



## 9.31 VILLAGE OF WAPPINGERS FALLS

This section presents the jurisdictional annex for the Village of Wappingers Falls.

### 9.31.1 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
Matt Alexander, Mayor 2582 South Ave, Wappingers Falls, NY 12590 845-297-8773 x6 <a href="mailto:mayor@wappingersfallsny.gov">mayor@wappingersfallsny.gov</a>	Scott Williams, Liaison to County HMP 2582 South Ave, Wappingers Falls, NY 12590 845-297-8773 x9 <a href="mailto:swilliams@wappingersfallsny.gov">swilliams@wappingersfallsny.gov</a>

### 9.31.2 Municipal Profile

The Village of Wappingers Falls is a small municipality in the south-west quadrant of Dutchess County. Bordered by the Town of Wappinger to the south and the Town of Poughkeepsie to the north, the Village contains a total area of 1.18 square miles. Of this area, 0.08 square miles is water and 1.11 square miles is land. The Village’s most noteworthy waterways are the Wappinger Creek and Wappinger Lake. The Wappinger Lake was created in the 1840s when the Wappingers Falls dam was built to provide energy for a local mill and textile operations. It has experienced severe sedimentation over the past 40 years, leading to a large number of secondary hazard concerns and causing mitigation projects for the Lake to be a high priority for the Village.

The Village is situated along Wappinger Creek, near its connection to Wappinger Lake, about two miles north of its confluence with the Hudson River. The Village also includes the nearby community of Channingville, on the west side of the Wappinger Creek. Wappingers Falls is the second most densely populated municipality in the County, creating a more urban and developed atmosphere. The Village has a growing Spanish-speaking population, with 26.2 percent of the population identifying themselves as Hispanic or Latino. Additionally, the majority of residents in the Village live in renter-occupied units (62.3 percent), creating unique needs for this community compared to many other parts of the County. The Village’s more vulnerable structures and critical facilities will be discussed in further detail throughout the Hazard Mitigation Plan and this annex.

Because of the Village’s convenient location near the Wappinger Creek and also between the Towns of Poughkeepsie and Wappinger, transportation access is a key concern. The Village’s major transportation corridors include State Route 9 and State Route 9D, which run north-south. State Route 9D provides convenient access to Interstate-84, although this benefit has also led to a significant increase in commercial traffic on State Route 9D.

According to the 2010 U.S. Census, the population of the Village of Wappingers Falls was 5,522.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in Section 9.31.8 of this annex which illustrates the hazard areas along with the location of potential new development.



**Table 9.31-1. Growth and Development**

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2010 to present</b>					
Creekside Commons	Residential	44	Alexander Lane	None known	New construction / Completed
Riverbend	Residential	54	Beacon St	None known	New construction / Completed
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
Creekview	Residential	30	Marshall Road	Adjacent to Wetlands	
Goring Hall	Mixed Use	8 Residential/1 Commercial	East Main Street	None known	New construction
Bleachery Site Redevelopment	Mixed Use	1	Base of Wappingers Falls (Waterfall)	Former mill industrial site and partially includes Superfund Site 314058. Also located in the floodplain, and the site has been identified as vulnerable to dam failure, flooding, increased fire risk, and sewer overflows.	Named a priority project by the Mid-Hudson Regional Economic Development Council and is a revitalization project / Site has been remediated and is undergoing infrastructure work to prepare it for a mixed use site.
Oak Park	Residential	113	Residential area between Route 9 and Route 9D	Increased fire vulnerability (outdated electric wiring and lack of adequate fire walls extending to attic), flooding vulnerability (inadequate drainage to dispose of rooftop and asphalt precipitation), utility vulnerability (sanitary sewer collection currently collects rooftop drainage, increasing sewer flows and potential for overflows at treatment facility)	Redevelopment of neighborhood, consisting of a collection of 60 year-old attached townhouses

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

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

Dutchess 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. For the purpose of this Plan, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.





Table 9.31-2. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
Past 40 years	Destruction of the Wappinger Lake	N/A	N/A	Over the past several decades, the Wappinger Lake has experienced up to 12 feet of sedimentation. 98% of this sedimentation is due to runoff from upstream communities. Studies performed on the silt and stormwater from upstream show high levels of phosphorus. The decrease in water levels has caused increases in water temperature due to the sun's ability to now reach the shallow floor of the Lake. These temperatures have caused secondary issues, i.e., an abundance of weeds and invasive species to settle in the Lake. In all, this problem affects the Village's natural flood storage, it damages the local drinking water's only aquifer recharge, and it has caused wear and tear on the walls of the gorge, which hold up Route 9D and the central business district. If this problem goes unchecked the village will have: 1) no clean drinking water; 2) no flood storage; 3) uncontrollable amount of invasive species; and 4) a dangerously corroded Main Street corridor.
April 15, 2007	Tax Day Storm	N/A	N/A	Severe power loss was experienced, and street cleaning was necessary. This storm was one of the most impactful to the Village in recent memory and resulted in heavy cost for snow removal and street clearing. Increased runoff from upstream caused severe sedimentation in the Wappinger Lake. This sedimentation caused a decrease in water level in the Lake, the only aquifer recharge for the Village's drinking water.
February 24, 2010	Heavy Snow	N/A	N/A	The Village suffered heavy snow fall requiring \$6,282.90 in personal service for snow removal.
December 26-27, 2010	Severe Winter Storm and Snowstorm / Nor'Easter	DR-1957	Yes	The Village was reimbursed \$23,591.62 by New York State Office of Emergency Management for storm-related costs including overtime, equipment rentals, sand/salt, fuel, and gas.
March 11-13, 2011	Heavy Rainfall, Snowmelt, Ice Jams	N/A	N/A	Increased runoff from upstream caused sedimentation to the Wappinger Lake.
August 26 – September 5, 2011	Hurricane Irene	DR-4020	Yes	The Wappingers Falls Fire Department received 49 calls regarding flooding. 3 Honda Water Pumps and hoses were purchased as well as 1 gas powered chain saw to clear downed trees. A house on South Gilmore Blvd experienced a partial collapse due to flooding. The affected family was evacuated to the Civic Center. Additionally, 40 people were evacuated to Wappingers Junior High School from the Brookside Apartment Complex due to flooding. The Village also experienced widespread power loss, and the dam experienced \$350,000 worth of damage, requiring resurfacing.
October 29-30, 2011	Nor'Easter, Heavy Snow	N/A	N/A	By late afternoon of October 19, 2011, all power and phone service was out. Fallen trees forced the closure of West Main St from Clinton St to North St. Franklin St also was blocked by fallen trees. The storm cost the Village \$37,744 in clean up and response.
October 27 – November 8, 2012	Hurricane Sandy	EM-3351	Yes	Hurricane Sandy required the Highway Department to rent \$1,904.76 of equipment for clean-up. In total, clean-up costs equaled \$4,067.52 Wappinger Lake experienced increased sedimentation due to upstream runoff.
February 12-13, 2014	Winter Storm	N/A	N/A	Similar to Hurricane Sandy, the Village paid \$4,067.52 in clean-up associated with the Winter Storm of February 2014. The Wappinger Lake experienced increased sedimentation due to upstream runoff.
July 23, 2014	Thunderstorm and Lightning	N/A	N/A	The Givens Avenue Sewer Pump Station's electric service was disrupted three times during the storm resulting in a need to pump it out at a cost of \$2,602.50. Additionally, emergency



Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
				repairs to electric systems and controls to the pump station totaled \$4,138.90. Including labor and contracted services: storm related costs equaled \$27,700.53.

### 9.31.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Village of Wappingers Falls. 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 the Village of Wappingers Falls.

Table 9.31-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Coastal Storm	100-year MRP: \$438,918.00 500-year MRP: \$3,196,366.00 Annualized: \$38,816.00	Frequent	48	High
Drought	Damage estimate not available	Frequent	42	High
Earthquake	100-Year GBS: \$0 500-Year GBS: \$188,883 2,500-Year GBS: \$3,002,141	Occasional	28	Medium
Extreme Temperature	Damage estimate not available	Frequent	30	Medium
Flood	1% Annual Chance: \$144,554,726	Frequent	39	High
Severe Storm	100-Year MRP: \$438,918 500-year MRP: \$3,196,366 Annualized: \$38,816	Frequent	48	High
Winter Storm	1% GBS: \$6,895,932 5% GBS: \$34,479,662	Frequent	51	High
Wildfire	Estimated Value in the WUI: \$393,911,469	Frequent	42	High

Notes:

GBS = General building stock; MRP = Mean return period.

- a. The general building stock valuation is based on the custom inventory generated for the municipality and based on improved value.
- b. 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
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the estimated value of contents. The earthquake and hurricane wind hazards were evaluated by Census tract. The Census tracts do not exactly align with municipal boundaries; therefore, a total is reported for each Town inclusive of the Villages. Loss estimates for the flood and earthquake hazards represent both structure and contents. Potential flood loss estimates were generated using Hazus-MH 2.2 and the 2011 FEMA DFIRM for the 1-percent annual chance event. For the wildfire hazard, the improved value and estimated contents of buildings located within the identified hazard zones is provided.

#### National Flood Insurance Program (NFIP) Summary





The following table summarizes the NFIP statistics for the Village of Wappingers Falls.

**Table 9.31-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Village of Wappingers Falls	37	4	\$7,865.00	0	0	17

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 12/31/2014. Please note the total number of repetitive loss properties does not include the severe repetitive loss properties. The number of claims represents claims closed by 12/31/14.

(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.

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude

### Critical Facilities

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

**Table 9.31-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent <sup>(1)</sup>
Wappingers Falls Pump	Potable Pump	X	X	-	-	-
Wappingers Falls Storage #2	Potable Storage Facility	X	X	4.2	-	-
Wappingers Falls Village Garage	DPW		X	-	-	-
Speedway #7880	Hazmat	X	X	-	-	-

Source: Dutchess County, NYGIS

Note (1): HAZUS-MH 2.2 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).

Note (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. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

Note (3): Village Garage was constructed three feet above base flood elevation.

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.2

### Other Vulnerabilities Identified

The municipality has identified the following vulnerabilities within their community:

- In the Village of Wappingers Falls, the lake created by the Wappinger Dam has no substantial impounding capacity and is not effective in reducing large flood volume inflows. The Lake has also experienced a large amount of sedimentation in the past few decades, increasing the amount of invasive species and reducing natural flood storage area.



- The Village water mains are 85 years old and prone to sudden breaks when there are abrupt pressure changes, such as when there is an increased water demand due to a large structural fire. If the water mains were to break during a severe weather event, the Village would not be able to restore water service to residents for weeks after the event due to the need to repair multiple pieces of infrastructure.
- The Village sewer lines are 100 years old and cause sudden backups in basements or low-lying areas if lines are infiltrated by high pressure from a rising water table during high precipitation events or snow melt. The impacts of such backups include raw effluent forced into basements, posing a public health risk, and sewage overflows into the watershed and ultimately the Hudson River.
- A 145-unit condominium community (in the Town of Wappinger) directly east of Wappinger Lake has a 60 year old septic system, which is managed by that Homeowner Association. As the septic facility has aged, it has become difficult to manage. From time to time, there are septic overflows into the Lake (which suffers from a high coliform count). This could potentially affect the Village water treatment facility, which draws water from a wellfield supplied by an aquifer re-charged by the Lake. The community's drinking water system is also at failure because it cannot handle water quality issues.
- The dam at Wappinger Lake was constructed in 1840 and rehabilitated in 1987. It is in need of work after Hurricane Irene and Tropical Storm Lee. The repairs are estimated at approximately \$350,000. A dam failure would threaten 30 businesses and a hydroelectric facility. The hydroelectric facility sells its production to Central Hudson for about \$1,000,000 per year, the loss of which would lead to a substantial economic impact.
- The Village presently has only one water main which traverses across a gorge on a bridge constructed in 1870s (the Bleachery Water Main Loop). The water main must cross this bridge to serve 80 percent of the Village population. Due to the bridge's older infrastructure, it is more vulnerable to failure, such as has occurred after a severe storm in 1956. Additionally, water main breaks are already recurrent in the aged water mains, increasing the potential for loss of water service. The bridge's vulnerability leads to a secondary vulnerability for the Village in being able to provide drinking water to residents and businesses. The Village would like to construct a second water loop downhill and under the Creek for resiliency. This would also ensure that adequate water pressure is available to service water lines during a fire response, a problem noted during a 2005 explosion.
- The Bleachery does not have access to sewer service and needs a pump station and lines installed to prevent the septic systems from going into the Tidal Hudson River Estuary. This estuary is the Lower Wappinger Creek and runs through the center of the Bleachery. Lack of sewer service also prevents development expansion in the Bleachery.
- The Gilmore Streets, Paggi Terrace, and Oak Tree Drive neighborhood lacks drainage. As a result, these older townhomes put their roof drainage into the sewer system. This additional input causes pressure on the collection system and has led to massive backups into people's homes. It also causes overflows in the streets and grass leading to Wappinger Lake, Wappinger Creek, and Lower Wappinger Creek.

Although the Village has identified water mains and sewer lines as an additional source of vulnerability, the Village has begun implementing project work to mitigate these concerns. The Village has a \$20 million water/sewer renovation project. Although actual repair work totals \$70 million and the Village still needs \$50 million to complete the project, this effort allows it to begin reducing vulnerability in these areas.



### 9.31.5 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 Village of Wappingers Falls.

**Table 9.31-6. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	No	-	-	Section 4.1 includes natural hazard risk.
Capital Improvements Plan	Yes	Local	Village	Capital Infrastructure Plan
Floodplain Management / Basin Plan	No	-	-	-
Stormwater Management Plan	Yes	County	-	-
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	Yes	County	Village	Natural Resource Management Plan
Economic Development Plan	Yes	Local	Village	Pertaining to only West Main St
Comprehensive Emergency Management Plan	No	-	-	Village does have a Dam Failure Emergency Action Plan.
Emergency Response Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	Yes	County	Village	
Strategic Recovery Planning Report	No	-	-	-
Other Plans: Action Plan Vision Plan Parks and Recreation Master Plan Local Waterfront Revitalization Plan Wappinger Lake Sedimentation Study	Yes	Local	-	-
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Planning/Zoning	-



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Zoning Ordinance	Yes	Local	Zoning	-
Subdivision Ordinance	Yes	Local	Zoning	-
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	-	-
NFIP: Cumulative Substantial Damages	No	-	-	-
NFIP: Freeboard	Yes	State, Local	-	State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other construction types
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	Yes	Local	Planning/Zoning	-
Stormwater Management Ordinance	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	Yes	Local	Clerk	-
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	Yes	State	-	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	No	-	-	-

**Administrative and Technical Capability**

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

**Table 9.31-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Village Planning Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	Independent committee consisting of residents, business owners, Village Board members, and potential investors
Maintenance Programs to Reduce Risk	No	-
Mutual Aid Agreements	Yes	Police and Fire
<b>Technical/Staffing Capability</b>		
Planner(s) or Engineer(s) with knowledge of land	Yes	Contracted employees



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
development and land management practices		
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Contracted employees
Planners or engineers with an understanding of natural hazards	Yes	Contracted employees
NFIP Floodplain Administrator	Yes	Bryan Murphy (Zoning)
Surveyor(s)	No	-
Personnel skilled or trained in GIS and/or HAZUS-MH applications	No	-
Scientist familiar with natural hazards	No	-
Emergency Manager	No	-
Grant Writer(s)	Yes	Village Full-time Employee Occasional Use of Consultant
Staff with expertise or training in benefit/cost analysis	Yes	Village Full-time Employee Occasional Use of Consultant
Professionals trained in conducting damage assessments	No	-

### Fiscal Capability

The Village of Wappingers Falls has identified that the New York State Environmental Facilities Corporation (EFC) Green Innovation Grant Program (GIGP) (submitted through the Consolidated Funding Application [CFA]) is now valid for planning activities and has shared this information with other Wappinger Creek Intermunicipal Council members. An applicant may apply for a watershed planning study under the new round of funding; however, the applicant must demonstrate a 50% local match.

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

**Table 9.31-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes
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	Don't Know
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Don't Know
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Don't Know
Other Federal or State Funding Programs	Don't Know
Open Space Acquisition Funding Programs	Don't Know
Other	N/A



### Community Classifications

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

**Table 9.31-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes		
Storm Ready	No	-	-
Firewise	No	-	-
Disaster/Safety Programs in/for Schools	No	-	-
Organizations with Mitigation Focus (advocacy group, non-government)	No	-	-
Public Education Program/Outreach (through website, social media)	No	-	-
Public-Private Partnerships	No	-	-

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/>

### Self-Assessment of Capability

The table below provides an approximate measure of the Village of Wappingers Falls' capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.





**Table 9.31-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and Regulatory Capability	X (Capability only available with new buildings)		
Administrative and Technical Capability	X (Staffing Constraints)		
Fiscal Capability		X	
Community Political Capability	X (Primary concern of increased sedimentation and hazardous runoff into Wappinger Lake is primarily impacted by upstream communities over which the Village does not have political jurisdiction)		
Community Resiliency Capability	X (Limited due to external factors including upstream stormwater runoff and 100 year-old infrastructure)		
Capability to Integrate Mitigation into Municipal Processes and Activities.			X

**National Flood Insurance Program**

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

**NFIP Floodplain Administrator**

Bryan Murphy, Code Enforcement Officer, Building Inspector, and Zoning Administrator

**Flood Vulnerability Summary**

As supported by the low number of claims and policies described later in this section, the Village of Wappingers Falls has a relatively low vulnerability to flood damage. The municipality does not maintain an active inventory of flood-damaged properties and does not identify any property owners who are interested in mitigation or protective measures, such as elevation or acquisition. The Village has noted its primary concern with flooding is the sedimentation in the Wappinger Lake reducing natural flood storage areas. Despite the low vulnerability to flooding, the Village pursues flood mitigation opportunities, including education and new regulations, where applicable or beneficial.

**Resources**

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

It is the intent and purpose of the NFIP Floodplain Administrator to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas. Floodplain manager duties include: regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities; require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters; control filling, grading, dredging and other



development which may increase erosion or flood damages; regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and qualify for and maintain participation in the National Flood Insurance Program.

The Floodplain Administrator feels he is adequately supported to fulfill his responsibilities as the municipal floodplain administrator; however, he has not received any floodplain administration training. He would participate in any continuing education or certification training on floodplain management were it offered for all local floodplain administrators.

### **Compliance History**

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Since 1978, four claims have been paid totaling \$7,865 (10 claims have been submitted, but 6 were closed without pay). Following Hurricane Irene, the damage throughout the Village included structural damage to 49 residences and partially-collapsed structure. The dam was also damaged, requiring \$350,000 in resurfacing repair. Additionally, an apartment complex housing 40 people had to be evacuated to the Wappingers Junior High School, and the Village experienced widespread power outages.

The Village is currently in good standing in the NFIP. The current NFIP Floodplain Administrator indicates the Village's last CAV was performed six months ago. The municipality sees no specific need for a CAV at this time.

### **Regulatory**

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The Village's Flood Damage Prevention Ordinance (FDPO) was last reviewed and updated on April 11, 2012, where necessary, and is found at Chapter 83 of the local code. The FDPO is available for online review at <http://ecode360.com/7247432>.

Floodplain management regulations and ordinances meet the FEMA and New York State minimum requirements. There are additional ordinances, plans, and programs within the Village, including stormwater and watershed management, further supporting the enforcement of the floodplain management program.

### **Community Rating System**

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

### **Other Capabilities Identified**

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Previous actions that are now on-going programs and capabilities are described below. Refer to Table 9.31-11 presented later in this annex.

- The Village of Wappingers Falls actively seeks out grants and funding sources to reduce its vulnerability to flooding, utility outages and concerns (e.g., water main failures and sewer overflows), and structural fires.
- The Village of Wappingers Falls actively participates in the Wappinger Creek Intermunicipal Council. Responsibilities include promoting appropriate care for the Wappinger Creek Watershed and assisting other jurisdictions with implementing related mitigation projects such as assisting the Town of Poughkeepsie with the Red Oaks Mill Dam needs.

### **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

**Land Use Planning:** The Village has a Planning Board and Zoning Board of Appeals which review all applications for development and consider natural hazard risk areas in their review. Many development activities require additional levels of environmental review, specifically NYS SEQR and Federal NEPA requirements.

**Village of Wappinger Comprehensive Plan 2001:** The Village completed a Comprehensive Plan which included the identification of natural hazard risk areas like floodplains, wetlands, and steep slopes, as well as land use and zoning recommendations for managing those risks. Some of the recommendations included the following:

1. To protect Wappinger Creek, the Village should adopt a stream corridor overlay district with additional, more stringent review standards for development that occurs along the corridor, such as increased setbacks and design requirements that would preclude inappropriate uses fronting directly on the Creek.
2. Underground burial of all utility lines provided safety is ensured where Village water and sewer lines are involved.
3. Inventory significant trees in the Village and create a replacement, supplementation, and management program for them.
4. Draft a stream corridor overlay district which requires additional setbacks for buildings and construction, to buffer water resources from ground disturbance along their banks, as recommended previously in Section 4.2.3.
5. Emergency generator, pump station.

**Other Plans:** The Village has completed a Re-Development Plan and Economic Development Plan for West Main Street, as well as a Natural Resource Management Plan for the Wappinger Creek Watershed.

### Regulatory and Enforcement

**Flood Damage Prevention Chapter 83:** It is the purpose of this chapter to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- A. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities;
- B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- C. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
- D. Control filling, grading, dredging and other development which may increase erosion or flood damages;
- E. Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and
- F. Qualify for and maintain participation in the National Flood Insurance Program.

**Zoning Code Chapter 151:** Wappinger Fall's zoning code includes districts and standards pertaining to the mitigation of hazards.



**Building Code Chapter 59:** The building codes are strictly enforced to make new and renovated buildings as prepared as possible for hazard related incidents. The chapter includes a provision to allow the building inspector to make emergency repairs to protect the health safety and welfare of the residents.

### **Fiscal**

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**Operating Budget:** The Village's operating budget contains minimal provisions for expected repairs like snow removal and infrastructure repair after a storm or natural disaster. The Village also includes budget for mitigation-related projects in its water fund.

**Grants:** The Village has applied for and won a number of grants related to capital improvements. The image below is a list of those grants and related improvements, and their status as reported in the Village's 2010 Capital Infrastructure Plan:



Sources	Project	Amount Requested		Status
DWSRF Guaranteed	Water Treatment Facility	\$ 5,739,000	LOAN	IN PROGRESS
DWSRF Hardship	Water Treatment Facility	\$ 5,739,000	LOAN	IN PROGRESS
Green Grant	Water Treatment Facility	\$ 700,000	GRANT	STATE withdrew GREEN program
CWSRF (multiple streets)	Street Infrastructure	\$ 7,900,000	LOAN/GRANT	IN PROGRESS
Pump Station	Street Infrastructure	\$ 600,000	GRANT	AWAITING ANNOUNCEMENT
OUTFALL STUDY	Lake	\$ 75,000	GRANT	COMPLETED
Managed Wetland- E.Main/Brookside/Vets Park	Lake	\$ 350,000	GRANT	GIGP RFP due Oct 2010
LWRP	Planning	\$ 115,000	GRANT	IN PROGRESS
OCR Planning Grant - Zoning	Planning	\$ 80,000	GRANT	Applied
LWRP	Parks	\$ 475,000	GRANT	AWAITING RFP
HUD	Parks	\$ 196,000	GRANT	IN PROGRESS
Transportation	Parks	\$ 600,000	GRANT	Waiting for Fed Trans Bill
DEC	Bleachery			
Superfund Bleachery Cleanup	Bleachery	\$ 10,500,000	GRANT	IN PROGRESS

The Village’s highlighted grants of note include the following:

- Shared Services Grant from Dutchess County to implement the aeration systems for the Tri-Municipal Sewer Plant project and which consisted of a \$14.8 million interest-free loan for the replacement of subsurface infrastructure





- Green Innovative Grant Program, which was awarded to help reduce stormwater runoff into Wappinger Lake.

### **Education and Outreach**

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The Village includes announcements on the home page and includes links and contact info for all personal and emergency response resources. Citizens can also register on the Village website to be alerted by the police in case of emergency. The Village would also be interested in improving local signage to enhance public outreach.

The Planning Department is a member of the Dutchess County Planning Federation and attends trainings and researches best practices that other communities are implementing. The Village has planned to budget for training for personal including professional development geared towards health and safety.

### **9.31.6 Mitigation Strategy and Prioritization**

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

#### **Past Mitigation Initiative Status**

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The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this Plan 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 9.31-11. Past Mitigation Initiative Status

2010 Mitigation Action	Responsible Agency	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2015 HMP or Discontinue)	Describe Next Step
Construct a new water treatment facility	Village	Complete	<p>The new water treatment facility began delivering water to Wappingers Falls’ customers in January 2012. It moved its water source well field 250 feet away from Wappinger Lake because of the phosphorous-laden sediment, which attracts iron-clad bacteria to the water.</p> <p>By moving the water source, the Village is able to draw water from an aquifer more protected from the Lake’s influence. The facility itself was designed to treat the groundwater supply with a state of the art process, which achieves 99.9% disinfection with ultraviolet (UV). This is the only system of its kind in the United States. The system also utilizes a clarity measurement system so that the UV is only used to the extent that it is needed. This greatly reduces the amount of power needed because the UV is only as much as is required to disinfect the water.</p> <p>In 2013, the Village installed a 239KW photovoltaic (PV) array to completely power the facility when the sun is shining. The Village would be interested in adding battery storage to the facility to increase its resiliency. It would also be interested in adding Combined Heat and Power generators run on natural gas for resiliency. The Village considers that it must continue to upgrade water mains from this facility so that the entire system can be relied upon. One key element is that there is currently only one way for water to be delivered to 80% of its users. That way is a main that travels over an 1870 bridge over a gorge. The Village would really like to add a second resiliency loop which would travel underneath the Creek. This would ensure that if there were a storm or catastrophe which took out the bridge that water could safely be delivered to all</p>	Include in 2015 HMP	<p>Reword action into three actions focused on the following remaining goals:</p> <ol style="list-style-type: none"> <li>1. Redundant and resilient power source (battery storage) (Initiative VWF-8)</li> <li>2. Redundant and resilient power source (combined heat/power generator) (Initiative VWF-9)</li> <li>3. Addition of a resiliency loop under Creek to ensure continuous ability to deliver water (Initiative VWF-4)</li> </ol>



2010 Mitigation Action	Responsible Agency	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2015 HMP or Discontinue)	Describe Next Step
			Village residents.		
New Pump Station	Village	Complete	<p>In 2014, the Village installed a new pump station at its shared facility with the Town of Wappinger. The new system protects the Lower Wappinger Creek from sewage overflows caused by pump station failures. It pumps the two municipalities' sewage to the Tri-Municipal Sewer Commission, which is shared with the Town of Poughkeepsie.</p> <p>Before the upgrade, during storm events, the previous pump station would have manhole covers overflowing with sewage and unable to be treated because of the inadequacy of the pump station. This pump station is one of many upgrades to the shared facility meant to increase the capacity of the system. An increase in the system would potentially get more Creekside homes off of private septic systems, which currently contribute coliform to the Creek, impacting the water supply to water treatment facilities. The Shared Sewer Commission has begun a study of its Inflow and Infiltration (I/I) to see where it can get more capacity.</p> <p>The Village would like to improve its I/I at Oak Park, a housing development of 113 townhomes built without adequate drainage. These homes commonly use their sewer service to send rooftop drainage because of this concern. If both the Town and the Village were able to reduce their I/I, they would be able to increase users for the sewer commission, reduce costs, and better protect the watershed and the Hudson River from sewage overflows.</p>	Include in 2015 HMP	Reword action to focus on I/I system at Oak Park (Initiative VWF-10).
Eco System	Village	Complete	In 2013, the Village installed a manmade ecosystem which treats stormwater runoff from a 220-acre drainage area in the Village. This drainage area was the Village's largest contributor of contaminant	Include in 2015 HMP	<p>Reword action into two actions focused on the following remaining goals:</p> <ol style="list-style-type: none"> <li>1. Watershed study to determine future</li> </ol>



2010 Mitigation Action	Responsible Agency	Status (In progress, No progress, Complete)	Describe Status	Next Step (Include in 2015 HMP or Discontinue)	Describe Next Step
			<p>laden sediment to Wappinger Lake.</p> <p>The manmade ecosystem replicates a natural ecosystem by using native species vegetation to treat the runoff and purify the water before it is sent toward Wappinger Lake.</p> <p>This project was awarded a 2010 Green Innovative Grant Program Award from DEC. It is meant to be a demonstration project. Because this only represents treatment of 2% of the contaminated runoff to the Wappinger Watershed, the Village would be interested in a watershed study which would show what future projects might best address the remaining 98% of the contaminants that enter the Lake. The village would like to see more projects constructed upstream to protect the Lake from both sediment and the contaminants which are carried in them.</p>		<p>projects to address remaining Lake contaminants (Initiative VWF-7)</p> <p>2. Other potential regional and upstream projects to protect Lake from sedimentation and contaminants (Initiative VWF-6)</p>



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

The Village of Wappingers Falls has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2010 Plan:

- New aeration units for the Tri-Municipal Sewer Commission (under the Shared Services Grant from Dutchess County)
- Solar Panels at the Water Treatment Facility (funded through New York State Energy Research and Development Authority [NYSERDA])
- Creekside Looped Water Main (funded by the developer)
- The Village has been asked by the Wappinger Climate Action Group to both take the Climate Smart Community Pledge and to bring in Solaris, NY, to help low-income housing.
- The Village was awarded a NY prize to complete a feasibility study for a tri-municipal sewerage system, new hydroelectric plant, and solar for drinking water.
- The Wappinger Boat House Project, through available CDBG funding, is underway and is being coordinated with the Town of Poughkeepsie.
- The Village is currently identifying potential sources of funding (e.g., grants, interest-free loans, etc.) and will then apply for these sources to acquire the remaining \$50 million necessary to complete the water/sewer renovation project.
- The Village of Wappingers Falls is in the process of identifying and implementing, as able and as funding permits, remediation and repair project to address accumulated sedimentation and contaminants at Wappinger Lake.
- The Village is in the process of updating and amending its zoning code. Part of this update will include the consideration of promoting or adopting higher regulatory standards to manage flood hazard risk.
- The Village is in the process of establishing a committee so that the County, Village, and power companies can collaborate to identify roads in the Village considered critical and a first priority for clearing after an event involving downed power lines.

The Village has also begun the Bleachery Sewer Installation project, funded through the Empire State Development Corporation. The Bleachery site, consisting of 25 acres, has already undergone site remediation and is being prepared for future development possibilities, such as becoming a mixed use site. The site was identified as a priority project by the Mid-Hudson Regional Economic Development Council and awarded \$800,000 for sewer connections to the site. It also received \$3.2 million from an Economic Development Agency grant to remove debris and a condemned building in the site location.

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

The Village of Wappingers Falls participated in a mitigation action workshop in 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 'Selecting Appropriate Mitigation Measures for Floodprone Structures' (March 2007) and FEMA 'Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards' (January 2013). In May 2015, the Village of Wappingers Falls participated in a second workshop and was provided the results to the risk assessment to further assist with the identification of mitigation actions.

Table 9.31-12 summarizes the comprehensive-range of specific mitigation initiatives the Village of Wappingers Falls would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this Plan. These initiatives are dependent upon available funding



(grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

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 your actions as 'High', 'Medium', or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.31-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan.



Table 9.31-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority (Desired Order of Implementation)	Mitigation Category	CRS Category
VWF-1	Wappingers Falls Water Distribution Infrastructure Improvements - Replace the 100 year old water distribution system in the Village of Wappingers Falls.	Existing	Flooding, Utility Interruption	2	Village of Wappingers Falls	High	Medium	FEMA, NYS EFC	Long	High (2)	SIP	PR, PP
VWF-2	Wappingers Falls Sanitary Collection Infrastructure Improvements – The Village’s sanitary sewer in most areas was installed in 1915 and is 100 years old.	Existing	Flooding, Utility Interruption	2	Village of Wappingers Falls	High	Medium	FEMA, NYS EFC, NYS DEC	Short	High (1)	SIP	PP, ES
VWF-3	Wappingers Falls Storm Drainage Infrastructure Improvements – Improve the drainage infrastructure of the village by embracing bioretention, implementing bioswales, retention ponds, and installing riparian buffers to prevent stream bank erosion	Existing and New	Severe Storms, Flooding	1, 2, 4, 6	Village of Wappingers Falls, Dutchess County	Medium	Medium	NYS DEC, EPA, FEMA, CDBG-HUD	Long	Medium (3)	SIP, NSP, EAP	NR, PP, PR, PI
VWF-4	Wappingers Falls Energy Resiliency Improvements – The Village of Wappingers Falls is looking to create an islanded microgrid to prevent the loss of critical services, emergency response centers, and shelters. This microgrid will include existing and proposed solar matched with natural gas generators and hydropower.	Existing and New	Severe Storms, Flooding	1, 2, 4, 5	Village of Wappingers Falls, Tri-Municipal Sewer Commission	High	High	NYSERDA, FEMA	Short	High (4)	SIP	ES
VWF-5	Reconstruct the sewer line from the Village border to the pump station to accommodate additional flow and carry it to the Tri-Municipal Sewer Facility. The Village estimates this project to require \$7.2 million to complete.	Existing	Water Quality	1, 2, 5, 6	Municipality	High	High	EFC, State	Short	Medium	SIP	ES, PR, PP





Table 9.31-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority (Desired Order of Implementation)	Mitigation Category	CRS Category
VWF-6	Add modern infrastructure components to the Wappinger Lake dam. Added infrastructure is needed to better manage the dam's ongoing maintenance.	Existing	Dam Failure, Flooding	2, 3, 5, 6	Municipality	High	Medium	FEMA	Short	High	SIP	PR
VWF-7	Construct a second water loop downhill and under the Wappinger Creek to add redundancy and create a more resilient drinking water system.	New	Loss of water	1, 5, 6	Municipality	High	Medium	FEMA, EFC	Short	Medium	SIP	PR
VWF-8	Assess and identify measures to increase water storage capacity to the east of Route 9 to ensure additional water pressure and storage.	New	Fire suppression	1, 2, 6	Municipality	High	Low (Assess and Identify = Staff Time)	FEMA, EFC	Short	High	LPR	PR
VWF-9	Improve the I/I at the Oak Park housing development to ensure adequate drainage, increase sewer commission customer base, reduce sewage overflows, decrease sewage costs, and better protect the watershed and the Hudson River from sewage overflows. Project specifics may result from the Shared Sewer Commission's I/I capacity study suggestions.	New	Water Quality, Sewer overflows	1, 2, 5, 6	Municipality	High	5.8M	EFC, NYSDEC	Short	High	SIP, NSP	PR, NR, PP
VWF-10	Install improved signage throughout the Village to increase public education on local safety hazards.	New	All	1, 2, 3	Municipality	Medium	Low	NYSDOS, State, County	Short	Medium	EAP	PI
VWF-11	Develop and implement an enhanced all-hazards, public outreach / education / mitigation information program on natural hazard risks and what residents can do in the way of mitigation and preparedness, including flood insurance. This program will include [examples]: Providing general natural hazard risk preparedness and mitigation, and related NFIP information in regular newsletter and mailings. <ul style="list-style-type: none"> <li>• Including natural hazard risk and risk reduction information through social media channels and e-mail blast systems.</li> <li>• Posting of flyers and other readily available NFIP informational materials at town/village hall or distributing at regular civic meetings.</li> <li>• Preparing, distributing, and analyzing public surveys.</li> <li>• Developing/maintaining a natural hazard risk management webpage on the municipal website where information and mapping can be posted.</li> </ul>											





Table 9.31-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority (Desired Order of Implementation)	Mitigation Category	CRS Category
	<ul style="list-style-type: none"> <li>Enhancing public outreach to residents in NFIP floodplain areas to inform them of annual grant opportunities, which may include distributing periodic articles and including handouts in the annual newsletter.</li> </ul>											
	See above.	N/A	All Hazards	1, 2, 3, 5, 6	Town/Village Supervisor's Office	Medium	Low	Municipal Budget; HMA programs with local or county match	Short	Medium	EAP	PI
VWF-12	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 meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified in subsequent initiatives.											
	See above.	New and Existing	Flood	All Goals	NFIP Floodplain Administrator (FPA); with support from NYSOEM, ISO, FEMA	Medium - High	Low-Medium	Municipal Budget	Ongoing	High	LPR	PR
VWF-13	Support and participate in county-led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1).	New and Existing	All Hazards	All Goals	County, as supported by relevant local department leads,	High (comprehensive improvements, mitigation and risk-reduction capabilities)	Low-Medium (locally)	Local (staff resources)	Short	High	LPR, EAP	PR, PI
VWF-14	Develop and implement a post-event damage assessment program, including the following elements:											
	See above.	Existing	Flood; Severe Storm; Severe Winter Storm	2, 3, 4, 5, 7	Engineering (Town/Village NFIP FPA); Town/Village Supervisor's Office	Medium – High (life Safety; Increased eligibility for mitigation)	Low-Medium	Municipal Budget	Short	High	LPR, EAP	PP, ES



Table 9.31-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority (Desired Order of Implementation)	Mitigation Category	CRS Category
VWF-15	Support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. Join the CRS program if adequate resources to support long term participation can be dedicated.	N/A	Flood	All Goals	Town/Village NFIP FPA, as fully supported by local government officials	grant funding) Medium - High	Low	Municipal Budget	Short (year 1)	High	EAP, LPR	PI, PR
VWF-16	Designate a NFIP Floodplain Administrator (FPA), and other local officials who would benefit, become a Certified Floodplain Manager (CFM) through the Association of State Floodplain Managers (ASFPM) and New York State Stormwater and Floodplain Managers Association (NYSSFMA), and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis (BCA) and Substantial Damage Estimation (SDE).	N/A	Flood	3, 5, 7	Town/Village NFIP FPA	Medium	Low	Municipal Budget	Short (DOF)	High	EAP	PI
VWF-17	Develop and maintain mapping of all natural hazard risk areas in the Village, FEMA-delineated or otherwise, to support land use decision making (e.g. Planning Board, site plan review process.).	New and Existing	Flood, Wildfire	3, 4, 5, 6, 7	Engineering, Planning Board	Medium (improved understanding of flood risk areas)	Low	Local Budget	Short	High	LPR	PR
VWF-18	Enhance or expand tree maintenance program and coordinate with utility companies.	Existing	Severe Storm; Severe Winter Storm	1, 2, 3, 5	Engineering and DPW, working with contractors and local utilities	Medium – High (reduced risk of utility outages; life safety)	Medium	Local Budget	Short	Medium	LPR	PR



Table 9.31-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority (Desired Order of Implementation)	Mitigation Category	CRS Category
VWF-19	Work with utility companies and developers to bury utility lines underground, wherever possible. Consider requiring underground utilities for any new development. Work with Planning Board so that burying utilities is promoted in development plans.	New and Existing	Severe Storm; Severe Winter Storm	2, 5, 7	Engineering and DPW, working with local utilities and developers	Medium – High (reduced utility outages)	Low	Local Budget	Ongoing	High	LPR	PR
VWF-20	Notify and provide needed support to the facility manager/operator of Wappingers Falls Pump to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	Existing	Flood, Severe Storms	2, 3	Municipal NFIP FPA	High – Reduced Risk to Critical Facility	Low	Staff Time, FEMA, NYS DHSES, County, Municipal	Short	Medium	EAP, LPR	PI, PP
VWF-21	Notify and provide needed support to the facility manager/operator of Wappingers Falls Storage #2 to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	Existing	Flood, Severe Storms	2, 3	Municipal NFIP FPA	High – Reduced Risk to Critical Facility	Low	Staff Time, FEMA, NYS DHSES, County, Municipal	Short	Medium	EAP, LPR	PI, PP
VWF-22	Notify and provide needed support to the facility manager/operator of Wappingers Falls Village Garage to evaluate the facility's flood vulnerability	Existing	Flood, Severe Storms	2, 3	Municipal NFIP FPA	High – Reduced Risk to Critical Facility	Low	Staff Time, FEMA, NYS DHSES, County, Municipal	Short	Medium	EAP, LPR	PI, PP





**Table 9.31-12. Proposed Hazard Mitigation Initiatives**

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority (Desired Order of Implementation)	Mitigation Category	CRS Category
	and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".											
VWF-23	Notify and provide needed support to the facility manager/operator of Speedway #7880 to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	Existing	Flood, Severe Storms	2, 3	Municipal NFIP FPA	High – Reduced Risk to Critical Facility	Low	Staff Time, FEMA, NYS DHSES, County, Municipal	Short	Medium	EAP, LPR	PI, PP

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)
- SRL Severe Repetitive Loss Grant Program (discontinued)

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

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





Costs:

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:

High > \$100,000

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

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

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

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

Mitigation Category:

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

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions 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 acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - 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 educational programs for school-age children and adults.
- Natural Resource Protection (NR) - 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.
- Structural Flood Control Projects (SP) - 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.
- Emergency Services (ES) - 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





Table 9.31-13. 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
VWF-1	Wappingers Falls Water Distribution Infrastructure Improvements - Replace the 100 year old water distribution system in the Village of Wappingers Falls.	0	1	1	1	1	1	-1	1	1	1	1	0	1	0	9	High
VWF-2	Wappingers Falls Sanitary Collection Infrastructure Improvements – The Village’s sanitary sewer in most areas was installed in 1915 and is 100 years old.	1	1	1	0	1	1	-1	1	1	1	1	0	1	0	9	High
VWF-3	Wappingers Falls Storm Drainage Infrastructure Improvements – Improve the drainage infrastructure of the village by embracing bioretention, implementing bioswales, retention ponds, and installing riparian buffers to prevent stream bank erosion	1	1	0	1	1	0	-1	1	1	1	1	0	1	0	8	Medium
VWF-4	Wappingers Falls Energy Resiliency Improvements – The Village of Wappingers Falls is looking to create an islanded microgrid to prevent the loss of critical services, emergency response centers, and shelters. This microgrid will include existing and proposed solar matched with natural gas generators and hydropower.	1	1	1	1	1	0	0	1	1	1	1	0	0	0	9	High
VWF-5	Reconstruct the sewer line from the Village border to the pump station to accommodate additional flow and carry it to the Tri-Municipal Sewer Facility. The Village estimates this project to require \$7.2 million to complete.	1	1	0	-1	1	1	-1	1	1	0	0	0	1	1	6	Medium
VWF-6	Add modern infrastructure components to the Wappinger Lake dam. Added infrastructure is needed to better manage the dam’s ongoing maintenance.	1	1	0	0	1	-1	1	1	1	1	1	1	1	0	9	High
VWF-7	Construct a second water loop downhill and under the Wappinger Creek to add redundancy and create a more resilient	1	0	-1	0	1	1	-1	1	1	1	0	1	1	1	7	Medium



Table 9.31-13. 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
VWF-8	drinking water system. Assess and identify measures to increase water storage capacity to the east of Route 9 to ensure additional water pressure and storage.	0	1	1	0	1	1	0	0	1	1	0	1	1	1	9	High
VWF-9	Improve the I/I at the Oak Park housing development to ensure adequate drainage, increase sewer commission customer base, reduce sewage overflows, decrease sewage costs, and better protect the watershed and the Hudson River from sewage overflows. Project specifics may result from the Shared Sewer Commission’s I/I capacity study suggestions.	1	1	0	0	1	1	-1	1	1	1	1	0	1	1	9	High
VWF-10	Install improved signage throughout the Village to increase public education on local safety hazards.	1	0	1	1	0	1	0	0	1	1	1	1	0	0	8	Medium
VWF-11	Develop and implement an enhanced all-hazards, public outreach / education / mitigation information program on natural hazard risks and what residents can do in the way of mitigation and preparedness, including flood insurance. This program will include [examples]: <ul style="list-style-type: none"> <li>• Providing general natural hazard risk preparedness and mitigation, and related NFIP information in regular newsletter and mailings.</li> <li>• Including natural hazard risk and risk reduction information through social media channels and e-mail blast systems.</li> <li>• Posting of flyers and other readily available NFIP informational materials at town/village hall or distributing at regular civic meetings.</li> <li>• Preparing, distributing, and analyzing public surveys.</li> <li>• Developing/maintaining a natural hazard risk management webpage on the municipal website where information and mapping can be posted.</li> <li>• Enhancing public outreach to residents in NFIP floodplain areas to inform them of annual grant opportunities, which may include distributing periodic articles and including handouts in the annual newsletter.</li> </ul>																
	See above.	1	0	1	1	1	1	0	0	1	0	1	0	0	0	7	Medium
VWF-12	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 meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified in subsequent initiatives.																
	See above.	1	1	1	1	1	1	0	1	1	0	0	0	1	1	10	High
VWF-13	Support and participate in county-led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1).	1	1	1	1	1	1	0	0	1	1	1	0	0	1	10	High
VWF-14	Develop and implement a post-event damage assessment program, including the following elements: <ul style="list-style-type: none"> <li>• Conduct public outreach/education (see Public Education and Awareness Initiatives above) to inform property owners of the need to report property damage, and obtain required permits when making repairs, if necessary.</li> </ul>																



Table 9.31-13. 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
	<ul style="list-style-type: none"> <li>Develop and organize local resources to conduct post-event damage assessments, including substantial damage determinations as warranted.</li> <li>Develop an inventory (file system and/or database) of losses (loss of service, property damage, economic losses, etc.) as reported to and/or identified by the Town/Village (e.g. building permit process).</li> </ul>																
	See above.	0	0	1	1	1	1	0	1	1	1	1	0	0	1	9	High
VWF-15	Support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. Join the CRS program if adequate resources to support long term participation can be dedicated.	1	1	1	1	1	1	0	1	1	0	0	0	1	1	10	High
VWF-16	Designate a NFIP Floodplain Administrator (FPA), and other local officials who would benefit, become a Certified Floodplain Manager (CFM) through the Association of State Floodplain Managers (ASFPM) and New York State Stormwater and Floodplain Managers Association (NYSSFMA), and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis (BCA) and Substantial Damage Estimation (SDE).	0	0	1	1	1	1	0	0	1	1	0	1	1	1	9	High
VWF-17	Develop and maintain mapping of all natural hazard risk areas in the Village, FEMA-delineated or otherwise, to support land use decision making (e.g. Planning Board, site plan review process,).	1	1	1	0	1	1	0	1	1	0	1	0	0	1	9	High
VWF-18	Enhance or expand tree maintenance program and coordinate with utility companies.	1	1	1	1	1	1	-1	1	0	1	1	-1	0	1	8	Medium
VWF-19	Work with utility companies and developers to bury utility lines underground, wherever possible. Consider requiring underground utilities for any new development. Work with Planning Board so that burying utilities is promoted in	1	1	1	1	1	1	1	1	1	1	1	0	0	0	11	High





Table 9.31-13. 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
	development plans.																
VWF-20	Notify and provide needed support to the facility manager/operator of Wappingers Falls Pump to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	0	1	1	0	0	0	1	0	1	1	1	1	0	0	7	Medium
VWF-21	Notify and provide needed support to the facility manager/operator of Wappingers Falls Storage #2 to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	0	1	1	0	0	0	1	0	1	1	1	1	0	0	7	Medium
VWF-22	Notify and provide needed support to the facility manager/operator of Wappingers Falls Village Garage to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	0	1	1	0	0	0	1	0	1	1	1	1	0	0	7	Medium
VWF-23	Notify and provide needed support to the facility manager/operator of Speedway #7880 to evaluate the facility's flood vulnerability and to identify feasible mitigation options. Assure that any mitigation addresses the 500-year flood event or "worst damage scenario".	0	1	1	0	0	0	1	0	1	1	1	1	0	0	7	Medium

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



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

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None at this time.

### **9.31.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Village of Wappingers Falls that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Village of Wappingers Falls has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

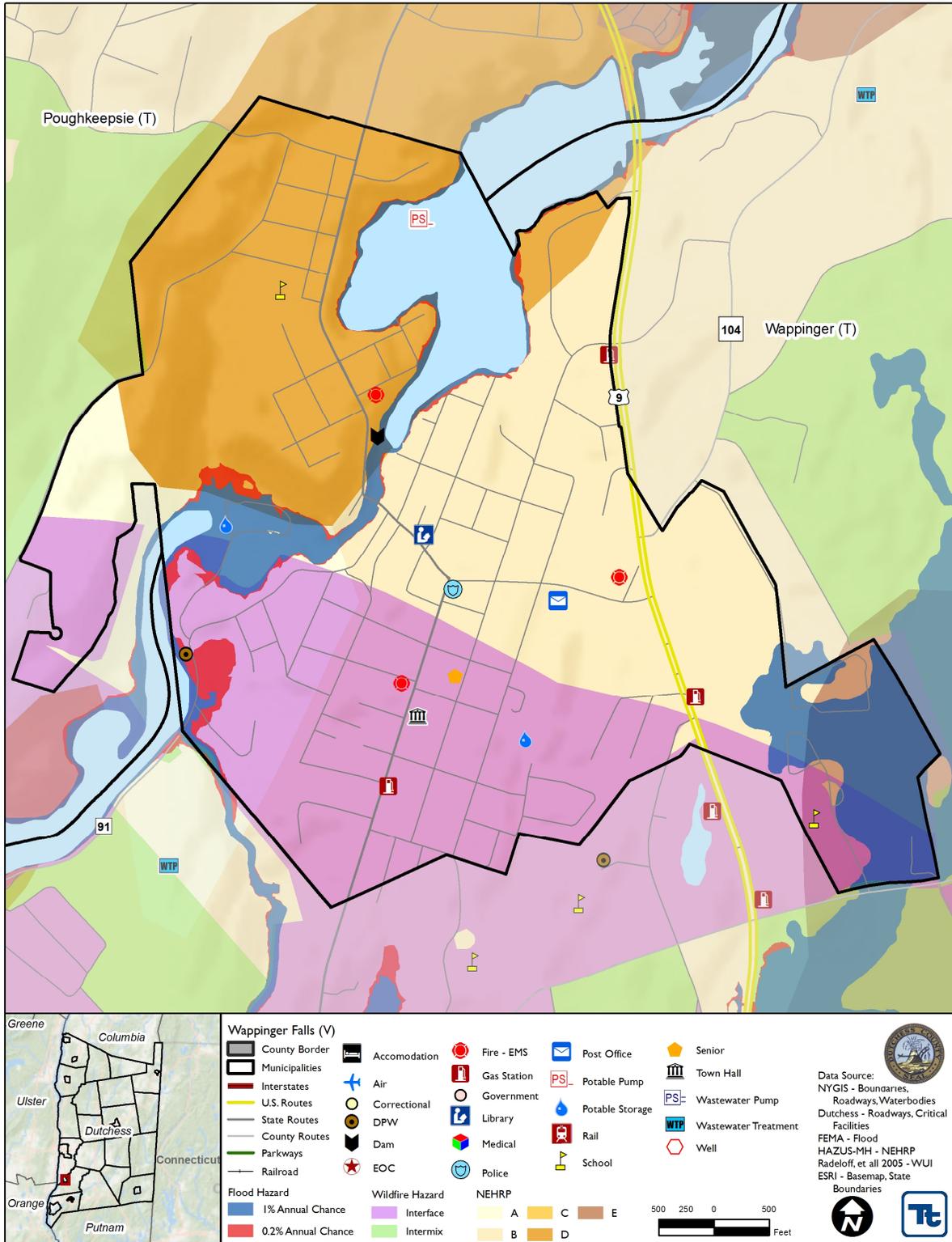
### **9.31.9 Additional Comments**

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None at this time.



Figure 9.31-1. Village of Wappingers Falls Hazard Area Extent and Location Map





Name of Jurisdiction: Village of Wappingers Fall  
 Name and Title Completing Worksheet: Scott Williams, Grant Writer  
 Action Number: VWF-1  
 Mitigation Action Name: Wappingers Falls Water Distribution Infrastructure Improvements

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Severe storms, land failure.
<b>Specific problem being mitigated:</b>	Loss of water distribution service
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Patch and quick fix the 100 year old infrastructure as breaks or failure occurs. This reactionary method proved to be costly and ineffective in terms of mitigating hazards.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Replace the 100 year old water distribution system in the Village of Wappingers Falls.
<b>Mitigation Action Type</b>	SIP
<b>Goals Met</b>	Goal 2
<b>Applies to existing and or new development, or not applicable</b>	Existing infrastructure
<b>Benefits (losses avoided)</b>	Costly emergency repairs and prolonged shutdown of drinking water system, as well as patch job fixes, lost business revenue from water main breaks, and business interruptions
<b>Estimated Cost</b>	\$11,900,000
<b>Priority*</b>	2
Plan for Implementation	
<b>Responsible Organization</b>	Village of Wappingers Falls
<b>Local Planning Mechanism</b>	Capital Infrastructure Plan,
<b>Potential Funding Sources</b>	FEMA, NYS EFC,
<b>Timeline for Completion</b>	20 years
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:



Action Number:

VWF-1

Mitigation Action Name:

Wappingers Falls Water Distribution Infrastructure Improvements

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Will prevent homes and businesses from losing water connectivity
Cost-Effectiveness	1	Will prevent the costly work associated with emergency repairs
Technical	1	
Political	1	
Legal	1	
Fiscal	-1	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	Mayor Matt Alexander and Board of Trustees
Other Community Objectives	0	
<b>Total</b>	<b>9</b>	
<b>Priority</b>	<b>High</b>	



**Name of Jurisdiction:** Village of Wappingers Falls  
**Name and Title Completing Worksheet:** Scott Williams, Grant Writer  
**Action Number:** VWF-2  
**Mitigation Action Name:** Wappingers Falls Sanitary Collection Infrastructure Improvements

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Severe Storm
<b>Specific problem being mitigated:</b>	Critical Service Failure
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Patches and emergency fixes after occurrences of failure and leakage.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The Village's sanitary sewer in most areas was installed in 1915 and is 100 years old.
<b>Mitigation Action Type</b>	SIP
<b>Goals Met</b>	Goal 2
<b>Applies to existing and or new development, or not applicable</b>	Replace existing, century-old, sanitary sewer system.
<b>Benefits (losses avoided)</b>	Avoids system failure in the event of a storm and the discharge of effluent caused when failure has occurred. Also saves costs associated with upkeep, cleanup, and emergency repair of outdated system. Additionally, reduces nutrient loading in the Lake, Creek, and Hudson River.
<b>Estimated Cost</b>	17,500,000
<b>Priority*</b>	1
Plan for Implementation	
<b>Responsible Organization</b>	Village of Wappingers Falls
<b>Local Planning Mechanism</b>	Capital Infrastructure Plan
<b>Potential Funding Sources</b>	FEMA, NYS Environmental Facilities Corporation, NYS DEC
<b>Timeline for Completion</b>	5 years
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:



Action Number:

VWF-2

Mitigation Action Name:

Wappingers Falls Sanitary Collection Infrastructure Improvements

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Improve quality of life by improving the ability for the Village to properly collect and treat sewage
Property Protection	1	Prevent overflows of sewage into natural resources, as well as public and private partnerships.
Cost-Effectiveness	1	Current costs of emergency repairs and maintenance of outdated infrastructure is becoming increasingly high. This project would reduce those costs.
Technical	0	
Political	1	Village Residents and Business Owners are looking forward to improvements
Legal	1	Village has jurisdiction
Fiscal	-1	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	Mayor and Board of Trustees
Other Community Objectives	0	
<b>Total</b>	9	
<b>Priority</b>	High	



<b>Name of Jurisdiction:</b>	Village of Wappingers Falls
<b>Name and Title Completing Worksheet:</b>	Scott Williams Village Grant Writer
<b>Action Number:</b>	VWF-3
<b>Mitigation Action Name:</b>	Wappingers Falls Storm Drainage Infrastructure Improvements

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Severe Storm, Flooding
<b>Specific problem being mitigated:</b>	Improve the drainage infrastructure of the village by embracing bioretention, implementing bioswales, retention ponds, and installing riparian buffers to prevent stream bank erosion
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Conventional drainage pipes- these pipes do not promote ground water recharge of storm runoff and therefore carry sedimentation into the Wappinger Creek and Lake.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The Village of Wappingers Falls would like to curb the amount of runoff that carries sediment into the Wappinger Creek and Wappinger Lake. The lake is a flood storage resource that is negatively impacted by sedimentation and phosphorous loading. These problems can be stopped by installing open bioswales where there are existing outfalls. Additionally, the addition of retention ponds and ground water recharge systems are essential to stopping the destruction of the Wappinger Lake. The Village also looks to correct inflow and infiltration of storm water into the sanitary collection system.
<b>Mitigation Action Type</b>	SIP, NSP, EAP
<b>Goals Met</b>	1,2,4,6
<b>Applies to existing and or new development, or not applicable</b>	Existing and New development
<b>Benefits (losses avoided)</b>	Avoids the deterioration of the Wappinger Lake, which serves as flood storage for the Village as well as recharges the aquifer which provides drinking water. The Lake also provides recreational use for residents.
<b>Estimated Cost</b>	17,500,000
<b>Priority*</b>	3
Plan for Implementation	
<b>Responsible Organization</b>	Village of Wappingers Falls, Dutchess County
<b>Local Planning Mechanism</b>	Natural Resources Management Plan for the Wappinger Creek Watershed
<b>Potential Funding Sources</b>	NYS DEC, EPA, FEMA, CDBG-HUD
<b>Timeline for Completion</b>	10 years
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:



**Action Number:** VWF-3

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**Mitigation Action Name:** Wappingers Falls Storm Drainage Infrastructure Improvements

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Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	These improvements would increase flood storage in an effort to protect the Village from flooding
Property Protection	1	Protect properties (public & private) from flooding
Cost-Effectiveness	0	
Technical	1	
Political	1	The Village residents are deeply attached to the Wappinger Creek and Lake, they support the efforts to remedy it.
Legal	0	Many of the problem areas which need to be addressed are outside the Village, located on the property of the Dutchess County Airport (as described in the Natural Resources Management Plan for the Wappinger Creek Watershed)
Fiscal	-1	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	Mayor and Board of Trustees
Other Community Objectives	0	
<b>Total</b>	8	
<b>Priority</b>	High	



Name of Jurisdiction: Village of Wappingers Falls  
 Name and Title Completing Worksheet: Scott Williams, Grant Writer  
 Action Number: VWF-4  
 Mitigation Action Name: Wappingers Falls Energy Resiliency Improvements

Assessing the Risk	
Hazard(s) addressed:	Severe Storm
Specific problem being mitigated:	Preventing Power Failure
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Solar powered streetlights, however solar power is intermittent and ineffective in snow and dark skies.
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Village of Wappingers Falls is looking to create an islanded microgrid to prevent the loss of critical services, emergency response centers, and shelters. This microgrid will include existing and proposed solar matched with natural gas generators and hydropower.
Mitigation Action Type	SIP
Goals Met	1,2,4,5
Applies to existing and or new development, or not applicable	Existing and new
Benefits (losses avoided)	Avoids loss of power to emergency shelters, response centers, and critical services (water and sewer) plants
Estimated Cost	5 million-7million
Priority*	Medium
Plan for Implementation	
Responsible Organization	Village of Wappingers Falls, Tri-Municipal Sewer Commission
Local Planning Mechanism	N/A
Potential Funding Sources	NYSERDA, FEMA
Timeline for Completion	5 years
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



**Action Number:** VWF-4

**Mitigation Action Name:** Wappingers Falls Energy Resiliency Improvements

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provide increased disaster resiliency to critical response centers (SW Johnson Firehouse)
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	
Fiscal	0	Feasibility study being conducted as of July 2015
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	0	
Other Community Objectives	0	
<b>Total</b>	9	
<b>Priority</b>	Medium	



Name of Jurisdiction: Village of Wappingers Fall  
 Name and Title Completing Worksheet: \_\_\_\_\_  
 Action Number: VWF-5  
 Mitigation Action Name: Reconstruct Sewer Line from Village border to Pump Station

Assessing the Risk	
Hazard(s) addressed:	Water Quality
Specific problem being mitigated:	Insufficient capacity in sewer
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Do nothing. Problem continues and worsens. Reconstruct sewer line for long-term benefits.
Action/Project Intended for Implementation	
Description of Selected Action/Project	Reconstruct the sewer line from the Village border to the pump station to accommodate additional flow and carry it to the Tri-Municipal Sewer Facility. The Village estimates this project to require \$7.2 million to complete.
Mitigation Action Type	SIP
Goals Met	1, 2, 5, 6
Applies to existing and or new development, or not applicable	Existing
Benefits (losses avoided)	Avoids damage to Wappinger Lake and recreational benefits losses, avoids water quality deterioration, decreases groundwater pressure from insufficient system capacity, reduces number/frequency of backups and cleanup costs, and lessens stormwater runoff and sewer overflows into watershed and Lake.
Estimated Cost	\$7.2 million (High)
Priority*	Medium
Plan for Implementation	
Responsible Organization	Village of Wappingers Falls
Local Planning Mechanism	Municipality
Potential Funding Sources	EFC, State
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number:

VWF-5

Mitigation Action Name:

Reconstruct Sewer Line from Village border to Pump Station

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will ensure a lower likelihood of sewage contamination and backflow, reducing public health threats.
Property Protection	1	Will reduce the possibility of backflow and possible damage to residences.
Cost-Effectiveness	0	
Technical	-1	
Political	1	
Legal	1	
Fiscal	-1	Expense of project.
Environmental	1	Will reduce the potential for sewage contamination.
Social	1	
Administrative	0	
Multi-Hazard	0	
Timeline	0	
Agency Champion	1	Strong support from Village.
Other Community Objectives	1	
<b>Total</b>	<b>6</b>	
<b>Priority</b>	<b>Medium</b>	



Name of Jurisdiction: Village of Wappingers Fall  
 Name and Title Completing Worksheet: \_\_\_\_\_  
 Action Number: VWF-6  
 Mitigation Action Name: Wappinger Lake Dam Infrastructure Improvements

Assessing the Risk	
Hazard(s) addressed:	Dam Failure, Flooding
Specific problem being mitigated:	Aging dam infrastructure
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Repair dam from costly damages from previous storms and issues that are the result of aging infrastructure.
Action/Project Intended for Implementation	
Description of Selected Action/Project	Add modern infrastructure components to the Wappinger Lake dam. Added infrastructure is needed to better manage the dam's ongoing maintenance.
Mitigation Action Type	SIP
Goals Met	2, 3, 5, 6
Applies to existing and or new development, or not applicable	Existing
Benefits (losses avoided)	Prevent dam failure, which could damage the hydroelectric facility and those living/working in the flood areas at the bottom of the gorge underneath the dam. Dam failure would allow 37 miles of the creek to descent on the Bleachery, hydroelectric facility, and other businesses.
Estimated Cost	Medium
Priority*	High
Plan for Implementation	
Responsible Organization	Municipality
Local Planning Mechanism	
Potential Funding Sources	FEMA
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number:

VWF-6

Mitigation Action Name:

Wappinger Lake Dam Infrastructure Improvements

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	0	
Technical	0	
Political	1	
Legal	-1	
Fiscal	1	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	0	
<b>Total</b>	9	
<b>Priority</b>	High	



Name of Jurisdiction: Village of Wappingers Fall  
 Name and Title Completing Worksheet: \_\_\_\_\_  
 Action Number: VWF-7  
 Mitigation Action Name: Second water loop under Wappinger Creek

Assessing the Risk	
Hazard(s) addressed:	Loss of Water
Specific problem being mitigated:	Lack of redundancy in water distribution system
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	Install a second water loop. Do nothing – problem continues and worsens, as do costs.
Action/Project Intended for Implementation	
Description of Selected Action/Project	Construct a second water loop downhill and under the Wappinger Creek to add redundancy and create a more resilient drinking water system.
Mitigation Action Type	SIP
Goals Met	1, 5, 6
Applies to existing and or new development, or not applicable	New
Benefits (losses avoided)	Fire protection (for value and future value of Bleachery businesses), lost revenue from potential business development, business interruption for 80% of Village in event of water main break (including \$50 million of commercial real estate in Town of Wappinger)
Estimated Cost	Medium
Priority*	Medium
Plan for Implementation	
Responsible Organization	Municipality
Local Planning Mechanism	
Potential Funding Sources	FEMA, EFC
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



**Action Number:** VWF-7

**Mitigation Action Name:** Second water loop under Wappinger Creek

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	0	
Cost-Effectiveness	-1	
Technical	0	
Political	1	
Legal	1	
Fiscal	-1	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	Also provides for fire protection
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	Benefits neighboring Town of Wappinger
<b>Total</b>	<b>7</b>	
<b>Priority</b>	<b>Medium</b>	



Name of Jurisdiction: Village of Wappingers Fall  
 Name and Title Completing Worksheet: \_\_\_\_\_  
 Action Number: VWF-9  
 Mitigation Action Name: Oak Park Housing I/I

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Water Quality
<b>Specific problem being mitigated:</b>	Sewer overflows
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	Do nothing – problem continues and worsens.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Improve the I/I at the Oak Park housing development to ensure adequate drainage, increase sewer commission customer base, reduce sewage overflows, decrease sewage costs, and better protect the watershed and the Hudson River from sewage overflows. Project specifics may result from the Shared Sewer Commission’s I/I capacity study suggestions.
<b>Mitigation Action Type</b>	SIP, NSP
<b>Goals Met</b>	1, 2, 5, 6
<b>Applies to existing and or new development, or not applicable</b>	New
<b>Benefits (losses avoided)</b>	Hazard averted at xx number of houses between the Oak Park neighborhood and pump station, where there are frequent severe weather related sewer backups. Cost at the sewer commission for additional flow. Overflow into creek and lake (cost of recreation and water quality).
<b>Estimated Cost</b>	\$5,800,000 (High)
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Municipality
<b>Local Planning Mechanism</b>	
<b>Potential Funding Sources</b>	EFC, NYSDEC
<b>Timeline for Completion</b>	Short
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:



**Action Number:** VWF-9

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**Mitigation Action Name:** Oak Park Housing I/I

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Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	0	
Technical	0	
Political	1	
Legal	1	
Fiscal	-1	
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	
Other Community Objectives	1	
<b>Total</b>	9	
<b>Priority</b>	High	