



## 9.8 TOWN OF EAST FISHKILL

This section presents the jurisdictional annex for the Town of East Fishkill.

### 9.8.1 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
Rick Witt, Engineering Assistant, Hazard Mitigation Administrator 330 Route 376, Hopewell Junction (845) 221-2427 <a href="mailto:wittr@eastfishkillny.org">wittr@eastfishkillny.org</a>	John Hickman, Supervisor 330 Route 376, Hopewell Junction (845) 221-4303 <a href="mailto:hickmanj@eastfishkillny.org">hickmanj@eastfishkillny.org</a>

### 9.8.2 Municipal Profile

The Town of East Fishkill is located in the southern part of Dutchess County at the northernmost edge of the New York City Metropolitan Area. New York City is approximately 75 miles from the Town. East Fishkill is bordered by five other Dutchess County towns; Fishkill to the west; Wappinger to the northwest; LaGrange to the north; Beekman to the east; and Pawling at the southeastern-most corner of the Town. To the south, East Fishkill shares its border with towns of Kent and Philipstown in Putnam County. Poughkeepsie, the seat of Dutchess County, lies approximately ten miles northwest of Hopewell Junction. The Hudson River flows approximately eight miles west of the Town (EF Comp Plan. 2002).

The Town encompasses the hamlets of Arthursburg, East Fishkill, Fishkill Plains, Gayhead, Hillside Lake, Hopewell Junction, Hortontown, Lake City, Lomala, Pecksville, Shenandoah, Stormville and Wiccopee.

The Town of East Fishkill is part of the Fishkill Creek and Croton Watersheds, both within the greater Hudson River drainage basin ([DutchessWatersheds.org](http://DutchessWatersheds.org)). The Fishkill Creek, the most prominent water feature in East Fishkill, is also located in the lower Hudson River Watershed.

According to the 2010 U.S. Census, the Town of East Fishkill has a population of 29,029.

### 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.

**Table 9.8-1. 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>					
Orthopedic Associates	Commercial	1	Rt. 52 6356-04-555168	None identified	Complete
Arthursburg Corners	Commercial	4	Rt. 82 6559-03-360250	None identified	80% Complete
Jackson Corners, Phase 2	Residential	6	Townsend Rd. 6456-04-970080 6456-04-006094	None identified	10% Complete
Taconic Innovations	Commercial	2	Rt. 376	None identified	Complete





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
			6358-02-839550 6358-02-823538		
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
The Mews at Hopewell	Residential	89	Rt. 376	None identified	Land Excavation

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

### 9.8.3 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 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, as well as the 2013 Town of East Fishkill HMP.

**Table 9.8-2. Hazard Event History**

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
January 24, 1996	Severe Storms, Flooding	DR-1095	Yes	A strong low pressure system produced damaging southerly winds across all of eastern New York. Heavy winds downed trees, limbs and power lines across the area. Southern Dutchess County saw some of the worst damage with over 6,000 customers losing power. In the days following, rapid rainfall of up to 3 inches and snowmelt from unseasonably warm temperatures resulted in widespread flooding across Dutchess County. Small stream flooding washed out roads across the county, and extensive flooding occurred along the Hudson River and Wappingers Creek. The wind, rain, and floods led to an estimated \$7.03 million in property damages in Dutchess County.
September 16-19, 1999	Hurricane Floyd	DR-1296	Yes	Remnants of Hurricane Floyd brought heavy rains and strong wind gusts of up to 60 mph into New York State September 16 <sup>th</sup> to 17 <sup>th</sup> . Strong winds combined with saturated grounds to cause major tree, power line, and vehicle damage throughout Eastern NY. Rains produced widespread flooding, and in a nine-year-old girl was drowned in Dutchess County. Massive power outages followed, affecting as many as 80,000 people in the Mid-Hudson Valley for a week or more. Floyd resulted in the counties of Albany, Dutchess, Greene and Rensselaer being declared "major disaster areas" by Governor Pataki, and on September 30 these counties were included in the national Disaster Declaration. As of December 6, 1999, 69 grants totaling \$121,441 in disaster aid for Dutchess County had been approved. Other sources reported combined property damages in Dutchess County to be approximately \$1.4 million.
May 3 – August 12, 2000	Severe Storms	DR-1335	Yes	A series of severe thunderstorms and hailstorms overwhelmed the region in the spring and summer of 2000. On July 14 <sup>th</sup> , rainfall totals at Poughkeepsie, Dutchess County, reached 1.23 inches over 24 hours. On July 21, FEMA declared a disaster declaration due to major storms and flooding and authorized funding for the counties throughout New York State. On August 9 <sup>th</sup> , a severe



Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
				thunderstorm swept through the region, further crippling recovering communities. On August 25 <sup>th</sup> , FEMA added six counties, including Dutchess, to the disaster declaration. Estimates of the damage incurred during the incident period range up to \$6.1 million for Dutchess County.
April 14-18, 2007	Severe Storms and Inland and Coastal Flooding	DR-1692	Yes	Heavy rain led to widespread flooding of small streams and creeks across the county, which began during the early morning hours of Monday, April 16 <sup>th</sup> , and persisted into Wednesday morning on the 18 <sup>th</sup> . New York State experienced millions in eligible damages. FEMA gave out more than \$61 million in assistance to affected counties within the State. Property damages in Dutchess County were estimated at \$5.7 M.

### 9.8.4 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 Town of East Fishkill. 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 Town of East Fishkill.

Table 9.8-3. 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: \$7,704,555.00 500-year MRP: 52531633 Annualized: \$629,345.00	Frequent	48	High
Drought	Damage estimate not available	Frequent	42	High
Earthquake	100-Year GBS: \$0 500-Year GBS: \$2,303,227 2,500-Year GBS: \$34,390,715	Occasional	32	High
Extreme Temperature	Damage estimate not available	Frequent	21	Medium
Flood	1% Annual Chance: \$185,025,408	Frequent	36	High
Severe Storm	100-Year MRP: \$7,704,555 500-year MRP: \$52,531,633 Annualized: \$629,345	Frequent	48	High
Winter Storm	1% GBS: \$63,900,574 5% GBS: \$319,502,872	Frequent	51	High
Wildfire	Estimated Value in the WUI: \$6,629,966,233	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 Town of East Fishkill.

Table 9.2-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Town of East Fishkill	208	96	\$1,810,805.47	13	3	140

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 includes 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 9.2-5. 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>
Brettview Pump	Potable Pump	X	X	-	-	-
United Wappinger Storage Facility #1	Potable Storage Facility	X	X	8.9	-	-
United Wappinger Well #4	Well	X	X	-	-	-
United Wappinger Well #5	Well	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.

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:





- According to the 2012 Dutchess County, New York, Flood Insurance Study (FIS), areas adjacent to Sprout Creek, Whortlekill Creek, and Sylvan Lake Outlet in the Town of East Fishkill are subject to inundation. This includes residential areas near Sprout Creek in Lomala. Industrial and residential developments near the low-lying floodplain of Whortlekill Creek in the vicinity of Hopewell Junction can be inundated. Areas which are currently being developed along Sylvan Lake Outlet are also subject to flooding.
- According to the Ice Engineering Group at the USACE Cold Regions Research and Engineering Laboratory (CRREL) database, ice jams have historically formed at various points along the Fishkill Creek in the hamlet of Hopewell Junction within the Town of East Fishkill.

### 9.8.5 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 Town of East Fishkill.

Table 9.2-6. 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	Yes		Planning/Zoning	Adopted 2002; under review
Capital Improvements Plan	No			
Floodplain Management / Basin Plan	Yes		Building Inspector	Adopted 1987
Stormwater Management Plan	Yes		Building/Engineering	Adopted 2007; Updated 2010. Chapter 157 as per DEC
Open Space Plan	No			Under development; To be adopted 2013
Stream Corridor Management Plan	Yes		Planning/Building	Adopted April 1987
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	No			
Emergency Response Plan	No			
Post-Disaster Recovery Plan	Yes		Building/Police/Fire	Adopted 1993; Updated 1998; Needs updating



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.)
Transportation Plan	No			
Strategic Recovery Planning Report				
Other Plans:				
Hazard Mitigation Plan	No		Town Engineer	Countywide update in progress (2015)
<b>Regulatory Capability</b>				
Building Code	Yes		Building	
Zoning Ordinance	Yes	Local	Building/Zoning; Planning Board; Zoning Board of Appeals	Adopted 1964; Updated 201; Updated regularly
Subdivision Ordinance	Yes	Local	Planning/Zoning; Planning Board; Zoning Board of Appeals	Adopted 1974; Updated 2010; Chapter 163; Updated regularly
NFIP Flood Damage Prevention Ordinance	Yes		Building Inspector	Adopted 2012; Chapter 108 as per FEMA/DEC
NFIP: Cumulative Substantial Damages	No	Local		
NFIP: Freeboard	Yes	State, Local		
Growth Management Ordinances				
Site Plan Review Requirements	Yes	Local	Planning Board; Zoning Board of Appeals	
Stormwater Management Ordinance	Yes		Building/Engineering	Adopted 2007; Updated 2010. Chapter 157 as per DEC
Municipal Separate Storm Sewer System (MS4)	Yes			
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	Yes		Building/Police/Fire	Adopted 1993; Updated 1998; Needs updating
Real Estate Disclosure Requirement				
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes			Steep Slopes are 3:1 slopes and cover a minimum of 5,000 sq. ft.; Adopted 2007; Chapter 154

**Administrative and Technical Capability**

The table below summarizes potential staff and personnel resources available to the Town of East Fishkill.

**Table 9.2-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
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Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board; Zoning Board of Appeals
Mitigation Planning Committee	Yes	Formed during 2011 HMP process
Environmental Board/Commission	Yes	Conservation Advisory Council
Open Space Board/Committee	Yes	Conservation Advisory Council
Economic Development Commission/Committee		
Maintenance Programs to Reduce Risk	Yes	Highway, MS4
Mutual Aid Agreements	Yes	
<b>Technical/Staffing Capability</b>		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Planning / Building Department; Michelle Robbins / AKRF
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Engineering Department; In-house engineers; Scott Bryant (contract vendor)
Planners or engineers with an understanding of natural hazards	Yes	Planning / Building Department; Michelle Robbins / AKRF
NFIP Floodplain Administrator	Yes	Building Inspector – currently Ken Beyer
Surveyor(s)	Yes	Contract Vendor (Morris Associates)
Personnel skilled or trained in GIS and/or HAZUS-MH applications	Yes	Building Department – Rick Witt
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	Police; Lt. Kevin Keefe
Grant Writer(s)	Yes	Contract Vendor (Victor Cornelius / Endeavor Inc.)
Staff with expertise or training in benefit/cost analysis	Yes	Finance
Professionals trained in conducting damage assessments	Yes	

**Fiscal Capability**

The table below summarizes financial resources available to the Town of East Fishkill.

**Table 9.2-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	Yes, managed through Town Supervisor
Capital Improvements Project Funding	Yes, managed through Finance
Authority to Levy Taxes for specific purposes	Yes, managed through Finance/Budget
User fees for water, sewer, gas or electric service	No
Impact Fees for homebuyers or developers of new development/homes	Yes, managed through Engineering/Finance/Planning
Stormwater Utility Fee	Yes, managed through Engineering/Finance/Planning
Incur debt through general obligation bonds	Yes, managed through Town Board and Finance
Incur debt through special tax bonds	Yes, managed through Town Board and Finance
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	FEMA, NYS DHSES and NYS DEC Grant Programs
Open Space Acquisition Funding Programs	Yes



Financial Resources	Accessible or Eligible to Use (Yes/No)
Other	No

### Community Classifications

The table below summarizes classifications for community program available to the Town of East Fishkill.

**Table 9.2-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	Yes	8	October 2015
Building Code Effectiveness Grading Schedule (BCEGS)	NP	N/A	
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	5	2012/3
Storm Ready	NP	N/A	
Firewise	NP	N/A	
Disaster/Safety Programs in/for Schools			
Organizations with Mitigation Focus (advocacy group, non-government)	No	N/A	Fishkill Creek Watershed Association; Conservation Advisory Council
Public Education Program/Outreach (through website, social media)	Yes	N/A	As part of CRS and MS4 programs
Public-Private Partnerships	Yes	N/A	Fishkill Creek Watershed Association

*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 Town of East Fishkill’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.8-4. 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
Administrative and Technical Capability			X
Fiscal Capability		X (mitigation projects often rely on available grant funding and other privately secured resources such as flood insurance)	
Community Political Capability			X
Community Resiliency Capability			X
Capability to Integrate Mitigation into Municipal Processes and Activities.			X

### National Flood Insurance Program

#### NFIP Floodplain Administrator (FPA)

Kenneth Beyer, Building Inspector

#### Flood Vulnerability Summary

Since 1978, 96 NFIP claims have been paid totaling \$1,810,805. As of 12/31/2014, there are 13 Repetitive Loss and 3 Severe Repetitive Loss properties in the community.

#### Resources

The Town Engineer is designated within the Town’s Flood Damage Prevention Ordinance (Ch. 108) as the NFIP Floodplain Administrator. Floodplain administrative activities are supported by the Building Department through the Town’s Building Inspector/Zoning Administrator. Both the Town Engineer and Building Inspector/Zoning Administrator are members of the mitigation planning committee and were actively involved in the development of the Town’s 2011 HMP and this HMP update.

The Town considers themselves to be proactive with floodplain management and mitigating flood risk. Outreach to floodprone property owners has been ongoing, and was further enhanced as a result of this planning effort as detailed in the public outreach discussion in Section 3. The Town’s planning, regulatory and site plan review process have historically given consideration to the flood hazards, and ordinances have continued to be reviewed and strengthened to further manage natural hazard risk. The Town has an ongoing program to acquired undeveloped land in hazard prone areas. The 2011 HMP and this update include a number of initiatives that will further enhance their ability to manage flooding and other natural hazard risks, including the amendment of several ordinances, mitigating floodprone properties (including several RL/SRL properties), and becoming a “Climate Smart Community”



The Town joined the NFIP Community Rating System and will be designated a Class 8 in October 2015

### Compliance History

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Currently the Town has no outstanding NFIP compliance issues, and completed a Community Assistance Visit in 2014 as part of their process to join the CRS program.

### Regulatory

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The Town of East Fishkill actively participates in the NFIP, has adopted a Flood Damage Prevention Ordinance which is administered locally by their Floodplain Administrator, and makes current NFIP Flood Insurance Rate Maps (FIRMs) available for review by the public. The Town Engineer is designated within the Town's Flood Damage Prevention Ordinance (Ch. 108) as the NFIP Floodplain Administrator.

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

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

### Planning

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**Comprehensive/Master Planning:** The Town's current comprehensive plan was adopted in May 2002. Implementation of the Comprehensive Plan is supported by the Town's zoning, subdivision and other related land-use ordinances, and the Town of East Fishkill Planning Board through their site-plan review process. Further the Town is supported by a contract municipal planner (AKRF, Inc.) to assist with ongoing land-use planning issues in the community.

During the next update of the comprehensive plan, the Town shall ensure that the findings and recommendations of this plan are appropriately incorporated such that these plans become consistent and mutually-supportive mechanisms to manage natural hazard risk.

**Stormwater Management Planning:** With contract support (Stormwater Management Consultants, Inc.), the Town has developed a stormwater management plan that include local initiatives to protect water quality and reduce local flooding, including a prioritized plan to meet current and future needs for repair, expansion and management of local stormwater infrastructure. Maintenance programs are developed to continually assess the condition of the stormwater system, to track sediment by volume and type removed, and to reduce the likelihood of flooding due to clogged collection and conveyance systems. Progress on, and updates to, the Town's stormwater management program are documented in annual progress reports.

Stormwater management activities in the Town are further supported by the Dutchess County Regulated MS4 Coordination Committee and the Dutchess County Soil and Water Conservation District. Further guidance is provided by the recently released New York State Stormwater Manual which the Town has found to be a valuable resource.

**Fishkill Creek Watershed Association of Dutchess and Putnam Counties:** The Town participates in the Fishkill Creek Watershed Association of Dutchess and Putnam Counties, which promotes regional watershed planning and mitigation.



## Regulatory and Enforcement (Ordinances)

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**Higher Regulatory Standards:** The Town has adopted higher regulatory and zoning standards to protect environmentally sensitive areas and manage natural hazard risk; including:

- Reduced allowable densities of wetlands and steep slopes, specifically all acreage in slopes greater than 20%, floodplains, and wetlands shall not count more than 50% towards development density.
- Adopted an R-3 zone in the Township (minimum lot size of 3 acres per dwelling unit), to apply to the southern part of East Fishkill covered by the Taconic Mountain range and the New York City watershed, to recognize the environmentally sensitive lands throughout the mountains.

## Operational and Administration

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Hazard mitigation and natural hazard risk reduction is supported by various departments, boards and committees within the Town, as described below:

**Town Board:** The Town Board enacts legislation, sets policy, authorizes expenditures, and develops and adopts budgets. The Town Supervisor oversees all day-to-day operations.

**Planning/Zoning Department:** The Planning and Zoning Department provides support to the Planning Board and the Zoning Board of Appeals, enforcing all Decisions and Approvals by said Boards, in regard to Site Plan, Subdivision and Development Applications.

**Planning Board:** The Planning Board has the power and authority to approve plats for subdivisions within the Town. The Planning Board reviews, comments and can approve all Site Plan Applications and Special Permits.

**Zoning Board of Appeals:** The Zoning Board of Appeals is appointed by the Town Board and is responsible for the interpretation of the Zoning Code and the granting of special permits and variances. The Zoning Board of Appeals hears and makes decisions on appeals and requests for variances from the requirements of the Town Zoning Code. In some cases the Zoning Board approves Special Permits.

**Engineering Department:** The Engineering Department is responsible for the review of all Site and Plot Plans and provides for on-site inspection as well as review and oversight of contracted projects. The Engineering Department designs and issues Contract Bids for various Town-wide contracts addressing drainage and flooding problems, sanitary sewer and water system expansions, the resurfacing of Town roads and installation of storm water systems, and the expansion and rehabilitation of Town facilities, such as the Community Center, various Recreation facilities and parking areas.

**Building Department:** The Building Department is responsible for the review of all Building Applications and the issuance of all Building Permits. The Building Department performs Plan review and onsite inspections to assure compliance with the Town Zoning Code, and New York State Building, Residential, Plumbing Fire Prevention Codes for Public Safety.

**Fire Advisory Board:** The Fire Advisory Board is made up of five residents of the town. These members are appointed for one year each in January by the town board. The function of the Board is to review site plans, and subdivision plans for the purposes of addressing safety concerns of the general public, and the needs of emergency services. The Board was created and passed into law by the Town of East Fishkill in 1984 in response to the passage of the New York State Uniform Fire Prevention and Building Code. It operates under the Building Department and reports on plans referred to it by the Planning, Zoning, & Town Boards.



**Highway Department:** The Highway Department is responsible for the maintenance of approximately 200 miles of roads in the Town of East Fishkill. In addition, the Highway Department inspects, repairs, and maintains all Town-owned storm water facilities, culverts and bridges and performs clearing and maintenance within all Town rights-of-way and along roadside power lines.

### **Funding**

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**Open Space Funding and Acquisition:** The Town has had an ongoing program to purchase undeveloped vulnerable property to prevent inappropriate development, including the recent purchase (2012) of over 147 acres that included ~40 acres of floodplain.

### **Education and Outreach**

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The Town has a very broad and active program of public education and outreach. The Town provides natural hazard preparedness and risk reduction information to the public via public meetings, website, newsletter, mailings, social media, and other through other available resources. The Town website is maintained and updated constantly. The document center in the lobby of Town Hall is maintained, and contains a section dedicated to managing flood risk. Further, enhance education and outreach is part of the Town's CRS and MS4 programs

## **9.8.6 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 2013 Town of East Fishkill HMP. 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 9.8-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
PV-1: 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.	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations.
PV-2: Begin the process to adopt higher regulatory and zoning standards to manage flood hazard risk; specifically through the development and adoption of a cumulative substantial damage/improvements ordinance.	Ongoing, continuous.	Carry forward in updated strategy, including that the Town is working to get a change in zoning to establish complete non-disturbance in the floodway, and further limits in the floodplain in the areas of compensatory storage.
PV-3: 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 permitting when making repairs.</li> <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 (incl. loss of service, property damage, economic losses, etc.) as reported to and/or identified by the Town (e.g. building permit process).</li> </ul>	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations.  The Town conducted outreach as part of the CRS program. The Town has developed and enhanced record keeping systems, but is limited by the amount of activity property owners initiate with the Town.
PV-4: Join the NFIP Community Rating System (CRS) to further manage flood risk and reduce flood insurance premiums for NFIP policyholders. See following related Community Assistance Visit (CAV) initiative.	Complete.	The Town has completed the process to join CRS and will be identified as a Class 8 community in October 2015.
PV-5: Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. This is a part of the process of joining CRS (above initiative).	Complete.	As part of the CRS certification process, the Town had a CAV in 2014.
PV-6: Have designated 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).	Complete	NFIP FPA became a CFM in March 2014, and pursues continuing professional education for this and other certifications.



**Table 9.8-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
PV-7: Obtain and archive elevation certificates, as available, and encourage the preparation of elevation certificates for all structures in the SFHA.	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations.
PV-8: Become a NYSDEC “Climate Smart Community”.	Continuous, ongoing.	The Town continues to evaluate participation in this program, and will carry this forward in the updated mitigation strategy.
PV-9: Support the implementation, monitoring, maintenance, and updating of the Town of East Fishkill 2013 Hazard Mitigation Plan.	Continuous, ongoing.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations, as evidenced by participation in the current County Plan. Ongoing annual plan review will be needed to maintain CRS certification.
PV-10: Develop, adopt and enforce regulatory mechanisms to reduce the risk from vulnerable, sub-standard private bridges, and the public safety risk of development in areas where access is limited to a single, vulnerable bridge. The mechanisms developed will provide a definition of “bridge”, establish minimum design/construction standards for privately-owned bridges, and will establish the requirements for secondary access to mitigate the safety of residents in areas served by public bridges.	Ongoing, in discussion with Town and Planning and Zoning Boards.	This initiative shall be carried forward in the updated strategy.
PV-11: Adopt Zoning Amendment to require subdivisions to provide emergency access when a new public road is created that does not connect to a public road that has secondary access to a public road. Subdivisions created with driveways onto existing Town roads are exempt. The Town engineer may waive this requirement with the consent of the Highway superintendent.	Ongoing, in discussion with Town and Planning and Zoning Boards.	This initiative shall be carried forward in the updated strategy.  The Planning Board has the authority to require emergency access and has used this authority in the past (Flower Rd., Warren Farm Rd.), but there is no ordinance to that effect currently on the books.
PV-12: Adopt Zoning Amendment to limit length of dead end streets.	Complete.	Section 197-21 E. of the Town Highway specs limits the length of new local roads to no more than 2,500 linear feet.
<p>PV-13: Adopt Zoning Amendment requiring that all applications to the planning board shall review any and all Town planning documents and comment on the applicability of these Town polices to the proposed action. The Planning Board shall develop a list of these reports, which shall be updated from time to time, to be reviewed as part of the application. These reports shall include but are not limited to:</p> <ul style="list-style-type: none"> <li>• East Fishkill Master Plan</li> <li>• East Fishkill Historic Resources Inventory</li> <li>• Hudsonia Report: Significant Habitats of the Town of East Fishkill</li> <li>• Hazard Mitigation Plan (this plan)</li> <li>• Hopewell Hamlet Pedestrian Report</li> </ul>	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations.



**Table 9.8-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
<ul style="list-style-type: none"> <li>Dutchess County Greenway Connections</li> </ul>		
PV-14: Develop and maintain mapping of all floodprone areas in the Town, FEMA delineated or otherwise, to support land use decision making (e.g. Planning Board, site plan review process, Conservation Advisory Council).	Ongoing, continuous. Funding is needed to fully complete the intent of this initiative.	This initiative shall be carried forward in the updated strategy, to further identify that the Town shall continue to maintain simple hand-marked maps of flood vulnerable areas as they become apparent.
PP-1: Mitigate vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option (in progress). Phase 2: Work with the property owners to implement selected action based on available funding from FEMA and local match availability.	Ongoing, continuous.	An amended version of this initiative shall be carried forward in the updated strategy. The Town continues to work with NYS DHSES, FEMA and floodprone property owners to mitigate their properties.  A LOI to mitigate several properties under Sandy HMGP was rejected by the State for minor administrative reasons.  The Town is currently supporting two property owners with a mitigation projects (Lake City, one elevation, one acquisition) under the New York Rising (Sandy) CDBG-DR program.
PP-2: Elevate East Hook Road in the area of Morgenthau Flats. This section of road has been repetitively damaged in flooding, and has received multiple Public Assistance reimbursements including Hurricane Irene.	No progress. Funding has not been secured to date.	An amended version of this initiative shall be included in the updated strategy, including identifying the Highway department as the lead role.  Improvements have been made to the Morgenthau Flats area which include: increasing the size of the pipes carrying the stream under East Hook Rd., extending the headwall, and installing check dams in the adjoining swale.
PP-3: Carol Drive and Creek Bend Streambank Stabilization – Engineer and install appropriate streambank stabilization. Previously installed stabilization in this area was inadequate and has been damaged. Currently the residential property in this area is at great risk for property and structural damage in the event of a significant flood event. This project is related to the Stream Monitoring and Maintenance initiative listed above.	No progress. Funding has not been secured to date.	An amended version of this initiative shall be included in the updated strategy, including identifying the Highway department as the lead role.
PP-4: Hillside Lake / CR33 Culvert Improvement Project – Upgrade the culvert which currently has no bottom and is vulnerable to scouring which would eventually result in damage to the roadway. County has agreed to provide the Town with the materials to upgrade the culvert. The town is investigating if a sufficiently sized culvert here would reduce the hazard category of the Hillside Lake dam from “B” to “A” (lower risk), which may require a formal dam break study.	No progress. Funding has not been secured to date.	An amended version of this initiative shall be included in the updated strategy, including identifying the Highway department as the lead role.  The culvert in question is a County structure. The Town has proposed a modification to the Hillside Lake dam and spillway as part of a grant application which is pending with FEMA and, in the event the project is funded, the Town would consult with the County to determine if that culvert can be upgraded.
PP-5: Work with utility companies and developers to	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as



**Table 9.8-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
underground (bury) utility lines wherever possible. Consider requiring underground utilities for new development. This is identified in the East Fishkill Comprehensive Plan. Work along with planning board so that under-grounding of utilities is promoted in development plans.		it refers to activities that are an ongoing and normal part of municipal operations. The Town requires undergrounding of all utilities for new subdivisions and major development.
PP-6: Carol Drive timber bridge – Replacement of the entire timber bridge structure, including abutments, which serves as the sole access to approximately 69 homes. The bridge pilings are located within the Fishkill Creek floodway, thus both vulnerable to the flood hazard and causal to local flooding issues.	Ongoing. This has been discussed.	A grant application has been made to FEMA to replace this span and the Poughkeepsie - Dutchess County Transportation Council had been asked if this project could be a part of a TIP or some other funding source; unfortunately, there appears to be no funds for this type of replacement.
PP-7: Phillips Road Bridge over the Fishkill Creek – Raising and replacement of the entire bridge structure located entirely in the Fishkill Creek floodway. The existing bridge deck is below FEMA’s 1% chance (100-year) Base Flood Elevation. The bridge deck routinely overtops in heavy rainfall events as the existing abutments cannot pass large storms, and is thus both vulnerable to the flood hazard and causal to local flooding issues.	Ongoing. Some work has been done.	This is actually a Dutchess County bridge.
PE-1: Develop and implement an enhanced all-hazards, public outreach / education / mitigation information program on natural hazard risks and what they can do in the way of mitigation and preparedness, including flood insurance. This program may include providing general natural hazard risk, preparedness and mitigation and related NFIP information in regular newsletter and mailings; earthquake and severe storm and winter storm mitigation, posting of flyers and other readily available NFIP informational materials at Town hall or distributing at regular civic meetings; preparation, distribution and analysis of public surveys; and developing/maintaining a natural hazard risk management webpage on the municipal website where information and mapping can be posted.	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations. The Town website is maintained and updated constantly. The document center in the lobby of Town Hall is maintained, and contains a section dedicated to managing flood risk. Further, this is part of the Town’s CRS and MS4 programs
PE-2: Enhance public outreach to residents of NFIP floodplain areas to inform of annual grant opportunities, etc. which may include periodic articles and handouts in the annual newsletter.	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations. See above. Further, this is part of the Town’s CRS and MS4 programs.
PE-3: Provide public education as to code compliance and the proper installation and operation of emergency generators.	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations. See above. Further, this is part of the Town’s CRS program.
NSP-1: Develop and implement a stream monitoring and maintenance program, working along with the Fishkill Creek Watershed Association and Cornell Cooperative Extension. This	Ongoing.	Carry forward in updated strategy.  Stream monitoring program has not had much progress due to lack of



**Table 9.8-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
program will establish a program and schedule for stream monitoring, identify appropriate resources to implement maintenance activities, and help to facilitate permitting and access issues.		funding. The Fishkill Creek Watershed Association is working on becoming a 501c3, which will then help with being able to apply for a receive grant funding.
NSP-2: Enhance/expand tree maintenance program (under contract with Asplundh) and coordination with utilities (Central Hudson Power).	Ongoing, continuous.	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations. The Town has an active tree management program to supplement the efforts of utilities.
NSP-3: Hillside Lake - Replacement of the stormwater collection systems and redirection to and installation of stormwater filtration systems to restore/improve the quality of the existing pond that is suffering from excessive sedimentation and vegetative growth. These efforts will help to maintain the lake's flood storage capacity.	No progress; lack of funding.	Carry forward in updated strategy.  The Town continues to seek grant funding for dam repairs and lake rehabilitation.
<p>ES-1: Develop an East Fishkill Dam Safety Program – Implement the following to improve local dam safety in the Town:</p> <ul style="list-style-type: none"> <li>• Develop an inventory of dams in the Town, or outside of the Town that would impact the Town in the event of failure (incl. Kiawana, Camp Alomar (DEP), dam at Milltown Road (Lake Ballard), Lake Sekunna, Hillside Lake, Lake Walton, Sharp Reservation Dam, Hope's Terrace, Emmadine Pond)</li> <li>• Coordinate with dam owners, including NYSDEC, to get copies of all prevailing reports, plans, etc. on dams that pose risk to the Town (incl. Emergency Response Plans (ERPs), Inspection Reports, Engineering and Construction Plans).</li> <li>• Conduct a review of regulatory compliance of all medium and high hazard dams (e.g. inspections, ERPs)</li> <li>• Develop and implement a protocol for how such data will be compiled, archived, maintained, and made available (incl. during emergency situations).</li> <li>• Develop and implement a public education outreach program to inform dam owners of their maintenance and inspection responsibilities.</li> <li>• Continue to meet and work with NYSDEC, NYCDEP, USACE and NYS DHSES to address dam safety issues, emergency plans and planning, and inspection coordination.</li> <li>• Develop a comprehensive and prioritized list of dam repair, upgrade and retrofit activities, including</li> </ul>	Ongoing. Some limited progress as funding and resources are available.	<p>An amended version of this initiative shall be carried forward, including the following:</p> <p>The inventory of dams has been essentially completed.</p> <p>With the loss of NYS DEC grant funding for addressing dams, the Town continues to seek available funding.</p>



**Table 9.8-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
<p>timelines and completion strategies (funding sources, grant application, permitting, etc.).</p> <ul style="list-style-type: none"> <li>Conduct dam-break analysis and risk assessment of all high and moderate hazard dams, identifying areas of inundation and human and property losses.</li> <li>Investigate and pursue potential funding sources to support the above activities.</li> </ul>		
<p>ES-2: Install backup power at the following critical facilities in the Town:</p> <ul style="list-style-type: none"> <li>Town Hall</li> <li>Community Center – This facility would be used as a cooling center once backup power was available</li> <li>Wappinger Central School District facilities (except John Jay High School which already has backup power)</li> </ul>	<p>In progress.</p>	<p>Carry forward in updated strategy.</p> <p>Town Hall – Not Complete Community Center – Complete Wappinger Central School District facilities (except John Jay High School)</p> <p>The Community Center has had a generator installed and the East Fishkill Fire District facility has a generator and space to provide for emergency shelter. In the past the Wappinger Central School District has worked with the County and the Town to provide back-up shelters.</p>
<p>ES-3: Develop and/or enhance emergency plans.</p>	<p>Ongoing, continuous.</p>	<p>This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations.</p> <p>In the event of an emergency, the East Fishkill Fire Training Headquarters has a communications center where Town, Fire, and Police officials meet to oversee emergency response.</p>
<p>ES-4: Create/enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.</p>	<p>Ongoing, continuous.</p>	<p>This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of municipal operations.</p> <p>The Town of East Fishkill not only works with the local fire and police responders, we also work closely with Dutchess County 911 in the event of an emergency.</p>
<p>SP-1: Lake Sekunna Dam (Long Hill) Spillway Improvements– Work with property owner and NYSDEC to address maintenance and safety issues as identified in the April 2012 NYSDEC inspection report. Based on preliminary inspections, the Town has proposed spillway improvements to help mitigate the risk of failure. Currently the town is looking into procedures to conduct work as an emergency action, and is investigating potential funding for the project. Sekunna Lake is routinely pumped by the Town’s Highway Department to prevent a dam breach that would result in devastating damage to downstream residences.</p>	<p>Ongoing, no significant progress</p>	<p>See dam safety initiative above.</p>



**Table 9.8-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
Downstream vulnerable areas include those in Wiccopee, Deerwood, Tamarack, East Hill and Laura Lane.		
SP-2: Hemlock Drive / Meli Pond Drainage Improvement Project – Complete this ongoing project by expanding the storage capacity of the pond, and improve the conduit under State Route 82 which is the hydraulic restriction in this area.	Completed in 2014	
SP-3: Continue to develop the Eagle Ridge Drainage Extension project along Clove Branch Road (to Larchmont Drive) and implement as funding is secured. This project will reduce flooding along Clove Branch Road, John Court, Peg Court, Jennifer Drive, and Fairfield Lane.	No progress. Not funded to date.	Carry forward in updated strategy.
SP-4: Hillside Lake Dam – Repair and upgrade the earthen dam embankment, concrete spillway and emergency spillway.	In progress.	Carry forward in updated strategy. A grant application has been submitted for this project.



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

The Town of East Fishkill has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2013 Town of East Fishkill HMP:

- Retrofitted the flood vulnerable bridge in Wiccopee (Tamarack 2).
- Upgraded culverts throughout the Town as needed.
- The Town has performed streambank stabilization projects as needed.

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

The Town of East Fishkill participated in a mitigation action workshop in May 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).

Table 9.8-11 summarizes the comprehensive-range of specific mitigation initiatives the Town of East Fishkill 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 9.8-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan.



**Table 9.8-11. 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	Mitigation Category	CRS Category
EF-1 (former PV-2)	Begin the process to adopt higher regulatory and zoning standards to manage flood hazard risk; specifically through the development and adoption of a cumulative substantial damage/improvements ordinance. The Town is working to get a change in zoning to establish complete non-disturbance in the floodway, and further limits in the floodplain in the areas of compensatory storage.											
	See above.	New and Existing	Flood, Severe Storm	2, 5, 7	NFIP Floodplain Administrator (FPA); with support from NYS DHSES, ISO, FEMA	Medium - High	Low-Medium	Municipal Budget	Ongoing	High	LPR	PR
EF-2 (former PV-8)	Become a NYSDEC “Climate Smart Community”. The Town continues to evaluate participation in this program.											
	See above.	N/A	All Hazards	2, 3, 6, 7	Town NFIP FPA	Medium - High	Low	Municipal Budget	Short (year 1)	High	LPR, EAP	PR, PI
EF-3 (former PV-10)	Develop, adopt and enforce regulatory mechanisms to reduce the risk from vulnerable, sub-standard private bridges, and the public safety risk of development in areas where access is limited to a single, vulnerable bridge. The mechanisms developed will provide a definition of “bridge”, establish minimum design/construction standards for privately-owned bridges, and will establish the requirements for secondary access to mitigate the safety of residents in areas served by public bridges.											
	See above.	New and Existing	All Hazards (except Extreme Temperature)	1, 2, 5, 7	Engineering and Planning/Zoning, with support of the Town Board	High (reduced infrastructure vulnerability, reduced public safety risk)	Low-Medium	Local Budget	Ongoing - in discussion with Town and Planning and Zoning Boards.	High	LPR	PR
EF-4 (former PV-11)	Adopt Zoning Amendment to require subdivisions to provide emergency access when a new public road is created that does not connect to a public road that has secondary access to a public road. Subdivisions created with driveways onto existing Town roads are exempt. The Town engineer may waive this requirement with the consent of the Highway superintendent.											
	See above.	New	All Hazards	1, 2, 5, 7	Engineering and Planning/Zoning, with support of the Town Board	High (reduced infrastructure vulnerability, reduced public safety risk)	Low-Medium	Local Budget	Ongoing - In discussion with Town and Planning and Zoning Boards.	High	LPR	PR
EF-5 (former PV-14)	Develop and maintain mapping of all floodprone areas as in the Town, FEMA delineated or otherwise, to support land use decision making (e.g. Planning Board, site plan review process, Conservation Advisory Council). The Town shall continue to maintain simple hand-marked maps of flood vulnerable areas as they become apparent. Funding is needed to fully complete the intent of this initiative.											
	See above.	New and Existing	Flood	2, 3, 5, 6	Engineering, Planning Board	Medium (improved understanding of flood risk areas)	Low	Local Budget	Short	High	LPR	PR



Table 9.8-11. 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	Mitigation Category	CRS Category
EF-6 (former PP-1)	<p>Mitigate vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option (in progress). Phase 2: Work with the property owners to implement selected action based on available funding from FEMA and local match availability (in progress). Specifically identified are properties in the following areas:</p> <ul style="list-style-type: none"> <li>• Lake City area</li> <li>• Warren Drive</li> <li>• Bykenhulle Road</li> <li>• McKeown Terrace</li> <li>• Circle Drive</li> <li>• Oak Ridge Road</li> <li>• Crown Hill Road</li> <li>• Harrigan Road</li> <li>• Creek Bend Road</li> <li>• Lomala Lane</li> <li>• Angela Court</li> <li>• Ninham Avenue</li> <li>• Pine Grove</li> </ul> <p>The Town continues to work with NYS DHSES, FEMA and floodprone property owners to mitigate their properties. A LOI to mitigate several properties under Sandy HMGP was rejected by the State for minor administrative reasons. The Town is currently supporting two property owners with mitigation projects (Lake City, one elevation, one acquisition) under the New York Rising (Sandy) CDBG-DR program.</p>											
	See above.	Existing	Flood	2, 3	Town Engineering via NFIP FPA) with NYS DHSES, FEMA support	High	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Ongoing (outreach and specific project identification); Long term DOF (specific project application and implementation)	High	SIP, EAP	PP, PI
EF-7 (former PP-2)	<p>Elevate East Hook Road in the area of Morgenthau Flats. This section of road has been repetitively damaged in flooding, and has received multiple Public Assistance reimbursements including Hurricane Irene. Improvements have been made to the Morgenthau Flats area which include: increasing the size of the pipes carrying the stream under East Hook Rd., extending the headwall, and installing check dams in the adjoining swale. Protection to the 500-year flood level (or "worst case scenario") shall be recognized during implementation (including funding acquisition).</p>											
	See above.	Existing	Flood	1, 2	Highway Department	High (reduced road closures, emergency management services / evacuations; road damage and ongoing maintenance)	High	Local budget; FEMA 404/406 funding as applicable	Ongoing - Funding has not been secured to date for full project implementation.	High	SIP	PP





**Table 9.8-11. 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	Mitigation Category	CRS Category	
EF-8 (former PP-3)	Carol Drive and Creek Bend Streambank Stabilization – Engineer and install appropriate streambank stabilization. Previously installed stabilization in this area was inadequate and has been damaged. Currently the residential property in this area is at great risk for property and structural damage in the event of a significant flood event.												
	See above.	Existing	Flood	2, 4	Highway Department; working with property owner	High (reduced risk to property erosion and residential structure damage)	High	HMA Grants with municipal and/or property owner funds for match	Short (to develop preliminary engineering solution and apply for mitigation grant funding). Funding has not been secured to date.	High	SIP, NSP	NR	
EF-9 (former PP-4)	Hillside Lake / CR33 Culvert Improvement Project – Upgrade the culvert which currently has no bottom and is vulnerable to scouring which would eventually result in damage to the roadway. County has agreed to provide the Town with the materials to upgrade the culvert. The town is investigating if a sufficiently sized culvert here would reduce the hazard category of the Hillside Lake dam from “B” to “A” (lower risk), which may require a formal dam break study. The culvert in question is a County structure. The Town has proposed a modification to the Hillside Lake dam and spillway as part of a grant application which is pending with FEMA and, in the event the project is funded, the Town would consult with the County to determine if that culvert can be upgraded.												
	See above.	Existing	Flood	1, 2, 7	Highway Department; working with Dutchess County DPW	High (reduced possibility of damage to County road; possible reduction of dam risk category)	Medium	Town Capital Budget; FEMA mitigation grant funding or other applicable funding	Short - Funding has not been secured to date.	High	SIP	PP	
EF-10 (former NSP-1)	Develop and implement a stream monitoring and maintenance program, working along with the Fishkill Creek Watershed Association and Cornell Cooperative Extension. This program will establish a program and schedule for stream monitoring, identify appropriate resources to implement maintenance activities, and help to facilitate permitting and access issues. Stream monitoring program has not had much progress due to lack of funding. The Fishkill Creek Watershed Association is working on becoming a 501c3, which will then help with being able to apply for a receive grant funding.												
	See above.	N/A	Flood	2, 3, 4, 7	Fishkill Creek Watershed Association working along with Cornell Cooperative Extension	Medium – High (reduced flood risk; improved protection of natural resources)	Medium	Local Budget; Grant funding as available	Short (DOF)	High	NSP	NR	



Table 9.8-11. 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	Mitigation Category	CRS Category
EF-11 (former NSP-3)	Hillside Lake Stormwater Improvements - Replacement of the stormwater collection systems and redirection to and installation of stormwater filtration systems to restore/improve the quality of the existing pond that is suffering from excessive sedimentation and vegetative growth. These efforts will help to maintain the lake's flood storage capacity. The Town continues to seek grant funding for dam repairs and lake rehabilitation. See Action Worksheet.											
	See above.	Existing	Flood, Severe Storm	2, 4	Engineering and DPW; working with NYSDEC	High	High	Sandy HMGP application submitted; local budget for match	Short DOF	Medium	NSP, SIP	NR
EF-12 (former ES-1)	Develop an East Fishkill Dam Safety Program – Implement the following to improve local dam safety in the Town: <ul style="list-style-type: none"> <li>• Develop an inventory of dams in the Town, or outside of the Town that would impact the Town in the event of failure (incl. Kiawana, Camp Alomar (DEP), dam at Milltown Road (Lake Ballard), Lake Sekunna, Hillside Lake, Lake Walton, Sharp Reservation Dam, Hope's Terrace, Emmadine Pond)</li> <li>• Coordinate with dam owners, including NYSDEC, to get copies of all prevailing reports, plans, etc. on dams that pose risk to the Town (incl. Emergency Response Plans (ERPs), Inspection Reports, Engineering and Construction Plans).</li> <li>• Conduct a review of regulatory compliance of all medium and high hazard dams (e.g. inspections, ERPs)</li> <li>• Develop and implement a protocol for how such data will be compiled, archived, maintained, and made available (incl. during emergency situations).</li> <li>• Develop and implement a public education outreach program to inform dam owners of their maintenance and inspection responsibilities.</li> <li>• Continue to meet and work with NYSDEC, NYCDEP, USACE and NYS DHSES to address dam safety issues, emergency plans and planning, and inspection coordination.</li> <li>• Develop a comprehensive and prioritized list of dam repair, upgrade and retrofit activities, including timelines and completion strategies (funding sources, grant application, permitting, etc.).</li> <li>• Conduct dam-break analysis and risk assessment of all high and moderate hazard dams, identifying areas of inundation and human and property losses.</li> <li>• Investigate and pursue potential funding sources to support the above activities. Some limited progress as funding and resources are available. The inventory of dams has been essentially completed. With the loss of NYS DEC grant funding for addressing dams, the Town continues to seek available funding.</li> </ul>											
	See above.	Existing	Dam Failure; Flood; Earthquake (due to liquefaction)	1, 2, 3, 5, 6, 7	Engineering; working with owners of dams (e.g. NYSDEC; NYCDEP, private owners) and NYS DHSES	High (reduced risk of dam failure; life safety)	Low (develop inventory, compile data, plans, etc.; Medium – High for technical assessments, engineering and construction	Local Budget; Grant funding to support engineering and construction activities as available	Short – Long (DOF)	High	EM*, SIP	PP, PI, ES
EF-13 (former ES-2)	Install backup power at the following critical facilities in the Town: Town Hall Wappinger Central School District facilities (except John Jay High)											



**Table 9.8-11. 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	Mitigation Category	CRS Category
	See above.	Existing	Severe Storm; Severe Winter Storm; Extreme Temperatures	1, 2, 5, 7	Engineering and DPW, and Wappinger CSD Board	High (reduced interruption of critical facilities and services; life safety)	Medium - High	Local Budget; Emergency Management grants as available	Short (DOF)	High	SIP, EM*	ES
EF-14 (former SP-3)	Continue to develop the Eagle Ridge Drainage Extension project along Clove Branch Road (to Larchmont Drive) and implement as funding is secured. This project will reduce flooding along Clove Branch Road, John Court, Peg Court, Jennifer Drive, and Fairfield Lane. Not funded to date. Protection to the 500-year flood level shall be recognized during implementation (including funding acquisition).											
	See above.	Existing	Flood	2	Engineering and Department of Public Works	High (improved stormwater management; reduced local flooding impacts to properties)	High	Town Budget	Long-term DOF	Medium	SIP	PP
EF-15 (former SP-4)	Hillside Lake Dam – Repair and upgrade the earthen dam embankment, concrete spillway and emergency spillway. A grant application has been submitted for this project.											
	See above.	Existing	Dam Failure; Flood; Earthquake (due to liquefaction)	1, 2	Engineering; working with NYSDEC	High (reduced risk of dam failure; life safety)	High	Town is currently investigating possible funding sources	Short DOF	High	SIP	PP

EM\* = Emergency Management action, not Mitigation

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

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





OEM Office of Emergency Management

Costs:

Where actual project costs have been reasonably estimated:

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

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

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

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

Benefits:

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

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

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

- Low Long-term benefits of the project are difficult to quantify in the short term.
- Medium Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
- High Project will have an immediate impact on the reduction of risk exposure to life and property.



Table 9.8-12. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
EF-1 (former PV-2)	Begin the process to adopt higher regulatory and zoning standards to manage flood hazard risk	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-2 (former PV-8)	Become a NYSDEC "Climate Smart Community"	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-3 (former PV-10)	Develop, adopt and enforce regulatory mechanisms to reduce the risk from vulnerable, sub-standard private bridges	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-4 (former PV-11)	Adopt Zoning Amendment to require subdivisions to provide emergency access when a new public road is created	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-5 (former PV-14)	Develop and maintain mapping of all floodprone areas in the Town, FEMA delineated or otherwise	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-6 (former PP-1)	Mitigate vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-7 (former PP-2)	Elevate East Hook Road in the area of Morgenthau Flats	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-8 (former PP-3)	Carol Drive and Creek Bend Streambank Stabilization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-9 (former PP-4)	Hillside Lake / CR33 Culvert Improvement	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-10 (former	Develop and implement a	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High





**Table 9.8-12. Summary of Prioritization of Actions**

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
NSP-1)	stream monitoring and maintenance program																
EF-11 (former NSP-3)	Hillside Lake S/W Rehabilitation	0	1	0	1	1	1	0	1	1	1	1	0	1	1	10	High
EF-12 (former ES-1)	Develop an East Fishkill Dam Safety Program	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-13 (former ES-2)	Install backup power at critical facilities in the Town	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
EF-14 (former SP-3)	Continue to develop the Eagle Ridge Drainage Extension project along Clove Branch Road	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Medium
EF-15 (former SP-4)	Hillside Lake Dam – Repair and upgrade the earthen dam embankment, concrete spillway and emergency spillway	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.  
 --- = Prioritization remained the same as the 2013 Town of East Fishkill HMP



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

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None at this time.

### **9.8.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Town of East Fishkill 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 Town of East Fishkill has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

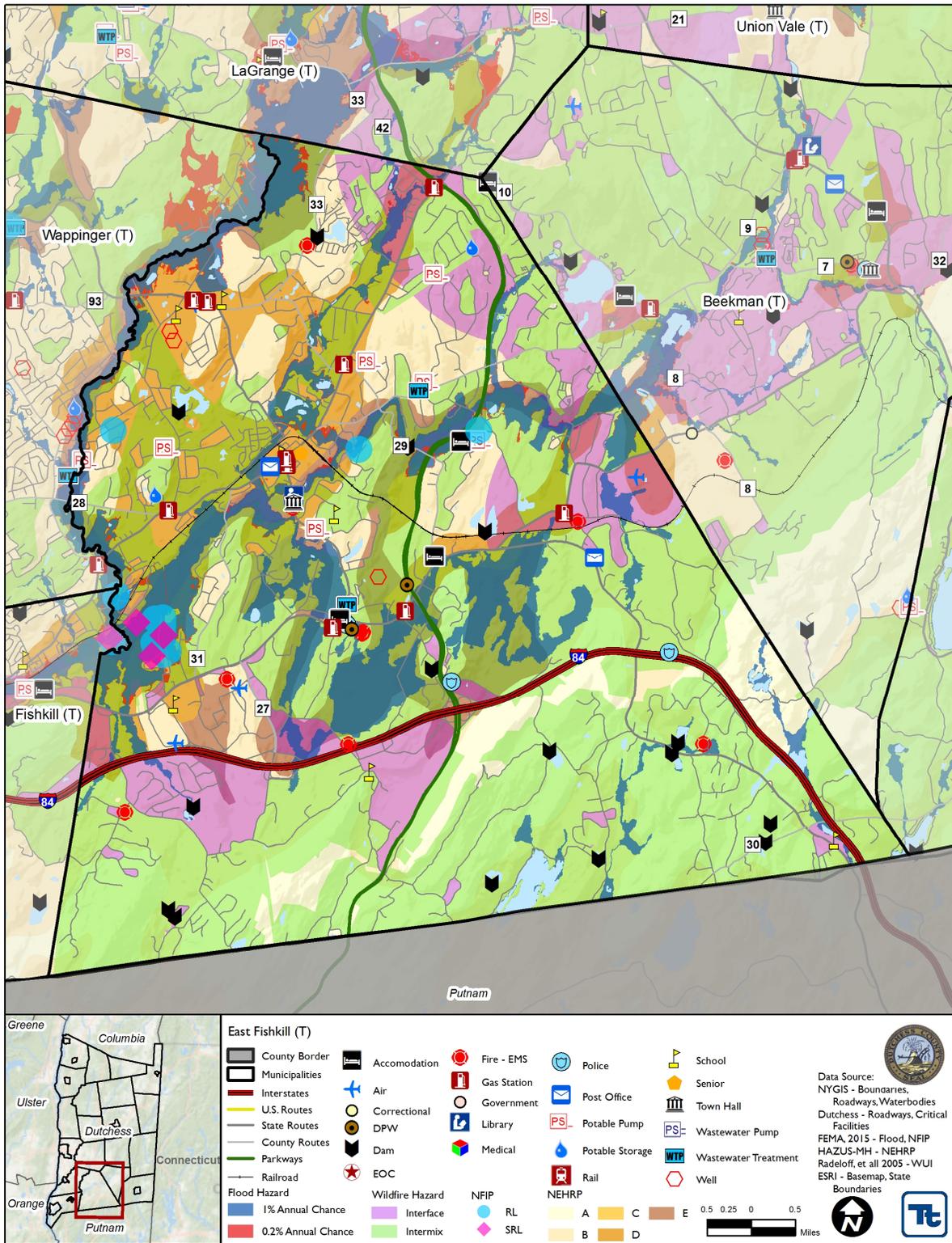
### **9.8.9 Additional Comments**

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None at this time.



Figure 9.8-1. Town of East Fishkill Hazard Area Extent and Location Map





**Action Number:**

EF-11

**Action Name:**

Hillside Lake Stormwater Improvements

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flood, Severe Storm
<b>Specific problem being mitigated:</b>	<p>Hillside Lake, a community within the Town of East Fishkill of in excess of 500 homes, surrounds a DEC-listed impaired waterbody. It is a primary recreation resource for the community. Runoff into the lake contains high concentrations of suspended solids and phosphorus which has led to heavy sedimentation to the point that the lake's depth is only a few feet at best. During severe storm events the lake floods, endangering the lives and property of the adjacent residents.</p> <p>The existing storm water management system for the community was constructed over 40 years ago, prior to the rapid residential growth in this community and in southern Dutchess County as a whole. The current system is inadequate to manage inflows laden with sediment into the lake.</p>
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	No action – lake continues to degrade, flooding risk remains unabated Lake dredging – too costly, environmental constraints
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The Town is undertaking a remedial effort to stem the sedimentation with the design and construction of NYS DEC-approved managed wetlands systems. The purpose of this innovative, sustainable technology is to filter out the storm water's contaminants by passing the inflow through a gravel bed planted with a variety of native species. An aeration system informs the process of the plants' capture of the contaminants through their root system, screening out the pollutants.
<b>Mitigation Action/Project Type</b>	NSP, SIP
<b>Goals Met</b>	2, 4
<b>Applies to existing structures/infrastructure, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Reduced flood vulnerability of adjoining properties and structures.
<b>Estimated Cost</b>	High
<b>Priority*</b>	Medium
Plan for Implementation	
<b>Responsible Organization</b>	Engineering and DPW; working with NYSDEC
<b>Local Planning Mechanism</b>	MS4 Plan; Capital Budget
<b>Potential Funding Sources</b>	Sandy HMGP application submitted; local budget for match.
<b>Timeline for Completion</b>	Short term, depending on funding (HMGP grant)



Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

**\* Refer to results of Prioritization (see next page)**



**Action Number:**

EF-11

**Action Name:**

Hillside Lake Stormwater Improvements

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Reduces flood risk
Cost-Effectiveness	0	Not yet determined – would be part of grant application process
Technical	1	Town has the technical capabilities to implement
Political	1	
Legal	1	
Fiscal	0	Funding not secured
Environmental	1	Will benefit environmental quality of waterbody
Social	1	
Administrative	1	Town has the administrative capabilities to implement
Multi-Hazard	1	
Timeline	0	Dependent on funding
Agency Champion	1	
Other Community Objectives	1	MS4 goals
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



**Action Number:** EF-15  
**Action Name:** Hillside Lake Dam

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Dam Failure; Flood; Earthquake (due to liquefaction)
<b>Specific problem being mitigated:</b>	There is a stabilization concern due to the build up of sediment on the back side of the emergency outlet weir. There is also erosion on the front side of the emergency outlet weir due to major storm events. The concrete emergency outlet weir is deteriorated and spawling. The failure of the dam would devastate county route 33 ( Hillside Lake Road). A dam safety report has been filed with NYSDEC.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	No action would result in this risk remaining unabated. Removal of the dam is not feasible.
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Repair and upgrade the earthen dam embankment, concrete spillway and emergency spillway. The concrete should be repaired/replaced, sediment removed, vegetation removed and erosion stabilized.
<b>Mitigation Action/Project Type</b>	SIP
<b>Goals Met</b>	1, 2
<b>Applies to existing structures/infrastructure, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	High (reduced risk of dam failure; life safety)
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Town of East Fishkill
<b>Local Planning Mechanism</b>	Dam EAP; CEMP
<b>Potential Funding Sources</b>	Town is currently investigating possible funding sources
<b>Timeline for Completion</b>	Short DOF
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (see next page)



**Action Number:**

EF-15

**Action Name:**

Hillside Lake Dam

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Significant life safety concerns.
Property Protection	1	Significant risk to public and private property.
Cost-Effectiveness	1	Cost-effective, particularly due to life safety and risk to infrastructure.
Technical	1	Town has sufficient technical capabilities to support implementation.
Political	1	Supported by Town Board and Supervisor.
Legal	1	Few legal constraints.
Fiscal	0	Funding not fully secured.
Environmental	1	No environmental constraints.
Social	1	Benefits all populations equally.
Administrative	1	Town has sufficient administrative resources to implement the overall project.
Multi-Hazard	1	
Timeline	1	Pending funding, being sought currently
Agency Champion	1	Engineering
Other Community Objectives	1	Dam EAP; CEMP
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	