code	Y	Local, State	Code Enforcement	NYS Building Code Orig. 1984; Current 2003
Zoning Ordinance	Y	Local	Code Enforcement, Planning	Chapter 575 City Zoning Ordinance adopted 1981
Subdivision Ordinance	Y	Local	Code Enforcement, Planning	Chapter 490 Adopted 1962
NFIP Flood Damage Protection Ordinance	Y	Federal, State, Local	Code Enforcement	Chapter 273
NFIP - Freeboard	Y	State, Local	Code Enforcement	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types.
NFIP - Cumulative Substantial Damages	N	Local		



Table 9.2-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Y/N)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, date of adoption, name of plan, explanation of authority, etc.)
Special Purpose Ordinances (e.g. wetlands, critical or sensitive areas)	Y	Local	Code Enforcement, Planning	Incorporated in NYS Building Codes and City Zoning Ordinance Chapter 281 – Freshwater Wetlands (adopted 1976)
Growth Management	N			
Floodplain Management / Basin Plan	N			
Stormwater Management Plan/Ordinance	N			
Comprehensive Plan / Master Plan	Y	Local	Mayor’s Office/Planning Department/Planning Commission	Adopted December 2002
Capital Improvements Plan	N			
Site Plan Review Requirements	Y	Local	Code Enforcement	Adopted 1981
Habitat Conservation Plan	N			
Economic Development Plan	N			
Emergency Management / Response Plan	Y	Local	Maintained by Emergency Management Officer	Updated 2009 Chapter 44
Post Disaster Recovery Plan	Yes	County	Chenango County EMS	
Post Disaster Recovery Ordinance	N			
Real Estate Disclosure req.	Y	State	Planning Department	NYS Law
Other (e.g. steep slope ordinance, local waterfront revitalization plan)	N			

- (1) Chenango County Planning Commission has review authority on certain actions. If they disapprove an action, local Zoning Board can approve with a greater majority and present findings.
- (2) NYS Subdivision laws provide a general framework, but allow room for local ordinances and interpretation.

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the City of Norwich.

Table 9.2-7. Administrative and Technical Capabilities

Staff/ Personnel Resources	Available (Y or N)	Department/ Agency/Position
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Planning/Community Development/City of Norwich/Planning Specialist
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Codes Enforcement Officer/City of Norwich/Code Officer
Planners or engineers with an understanding of natural hazards	N	
NFIP Floodplain Administrator	Y	Codes Enforcement Officer/City of Norwich/Code Officer – Jason Lawrence





Staff/ Personnel Resources	Available (Y or N)	Department/ Agency/Position
Surveyor(s)	N	
Personnel skilled or trained in “GIS” applications	Y	A Wesley Jones, Emergency Management/ City of Norwich; Todd Dreyer, Planning Specialist, City of Norwich
Scientist familiar with natural hazards in the County.	Y	Chenango County Soil & Water Conservation District
Emergency Manager	Y	Emergency Management Office/City of Norwich/Director of Emergency Management
Grant Writer(s)	Y	Planning/Community Development/City of Norwich/Planning Specialist/Cornell Cooperative Extension
Staff with expertise or training in benefit/cost analysis	N	

### Fiscal Capability

The table below summarizes financial resources available to the City of Norwich.

**Table 9.2-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community Development Block Grants (CDBG)	Yes (not applicable to most projects in this plan)
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact Fees for homebuyers or developers of new development/homes	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Federal and State grant programs (e.g. FEMA, NYS DHSES, NYSDEC)	Yes
Other	Yes

### Community Classifications

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

**Table 9.2-9. Community Classifications**

Program	Classification	Date Classified
Community Rating System (CRS)	Not Participating	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	N/A
Public Protection	N/A	N/A
Storm Ready	Participating	April 2001
Firewise	Not Participating	N/A

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

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are





used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

### **National Flood Insurance Program**

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The following section provides details on the National Flood Insurance Program (NFIP) as implemented within the municipality:

#### **NFIP Floodplain Administrator**

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Jason Lawrence, CFM, Code Enforcement Official

#### **Program and Compliance History**

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City of Norwich joined the NFIP in 1987, and is currently an active member of the NFIP. The current effective Flood Insurance Rate Maps are dated November 26, 2010. The community's Flood Damage Prevention Ordinance (FDPO), found at Chapter 273 of the local code, was last updated on October 19, 2010.

As of April, 2014 there are 285 policies in force, insuring \$31.9 million of property with total annual insurance premiums of \$282,498.

The community is currently in good standing in the NFIP and has no outstanding compliance issues. City of Norwich has completed Community Assistance Visits (CAV), with the most recent visit completed within the last five to six years.

#### **Loss History and Mitigation**

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Since 1978, 17 claims have been paid totaling \$ 1.7 million. As of April, 2014 there are 13 Repetitive Loss and no Severe Repetitive Loss properties in the community.

Almost all damage in the City has been to basements with approximately 1-4 ft. of water which impacted furnaces and hot water heaters. One trailer on the corner of Prentice Street and O'Hara Drive was significantly damaged in 2006 and subsequently removed in a state buyout program. If damage to a property was sustained due to flooding, that information is kept in the individual property files and not a flood-specific folder. No digital files are kept and in order to know flood damaged properties.

City would have to review each individual property file.





Substantial Damage estimates are conducted by A. Wesley Jones for the City. City-owned infrastructure damaged during recent storms included the sewer treatment plant and the public pool. Grant funding for mitigation has never been awarded and the source of funding for property owners to replace furnaces and hot water heaters is unknown.

### Planning and Regulatory Capabilities

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The community Flood Damage Prevention Ordinance (FDPO) was last updated on October 19, 2010, and is found at Chapter 273 of the local code.

Current floodplain management regulations meet FEMA and New York minimum requirements. Additional regulations and ordinances support floodplain management in the City of Norwich include the floodplain review questionnaire provided when construction takes place in the floodplain.

### Administrative and Technical Capabilities

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The community FDPO identifies the Code Enforcement Officer as the local NFIP Floodplain Administrator, currently Jason Lawrence, for which floodplain administration is an auxiliary duty.

In addition to the NFIP FPA, the community has supplementary staff for which NFIP is an auxiliary duty; personnel including the Code Enforcement Officer's technical assistant, Amy Donnison. Ms. Donnison is trained in Code Enforcement and assists Mr. Lawrence with the implementation of the NFIP in the City of Norwich.

Duties and responsibilities of the Construction Official/NFIP Administrator are flood zone construction questionnaires, inspections, permit reviews, GIS, education and outreach.

No damage has been reported on the first floor of dwellings. Damages have been only to basements with approximately 1-2 feet of water which have impacted furnaces and hot water heaters. If damage to a property was sustained due to flooding, that information is kept in the individual property files and not a flood-specific folder. No digital files are kept and in order to know flood damaged properties, the

City would have to review each individual property file.

Substantial Damage estimates are conducted by A. Wesley Jones for the City. City-owned infrastructure damaged during recent storms included the sewer treatment plant and the public pool. Grant funding for mitigation has never been awarded and the source of funding for property owners to replace furnaces and hot water heaters is unknown.

Jason Lawrence, CFM, feels he is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator. Jason Lawrence is a certified in floodplain management and attends regular continuing education programs for code enforcement. Questions or concerns on floodplain management have been directed to NYS DEC.

### Public Education and Outreach

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In the City of Norwich, the following education and/or outreach activities are activities related to the NFIP: Elevation Certificate completion, paperwork, walk-ins, and word of mouth amongst residents that the Code Enforcement Official provides assistance with floodplain needs.

Duties and responsibilities of the Construction Official/NFIP Administrator are flood zone construction questionnaires, inspections, permit reviews, GIS, education and outreach.



### **Actions to Strengthen the Program**

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In the City of Norwich, the following education and/or outreach activities are activities related to the NFIP: Elevation Certificate completion, paperwork, walk-ins, and word of mouth amongst residents that the Code Enforcement Official provides assistance with floodplain needs.

Duties and responsibilities of the Construction Official/NFIP Administrator are flood zone construction questionnaires, inspections, permit reviews, GIS, education and outreach.

### **Integration of Hazard Mitigation into Existing and Future Planning Mechanisms**

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For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

#### **Planning**

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The City will update their existing Comprehensive Emergency Management Plan once the County completes updating their plan.

The City updated their Comprehensive Plan in 2014. A comprehensive plan provides goals, objectives, guidelines and policies for the immediate and long-range protection, enhancement growth and community development. The updated plan contains seven goals with subsequent actions.

#### **Regulatory and Enforcement (Ordinances)**

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The City has their ordinances available on their website. Please visit <http://ecode360.com/NO0235> to see the City of Norwich's codes and ordinances, including their flood damage prevention ordinance.

#### **Education and Outreach**

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The City's website also has 'Norwich News' board that holds information on current events, City meetings, and public health and safety advisories. The City also has a 'Weather and Emergency Info' page on their website that displays current weather information, watches and warnings. The City of Norwich/Chenango County Emergency Operations Center has several social media outlets that provide the public information regarding weather and public health and safety advisories.

The City continues to utilize and promote a mass notification system that allows us to email, text or call residents in the event of an emergency. This system has been used multiple times for reverse notifications during potential flood situations. All alerts are also automatically posted to our emergency management Twitter and Facebook pages.

The City and County joined together to develop a smartphone app for Android and iOS phones. This allows the City and County to send push notifications to those who have downloaded our app.

All City fire, Police, Emergency Management and Public Works employees receive ICS/NIMS training consistent with the NIMSCast requirements.



### 9.2.6 Mitigation Strategy and Prioritization

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

#### Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2008 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under ‘Capability Assessment’ presented previously in this annex.

Table 9.2-10. Past Mitigation Initiative Status

Description	Status	Review Comments
CN-1: Re-evaluate and update City’s existing Comprehensive Emergency Management Plan (CEMP)	Continuous	The City is currently working with the County, which is in the process of updating their CEMP (County Emergency Management Plan). Once complete, the City will update its plan so the two are consistent.
CN-2: Install 3 stream gauges for flood monitoring along the Chenango River (1) and Canasawacta Creek (2)	Completed	This project was completed in 2008 and gauges are operating well. They have been instrumental, particularly in 2011, in helping emergency management officials provide early warning to residents. The gauge data is also made public on a City website, a City/County emergency management smartphone app and was the first non-federal gauges to be displayed on the National Weather Service website.
CN-3: Purchase brush fire truck	Completed	The Norwich Volunteer Firefighters Association used trust funds to purchase a brush truck for the department. The vehicle was put in service in early 2016.
CN-4: Implement ICS and NIMS training for employees	Continuous	All City fire, Police, Emergency Management and Public Works employees receiving ICS/NIMS training consistent with the NIMSCast requirements.
CN-5: Upgrade emergency Citywide alert and communications system	Continuous	This is a continually evolving project based on current technologies. The City and County joined together to develop a smartphone app for Android and iOS phones. We are able to send push notifications to those who have downloaded our app. We also continue to utilize and promote a mass notification system that allows us to email, text or call residents in the event of an emergency. This system has been used multiple times for reverse notifications during potential flood situations. All alerts are also automatically posted to our emergency management Twitter and Facebook pages.
CN-6: Update/maintain emergency and IT related infrastructure	Continuous	The City and County run a joint emergency operations center in the Norwich Police Department building. We continually evaluate our IT and infrastructure needs and upgrade as necessary. The entire police department building is currently undergoing a \$27,000 IT upgrade which will replace the entire infrastructure and provide several enhancements for the emergency





**Table 9.2-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
		operations center.
CN-7: Continue tree trimming and removal for dead and dying trees	Continuous	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of City operations.
CN-8: Map the City’s infrastructure (using GIS, etc.)	Continuous	This project is being completed by the Public Works Department in sections as funding is available.
CN-9: Replace City water filter process plant in new location which will change surface/ground water ratio	In Progress - 10% complete	The City has received grants and loans to complete this project. It is currently in the engineering phase and work is expected to start in 2015.
CN-10: Replace existing manhole covers with anti-inflow devices	Completed	This project was completed and the desired objectives were met.
CN-11: Consider non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as repetitive loss, such as acquisition/relocation, or elevation depending on feasibility. The parameters for feasibility for this initiative would be: funding, benefits versus costs and willing participation of property owners.	Ongoing; include in the 2014 Plan Update	An amended version of this initiative is being carried forward in the updated strategy. Implementation is supported by specific initiatives in the updated strategy, including participation in related county-led initiatives.
CN-12: Retrofit flood-prone roadways (or other such infrastructure) that are considered to be critical infrastructure	Ongoing / Continuous; include in the 2014 Plan Update	A modified version of this initiative is being carried forward.

**Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy**

Through a state buyout program the City acquired a property on the corner of Prentice Street and O'Hara Drive. The structures on the property were removed and the land was cleared. The property was sold to an adjoining landowner with a lifetime deed restriction requiring the property to remain as a “green area” with no structural development.

The City has also been exploring options for fixing the repetitive losses at the wastewater treatment plant. We had considered submersible pumps for many years but it has been determined they would not work due to lower flow capacity. As a result, another option has been explored and is contained in our mitigation initiatives.

The City removed a concrete dam on the Canasawacta Creek that was the original city pool back in the early 1900s. This dam was known to back up sediment and cause flooding issues for people living along the Canasawacta Creek north of that area.

During previous disasters minor mitigation projects have been completed in the course of fixing damage. For instance, the City, using FEMA funds, put in a backstop that prevents water from flowing back into the municipal pool during high water events and causing damage to the pumps. While damage can still be sustained if the water overflows the banks, this measure could prevent issues when the Canasawacta Creek reaches bank full but does not go over.



### **Proposed Hazard Mitigation Initiatives for the Plan Update**

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

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

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



**Table 9.2-11. Proposed Hazard Mitigation Initiatives**

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
CNR-1	Upper Reservoir Dredging: Dredge the Upper Reservoir, to allow more water capacity, particularly during heavy rain and water flow times.										
	See above.	Existing	Flood, Severe Storm	O-1, O-5, O-7	City of Norwich DPW, Emergency Management	High – Reduced flooding throughout City affecting both structures and infrastructure	High ~\$350k	TBD	Long-term DOF	High	SIP, NRP
CNR-2	Citywide Water and Sewer Line Survey: Use special video cameras to explore potential problem areas in the City's water and sewer lines. This helps find problem areas before they become larger issues. It also ensures full capacity, particularly during flood events by making sure there is nothing blocking the lines.										
	See above.	Existing	Flood, Severe Storm	7, 8	City of Norwich DPW	Improved understanding of infrastructure problems identifying effective mitigation measures	\$30k/yr.	Local budget	Ongoing	medium	SIP
CNR-3	WWTP Flood Mitigation: Install a stabilization pond to receive wastewater and then build a new structure on higher ground to incorporate the city's screw pumps for processing wastewater. Assure that the mitigation efforts for this critical facility address protection to the 500-year flood event or “worst damage scenario”.										
	See above.	Existing	Flood, Severe Storm	O-7, O-11	City of Norwich DPW	Reduced damage to and continued operation of critical facility; potential environmental impacts	High - \$4M	Grant programs (FEMA HMA, NYS DEC, EPA); City Funds	Long-term DOF	medium	SIP



**Table 9.2-11. Proposed Hazard Mitigation Initiatives**

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
CNR-4 (old CN-12)	Residential Floodproofing: Encourage residents to flood proof existing structures, particularly basements, and seek grants to provide funding for residents to complete such work.										
	See above.	Existing	Flood, Severe Storm	7,10,13	City of Norwich Code Enforcement, Emergency Management	Reduced vulnerability of private property to flood damage	Low – Public education and outreach	City Budget for education and outreach	Short (Year 1)	High	EAP, SIP
CNR-5 (old CN-11)	Support and participate in Federal, State and County-led programs and initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), specifically: <ul style="list-style-type: none"> <li>Attend regional workshops, trainings and continuing education as made available by the County with FEMA, ISO and NYS DHSES support, and as appropriate for the community, anticipated to included: NFIP for Insurance Agents, Lending Institutions and Realtors; Floodplain Management and the Certified Floodplain Managers (CFM) certification.</li> <li>Public education and awareness program for floodplain residents.</li> <li>Updates to NFIP floodplain mapping.</li> <li>Promotion of “Firewise” programs in the County.</li> <li>Establishment of an interagency program involving Public Health/DSS/Area Agency on Aging to identify vulnerable populations (elderly, homebound, homeless), and the development/enhancement of plans, programs and facilities to meet the specific needs of these populations.</li> </ul>										
	See above	New and Existing	All Hazards	All Objectives	Chenango County, as supported by relevant local department leads	High (improved mitigation and risk-reduction, and emergency management capabilities)	Low-Medium (locally)	Local (staff resources)	Short	High	LPR, EAP
CNR-6	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with 13 repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option (in progress). Phase 2: Work with the property owners to implement selected action based on available funding and local match availability.										
	See above.	Existing	Flood, Severe Storm		Engineering via NFIP FPA with NYS DHSES,	High	High	FEMA Mitigation Grant	Ongoing (outreach and specific)	High	SIP





**Table 9.2-11. Proposed Hazard Mitigation Initiatives**

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category
			Wildfire, Severe Winter Storm		FEMA support			Programs and local budget (or property owner) for cost share	project identification); Long term DOF (specific project application and implementation)		

Notes:

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

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

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued in 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued in 2015)

Timeline:

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

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

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate

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.







Costs:

to cover the costs of the proposed project.

Benefits:

Mitigation Category:

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



Table 9.2-12. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
CNR-1	Upper Reservoir Dredging	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
CNR-2	Citywide Water and Sewer Line Survey	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Medium
CNR-3	WWTP Flood Mitigation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Medium*
CNR-4	Residential Floodproofing	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
CNR-5	Support and participate in Federal, State and County-led programs and initiatives	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
CNR-6	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation	1	1	1	1	0	0	0	0	0	1	1	1	1	0	8	High

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

\*This would be high but it is an idea at this point, not a shovel ready project. These mitigation efforts shall address protection to the 500-year flood event or “worst damage scenario” for this critical facility.



### **9.2.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

### **9.2.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the City of Norwich that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the City of Norwich has significant exposure. Figure 9.2-1 illustrates the hazard area extent and location for the City.

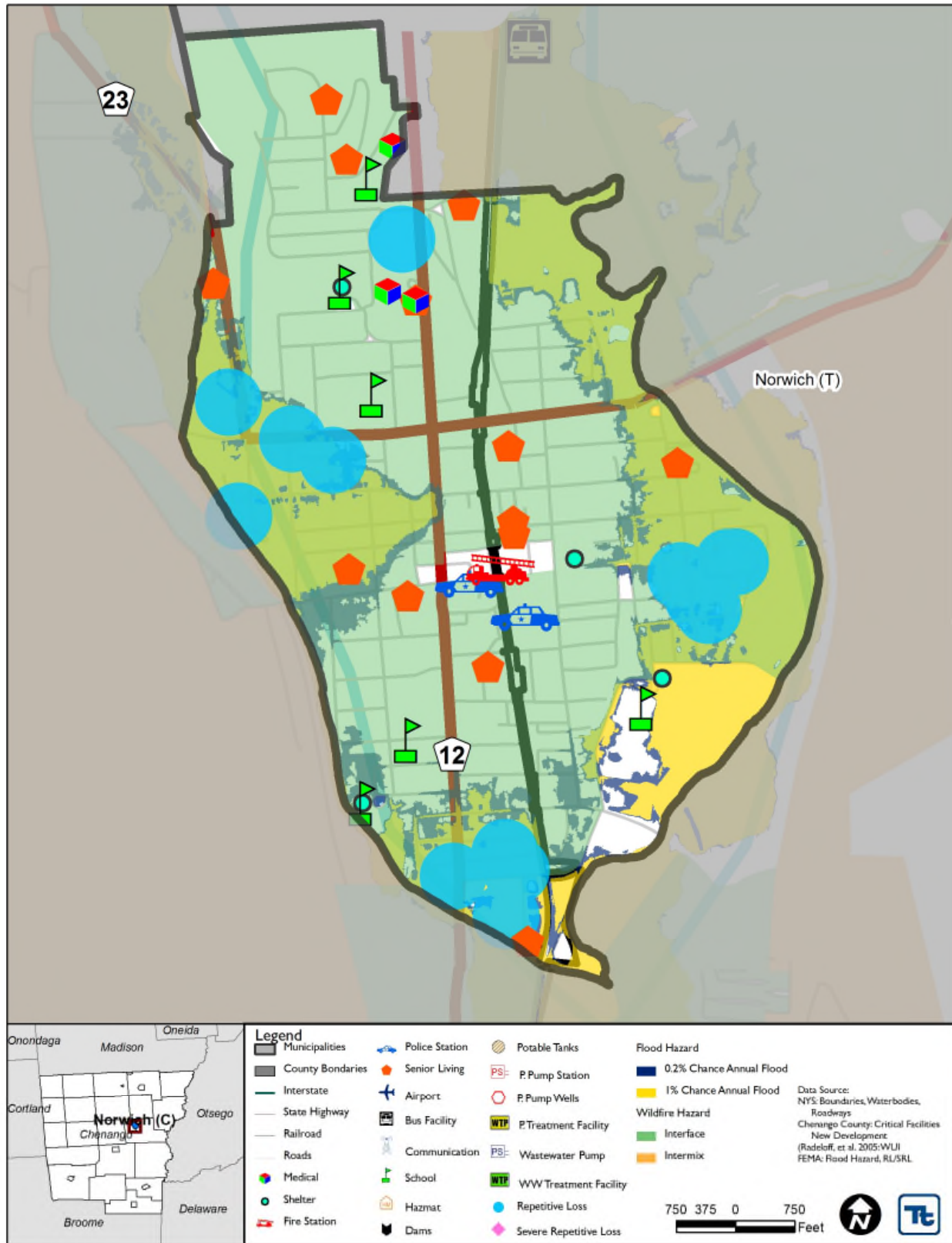
### **9.2.9 Additional Comments**

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None at this time.



Figure 9.2-1. City of Norwich Hazard Area Extent and Location Map





Name of Jurisdiction: City of Norwich  
 Number: CNR - 1  
 Mitigation Action/Initiative: Upper Reservoir Dredging

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood, Severe Storm
<b>Specific problem being mitigated:</b>	Location: City's Upper Reservoir, located on State Highway 23 east (Tanner Hill), Town of Norwich Problem: The City has an Upper and Lower Reservoir at this location, the primary source of the City's gravity feed water system. The Upper Reservoir is 50% silted in. It is known that the City reservoirs, feeding into Ransford Creek and then into the Chenango River, cause extensive water runoff and flood issues for the City. In fact, it has been documented in several floods that the Chenango River crests above and below Norwich but continues to rise in the City for about 12 additional hours due to this runoff.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Do nothing – current problem continues 2. No other feasible projects/actions were identified 3.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The proposal project is to dredge the Upper Reservoir. This project would allow more water capacity, particularly during heavy rain and water flow times.
<b>Mitigation Action/Project Type</b>	SIP, NRP
<b>Objectives Met</b>	O-1, O-5, O-7
<b>Applies to existing structures/infrastructure, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	High – Reduced flooding throughout City affecting both structures and infrastructure
<b>Estimated Cost</b>	\$350,000
<b>Priority*</b>	High (Tier I)
Plan for Implementation	
<b>Responsible Organization</b>	City of Norwich DPW, Emergency Management
<b>Local Planning Mechanism</b>	Comprehensive Emergency Management Plan
<b>Potential Funding Sources</b>	TBD
<b>Timeline for Completion</b>	Long-term DOF
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)





Action Number: CNR - 1  
 Action Name: Upper Reservoir Dredging

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety		
Property Protection		
Cost-Effectiveness		
Technical		
Political		
Legal		
Fiscal		
Environmental		
Social		
Administrative		
Multi-Hazard		
Timeline		
Agency Champion		
Other Community Objectives		
<b>Total</b>		
<b>Priority (High/Med/Low)</b>	High	



**Name of Jurisdiction:** City of Norwich  
**Number:** CNR-3  
**Mitigation Action/Initiative:** WWTP Flood Mitigation

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood, Severe Storm
<b>Specific problem being mitigated:</b>	Location: Wastewater Treatment Plant, Portelli Drive, Town of Norwich Problem: Flooding at the WWTP results in significant and repetitive damage to the screw pumps, the need to rent high capacity pumps to keep the plant online during flooding, and risks having wastewater dumped into the Chenango River. In the latest flood in 2011, the plant suffered approximately \$800,000 in damages. This is the third major flood to impact the plant since 2005.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Do nothing – current problem continues 2. No other feasible projects/actions were identified 3.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Install a stabilization pond to receive wastewater and then build a new structure on higher ground to incorporate the city's screw pumps for processing wastewater. Assure that the mitigation efforts for this critical facility address protection to the 500-year flood event or “worst damage scenario”.
<b>Mitigation Action/Project Type</b>	SIP
<b>Objectives Met</b>	O-7, O-11
<b>Applies to existing structures/infrastructure, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Reduced damage to and continued operation of critical facility; potential environmental impacts
<b>Estimated Cost</b>	High - \$4M
<b>Priority*</b>	Medium
Plan for Implementation	
<b>Responsible Organization</b>	City of Norwich DPW
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	Grant programs (FEMA HMA, NYS DEC, EPA); City Funds
<b>Timeline for Completion</b>	Long-term DOF
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)



Number: CNR-3  
 Mitigation Action/Initiative: WWTP Flood Mitigation

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety		
Property Protection		
Cost-Effectiveness		
Technical		
Political		
Legal		
Fiscal		
Environmental		
Social		
Administrative		
Multi-Hazard		
Timeline		
Agency Champion		
Other Community Objectives		
<b>Total</b>		
<b>Priority (High/Med/Low)</b>	Medium	





Name of Jurisdiction: City of Norwich  
 Action Number: CNR-4  
 Action Name: Residential Floodproofing

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood, Severe Storm
<b>Specific problem being mitigated:</b>	The town has many residential properties vulnerable to flooding, particularly basements.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Do nothing – current problem continues
	2. No other feasible projects/actions were identified
	3.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Encourage residents to flood proof existing structures, particularly basements, and seek grants to provide funding for residents to complete such work.
<b>Mitigation Action/Project Type</b>	EAP, SIP
<b>Objectives Met</b>	7,10,13
<b>Applies to existing structures/infrastructure, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Reduced vulnerability of private property to flood damage
<b>Estimated Cost</b>	Low – Public education and outreach
<b>Priority*</b>	High (Tier I)
Plan for Implementation	
<b>Responsible Organization</b>	City of Norwich Code Enforcement, Emergency Management
<b>Local Planning Mechanism</b>	NFIP Flood Damage Prevention Ordinance; public outreach programs
<b>Potential Funding Sources</b>	City Budget for education and outreach
<b>Timeline for Completion</b>	Short (Year 1)
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)



Action Number: CNR-4  
 Action Name: Residential Floodproofing

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety		
Property Protection		
Cost-Effectiveness		
Technical		
Political		
Legal		
Fiscal		
Environmental		
Social		
Administrative		
Multi-Hazard		
Timeline		
Agency Champion		
Other Community Objectives		
<b>Total</b>		
<b>Priority (High/Med/Low)</b>	High	