



9.3 Township of Boonton

This section presents the jurisdictional annex for the Township of Boonton.

9.3.1 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
Paul Fortunato, Chief of Police 155 Powerville Road, Boonton Township 973-402-4023 pfortunato@btpolice.org	Scott Para, Fire Official 155 Powerville Road, Boonton Township 732-615-8201 scottpara@optonline.net

9.3.2 Municipal Profile

The Township of Boonton is located in northeast Morris County and has a total land area of 8.24 square miles. It is bordered to the north by the Borough of Kinnelon, to the east by the Township of Montville, to the south by the Borough of Mountain Lakes and the Town of Boonton, and to the west by the Townships of Denville and Rockaway. The Township is bordered to the southwest by the Rockaway River, a major tributary to the Passaic River. The natural drainage system of the Township consists of Beaver Brook and two other streams which flow into Beaver Brook (Unnamed Creek and Stony Brook). Boonton Township is located within the New Jersey Highlands Region, near the easterly border of the Highlands Region. According to the U.S. Census, the 2010 population for the Township of Boonton was 4,263.

Growth/Development Trends

The Township of Boonton did not identify any recent major residential, commercial, or infrastructure development since 2010 or any known or anticipated major development to occur in the community within the next five years.

9.3.3 Natural Hazard Event History Specific to the Municipality

Morris 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 update, 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 9.3-1. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
December 26-27, 2010	Severe Winter Storm and Snowstorm	DR-1954	Yes	The severe storm required a large DPW and Police Response. Emergency protective measures were taken. Total costs approx. \$52k.
August 26 – September 5, 2011	Hurricane Irene	EM-3332 DR-4021	Yes Yes	Several roads were closed and damage to the park on N. Main Street. Township pumped out flooded basements. Debris removal and repair costs est. \$38k.



Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
October 29, 2011	Severe Storm	DR-4048	Yes	Most roads were closed due to fallen trees. Widespread power outages. Emergency protective measures and debris removal costs were approx. \$35.5k.
October 26 – November 8, 2012	Hurricane Sandy	EM-3354 DR-4086	Yes Yes	Roads closed due to fallen trees. Emergency protective measures and debris removal costs were approx. \$54k.

9.3.4 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 Township of Boonton. 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 Township of Boonton.

Table 9.3-2. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Occasional	24	Medium
Earthquake	500-year MRP: \$1,333,249 2,500-year MRP: \$29,271,016	Occasional	24	Medium
Extreme Temperature	Damage estimate not available	Frequent	27	Medium
Flood	1% Annual Chance: \$0	Frequent	18	Medium
Geological Hazards	Exposed to Class A and Class B: \$18,102,921	Occasional	12	Low
Severe Storm	100-Year MRP: \$1,074,459 500-year MRP: \$4,807,778 Annualized: \$70,485	Frequent	48	High
Winter Storm	1% GBS: \$16,578,545 5% GBS: \$82,892,725	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$12,576,576	Rare	6	Low
Disease Outbreak	Damage estimate not available	Frequent	36	High
Hazardous Materials	Damage estimate not available	Frequent	36	High
Infestation	Damage estimate not available	Frequent	18	Medium

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
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 value of contents.
- d. Loss estimates for the flood and earthquake hazards represent both structure and contents.
- e. The HAZUS-MH earthquake model results are reported by Census Tract.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of Boonton.

Table 9.3-3. 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)
Township of Boonton	28	43	\$1,054,845.89	2	1	13

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 9/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.
- (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 9.3-4. 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 ⁽¹⁾
Deer Pond Dam	Dam	X	X	-	-	-

Source: HAZUS-MH 2.1

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

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.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1

Other Vulnerabilities Identified

According to the 2010 preliminary FEMA Flood Insurance Study (FIS), flooding in the Township is primarily caused by the Rockaway River and Beaver Creek. Flooding occurs as a result of heavy rainfall, usually associated with local thunderstorms and tropical cyclones during the summer and fall (FEMA FIS 2010).



The Township identified the following vulnerabilities within the community:

- Elcock pump station has B/U power
- Working in getting B/U power for pump station on Glenbourne – grant under Sandy
- RVS has B/U power – this serves as the Township’s primary shelter, however is not an ARC designated sheltering facility (no shower or kitchen facilities)
- Fire Stations (2) have B/U power
- Boonton Well fields (owned by Town of Boonton) have B/U power
- Town Hall and Fire Station serve as “comfort stations” – both have B/U power
- St. Clare’s facility on Powerville Road is a sheltering facility

The Township identified the following properties that were flooded during various events:

- Flooded during Irene: Krumpka, Pierson, and two others – one was on Powerville Road
- Powerville Road had 3’ first floor flooding; flood insured – others were generally basement flooding
- Krumpka – wet-flood-proofed his basement
- Meyers Farm Road – had berms to prevent flooding. Elevated after Floyd.
- Property on Overlook that flooded is in foreclosure.

9.3.5 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 Township of Boonton.

Table 9.3-5. 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.)
Planning Capability				
Master Plan	Y	Local	Zoning	6/2007
Capital Improvements Plan	Y	Local	Finance	3/2014
Floodplain Management / Basin Plan	Y	Local	OEM working with all departments	Flood Acquisition Plan (with Morris County)
Stormwater Management Plan	Y	Local	Admin.	4/2005
Open Space Plan	Y	Local	Admin.	4/2004
Stream Corridor Management Plan	N	Local		
Watershed Management or Protection Plan	N	Local		
Economic Development Plan	N	Local		



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.)
Comprehensive Emergency Management Plan	Y	Local	OEM	
Emergency Response Plan	N	Local		
Post-Disaster Recovery Plan	N	Local		
Transportation Plan	N	Local		
Strategic Recovery Planning Report	N	Local		
Other Plans:				
Regulatory Capability				
Building Code	Yes	State & Local		State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Zoning	3/2014
Subdivision Ordinance	Yes	Local	Zoning	3/2014
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local		
NFIP: Cumulative Substantial Damages	No	Local		
NFIP: Freeboard	Yes	State, Local		
Growth Management Ordinances				
Site Plan Review Requirements	Yes	Local	Zoning	
Stormwater Management Ordinance	Yes	Local	Zoning	6/2005
Municipal Separate Storm Sewer System (MS4)	Yes	Local	Zoning	4/2005
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes	Local	Zoning	6/2005

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Township of Boonton.

Table 9.3-6. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Zoning
Mitigation Planning Committee	No	
Environmental Board/Commission	No	



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Open Space Board/Committee	Yes	Admin
Economic Development Commission/Committee	No	
Maintenance Programs to Reduce Risk	No	DPW
Mutual Aid Agreements	Yes	Various Admin
Technical/Staffing Capability		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Out-sourced
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Out-sourced
Planners or engineers with an understanding of natural hazards	Yes	Out-sourced
NFIP Floodplain Administrator	Yes	Out-sourced
Surveyor(s)	Yes	Out-sourced
Personnel skilled or trained in GIS and/or Hazus-MH applications	Yes	Out-sourced
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	Police
Grant Writer(s)	Yes	Various
Staff with expertise or training in benefit/cost analysis	Yes	Finance
Professionals trained in conducting damage assessments	Y	DPW

Fiscal Capability

The table below summarizes financial resources available to the Township of Boonton.

Table 9.3-7. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community development Block Grants (CDBG, CDBG-DR)	Yes, through Morris County
Capital Improvements Project Funding	Yes, Admin.
Authority to Levy Taxes for specific purposes	Yes, Governing Body
User fees for water, sewer, gas or electric service	Yes, Finance
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Yes, Governing Body
Incur debt through special tax bonds	Yes, Governing Body
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	Yes
Open Space Acquisition Funding Programs	Yes, Morris County Flood Mitigation Program (acquisitions)
Other	



Community Classifications

The table below summarizes classifications for community program available to the Township of Boonton.

Table 9.3-8. 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)	TBD	TBD	TBD
Public Protection (ISO Fire Protection Classes 1 to 10)	TBD	TBD	TBD
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	Yes	N/A	N/A
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	Yes (website, email news)		
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 Community Rating System (CRS) class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1,000 feet of a creditable fire hydrant and is within five road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

Self-Assessment of Capability

The table below provides an approximate measure of Boonton’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.





Table 9.3-9. 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	
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

Ed Bucceri, Construction Official (now retired)

Flood Vulnerability Summary

The Township is participating in the County led flood mitigation program. To date, the Township has only identified one property as Substantially Damaged (Irene/Lee, Floyd).

Resources

The Township FPA is the sole person assuming the responsibilities of floodplain management, with no specific other support. The Township provides: permit review, floodplain mapping, archiving of NFIP Elevation Certificates, general public education and outreach. The Township would be interested in and support attending continuing education programs to build local floodplain management and mitigation capabilities, particularly if offered locally.

Compliance History

The Township is, and has always been, in compliance with the NFIP.

Regulatory

The Township’s floodplain management and related regulations and ordinances meet Federal and State requirements.

Community Rating System

The Township of Boonton does not participate in the CRS program.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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

The Township's Planning Board and ZBA review all development applications for conformance with Federal, State and local regulations, as well as conformance with the Township's Comprehensive Plan (see below). These Township continues to maintain and update appropriate resources to support this process, including:

- Comprehensive Plan: Re-Examined in 2007 (see below)
- Environmental Resource Inventory: Currently being updated; includes identification of all natural hazard areas as well as parcels available for development and their association with natural hazard risks.

The Township's Comprehensive Plan, adopted in 2001 and re-examined in 2007, actively addresses natural hazard risk areas. The 2007 Re-examination report and implementing resolution specifically includes:

- Avoiding adverse impacts on the local environment and adopting planning and zoning measures that will protect sensitive wetlands, steep slopes and potable ground water supply in flood prone areas.
- Maintaining constant vigilance over regional planning activities, especially those at the State and County levels, in terms of their potential impact on local planning and development.
- Coordinating local planning efforts with those of neighboring municipalities in order to achieve a maximum degree of compatibility especially along common municipal boundaries.

The Township's Open Space Plan has continued to guide the Township's successful protection of environmentally sensitive land, including those with wetlands, steep slopes and floodplains.

The Township includes areas in both the Highlands Preservation and Planning areas; has accepted the Highland's guidelines within the Preservation Area, and acknowledge responsibility within the Planning Area.

The Township maintains their CEMP, which includes a COOP/COG program to protect against disasters.

The Township has developed and maintains an active MS4 stormwater management plan and program.

The Township of Boonton participates in the County's Flood Mitigation Program (FMP) and has an approved Flood Acquisition Plan (FLAP). The Morris County FMP is the first dedicated, county-level flood acquisition program in the State of New Jersey. The FMP allows Morris County to assist municipalities in moving people out of harm's way, lowering municipal costs due to intense flooding episodes, and create natural flood capture and storage areas which protect the remaining homes and businesses. The FMP is funded by the Morris County Open Space tax and provides grant monies for municipalities to purchase flood-prone residential properties. In addition to MATCH funding available for projects with state or federal monies, Morris County has CORE funding in which the County takes the lead grant role, providing up to 75% of the cost of acquisition. To access this CORE funding, a municipality must have a Flood Acquisition Plan (FLAP). The FLAP is a dynamic, essential tool for understanding the unique flood hazards to residential homes within each community. Working closely with the municipality, Morris County creates this detailed, comprehensive analysis of the historic and current flood risks free of charge. A wide array of data is utilized from sources such as: FEMA, National Flood Insurance Program, USACE Flood Studies, USGS stream gage data, topography, and soil analysis. All land acquired with MATCH and CORE funding within the FMP is permanently deed-restricted, preserved open space, available for public use as an active or passive recreation area. The acquired land is municipal-owned and managed in perpetuity.

Regulatory and Enforcement

The Township maintains all of their codes and regulations to conform with Federal and State requirements, updating as appropriate.



Operational and Administration

Township has an active tree management program, which includes contract tree management and the training of a Township staff person in tree assessment through Rutgers University. The Township, working along with Denville Township and Rockaway Borough, is participating in a joint NJDEP grant-funded program for de-snagging and shoal dredging.

Fiscal

In 1990 Boonton Township established an Open Space Trust Fund of two cents (\$.02) per hundred dollars of assessed value. In 2000 Township residents voted to increase the open space tax to four cents (\$.04) per hundred dollars of assessed valuation. Today the Trust Fund generates nearly \$202,000 annually. The Township has preserved 97 acres of land using their local open space dollars and grants from the Morris County Open Space and Farmland Preservation Trust Fund. The goals of the Township’s open space program include: protecting the environment including: springs, streams, lakes, wetlands and steep slopes.

9.3.6 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under ‘Capability Assessment’ presented previously in this annex.

Table 9.3-10. Past Mitigation Initiative Status

Table with 3 columns: Description, Status, Review Comments. Rows include: Boonton Twp 1: Backup power (generator) for Rockaway Valley School (shelter) - Complete; Boonton Twp 2: Building code update - Continuous / Ongoing; Boonton Twp 3: Analysis/Risk assessment of Powerville Dam - Ongoing; Boonton Twp 4: Backup power (generator) for Municipal Building (shelter) - Complete; Boonton Twp 5: Hardening of Boonton Water Department Building - Discontinue; Boonton Twp 6: Hardening emergency radio tower - Discontinue; Boonton Twp 7: Acquisition/elevation of five repetitive loss properties on Overlook Road - In progress; Boonton Twp 8: Roadside storm-water re-direction at Rockaway Valley Road (protects) - Complete.





Description	Status	Review Comments
four homes).		completed.
Boonton Twp 9: Develop all-hazards public education and outreach program for hazard mitigation and preparedness	Continuous / Ongoing	To be maintained in updated mitigation strategy.

Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The municipality 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:

- The Township performed road and culvert repairs on Rockaway Valley Road (2012) to protect wall.
- Griffith Pond Spillway Repair – Repairs were made to the dam/spillway.
- Rockaway Valley Road, near Hillcrest – 3 years ago, old headwall protecting a culvert, realigned roadway to protect integrity of headwall

Proposed Hazard Mitigation Initiatives for the Plan Update

The Township of Boonton participated in a mitigation action workshop in January 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 9.3-11 summarizes the comprehensive-range of specific mitigation initiatives the Township of Boonton 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 update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. 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, fourteen 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 9.3-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.3-11. 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
Boonton Twp 1 (former Boonton Twp 3)	Analysis/risk assessment of Powerville Dam in an effort to reclassify dam such that this hazard is being appropriately managed.	Existing	Flood, Severe Storm	3, 4	Township Engineer	Medium	Medium	Town Budget	In progress	High	LPR	PI, SP
Boonton Twp 2	Glenbourne Road Pump Station Backup Power: Implement project once HMGP funding is provided.	Existing	Severe Storm, Severe Winter Storm	3, 4	OEM/Town Administrator with support from Township Engineer	High – Reduced vulnerability of critical facility to power outages	Medium	Grant funding application under Sandy HMGP approved.	In progress	High	SIP	PP, ES
Boonton Twp 3 (former Boonton Twp 7)	The Township will continue to promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be: funding, benefits versus cost, and willing participation of property owners. The Township has completed acquisitions of four repetitive loss properties on Overlook Road, through FEMA funding. Currently targeted is the one property currently in foreclosure.											
	See above.	Existing	Flooding, Severe Storm	1, 3, 4	OEM and Town Administrator ; support from NJOEM and FEMA	High - Reduced or eliminated risk to property damage from flooding	High	FEMA or other mitigation grant funding, NFIP flood insurance and ICC; property owner for local match.	Ongoing	Medium	SIP	PP, PI
Boonton Twp 4 (former Boonton Twp 9)	Maintain and continue to enhance the all-hazards public education and outreach program for hazard mitigation and preparedness. This program currently includes weekly email blasts, NEXUS program for email alerts, United alert, social media (Facebook page), reverse-911, pamphlets in Town hall.	N/A	All Hazards	1, 2	OEM Coordinator, in coordination with MCOEM	Improved public preparedness and mitigation capabilities	Low	Township Budget	Ongoing	Medium	EAP	PI



Table 9.3-11. 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
Boonton Twp 5	Continue active participation in the NJDEP grant-funded program for de-snagging and shoal dredging, working cooperatively with Denville Township and Rockaway Borough.	N/A	Flood, Severe Storm	2, 3	Township, working in cooperation with Denville Township (overall project lead) and Rockaway Borough	High – Reduced vulnerability to riverine flooding and associated damage to structures/infr astructure	Medium - High	NJDEP Grant	Ongoing	High	SIP, NSP	N R
Boonton Twp 6	James Road retaining wall upgrade: Replace a wall that is deteriorated along James Road next to Ultra-Punch and Die.	Existing	Flood, Severe Storm	3, 4	Township – Engineering and DPW	Reduced vulnerability of transportation infrastructure	\$100k	Township Budget	Short	High	SIP	PP
Boonton Twp 7	Deer Lake Dam Improvements: Complete ongoing improvement work to dam.	Existing	Flood, Severe Storm	1, 3, 4	Deer Lake Association	Reduced vulnerability of public and private property and infrastructure; potential life-safety	Medium-High	Deer Lake Association	Ongoing	High	SIP	SP

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
- NJDEP New Jersey Department of Environmental Protection
- NJOEM New Jersey Office of Emergency Management
- 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 2015)
- SRL Severe Repetitive Loss Grant Program (discontinued 2015)

Timeline:

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





Costs:

Where actual project costs have been reasonably estimated:

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

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

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

Benefits:

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

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

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

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

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 9.3-12. 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
Boonton Twp 1 (former Boonton Twp 3)	Analysis/risk assessment of Powerville Dam in an effort to reclassify dam such that this hazard is being appropriately managed.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
Boonton Twp 2	Glenbourne Road Pump Station Backup Power: Implement project once HMGP funding is provided.	1	0	1	1	0	1	1	0	1	1	1	1	0	0	9	High
Boonton Twp 3 (former Boonton Twp 7)	Continue to promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Medium
Boonton Twp 4 (former Boonton Twp 9)	Maintain and continue to enhance the all-hazards public education and outreach program for hazard mitigation and preparedness.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Medium
Boonton Twp 5	Continue active participation in the NJDEP grant-funded program for de-snagging and shoal dredging, working cooperatively with Denville Township and Rockaway Borough.	1	1	1	1	0	0	1	0	1	1	1	0	1	0	9	High
Boonton Twp 6	James Road retaining	1	1	1	1	0	0	1	0	0	1	1	1	0	0	8	High





Table 9.3-12. 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
	wall upgrade: Replace a wall that is deteriorated along James Road next to Ultra-Punch and Die.																
Boonton Twp 7	Deer Lake Dam Improvements: Complete ongoing improvement work to dam.	1	1	1	0	0	0	1	0	0	0	1	0	1	0	6	High

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



9.3.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.3.8 Hazard Area Extent and Location

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

9.3.9 Additional Comments

None at this time.



Figure 9.3-1. Township of Boonton Hazard Area Extent and Location Map 1

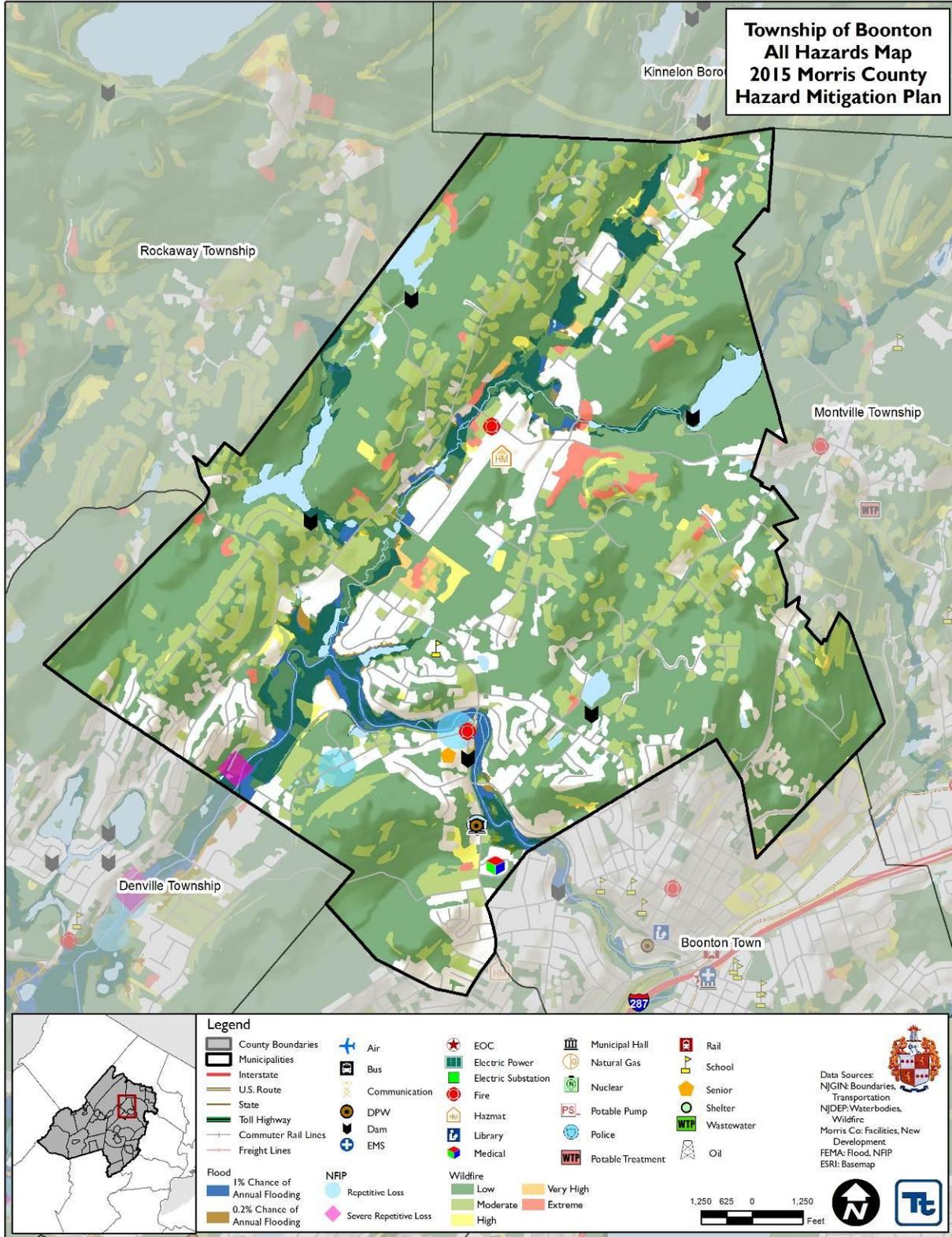
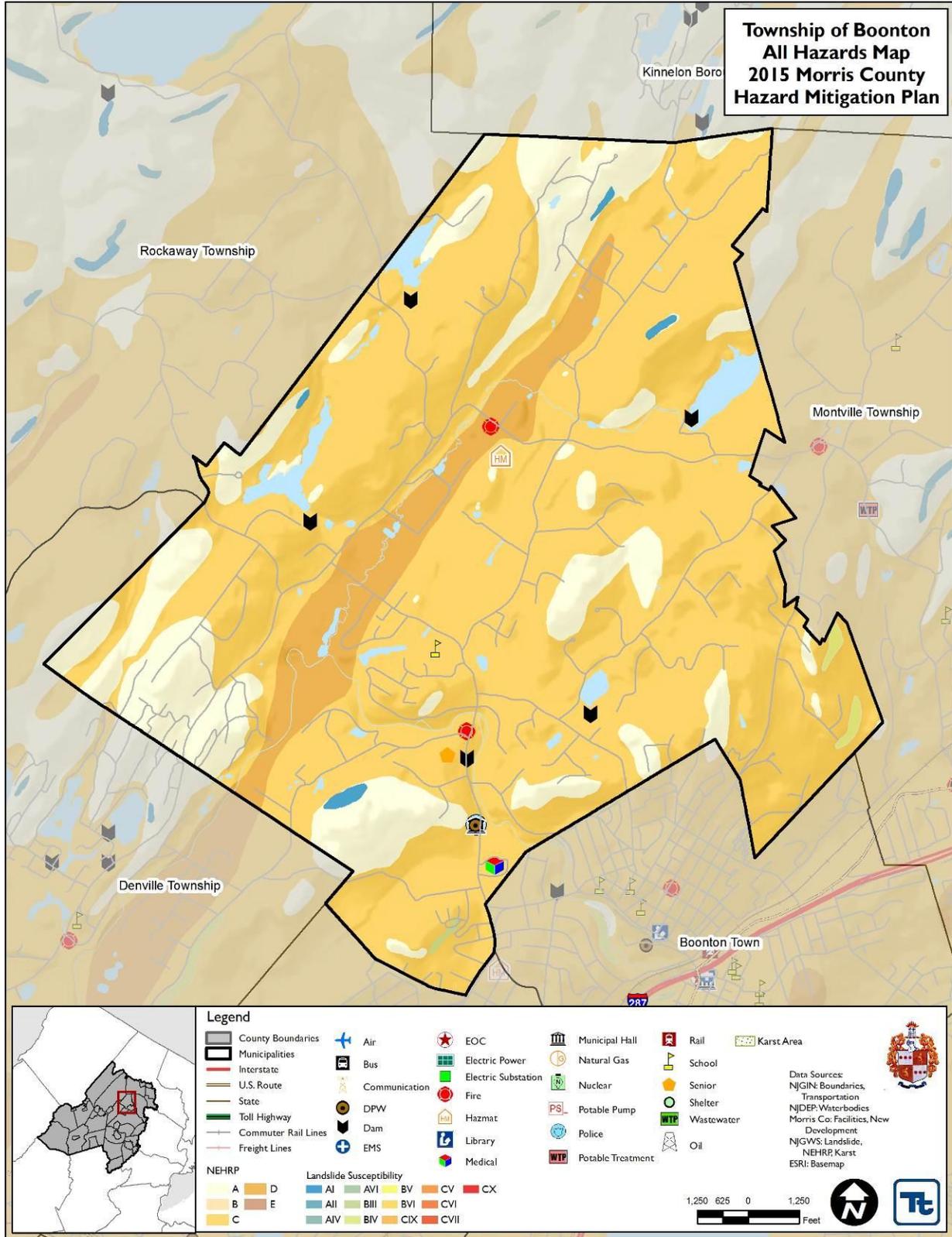




Figure 9.3-2. Township of Boonton Hazard Area Extent and Location Map 2





Name of Jurisdiction: Township of Boonton
Action Number: Boonton Twp 6
Action Name: James Road retaining wall upgrade

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm
Specific problem being mitigated:	A retaining wall along James Road is deteriorating
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Replace retaining wall along James Road
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	Replace a wall that is deteriorated along James Road next to Ultra-Punch and Die.
Mitigation Action/Project Type	SIP
Goals Met	3, 4
Applies to existing structures/infrastructure, future, or not applicable	Existing
Benefits (losses avoided)	Reduced vulnerability of transportation infrastructure
Estimated Cost	Medium
Priority*	High
Plan for Implementation	
Responsible Organization	Engineering and DPW
Local Planning Mechanism	TBD
Potential Funding Sources	Township Budget
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (see next page)



Action Number: Boonton Twp 6
Action Name: James Road retaining wall upgrade

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect people using James Road
Property Protection	1	Project will protect the surrounding areas of the retaining wall on James Road
Cost-Effectiveness	1	Township will use budget to make repairs; will benefit costs in the future
Technical	1	
Political	0	
Legal	0	
Fiscal	1	Township will use budget to make repairs
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	
Agency Champion	0	
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	High	



Name of Jurisdiction: Township of Boonton
Action Number: Boonton Twp 7
Action Name: Deer Lake Dam

Assessing the Risk	
Hazard(s) addressed:	Flood, Severe Storm
Specific problem being mitigated:	Ongoing improvement work to dam needs to be completed
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Complete improvements to Deer Lake Dam
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	Complete ongoing improvement work to dam.
Mitigation Action/Project Type	SIP
Goals Met	1, 3, 4
Applies to existing structures/infrastructure, future, or not applicable	Existing
Benefits (losses avoided)	Reduced vulnerability of public and private property and infrastructure; potential life-safety
Estimated Cost	Medium to High
Priority*	High
Plan for Implementation	
Responsible Organization	Deer Lake Association
Local Planning Mechanism	TBD
Potential Funding Sources	Deer Lake Association
Timeline for Completion	Ongoing
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

* Refer to results of Prioritization (see next page)



Action Number: Boonton Twp 7
Action Name: Deer Lake Dam

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project reduces vulnerability to life safety
Property Protection	1	Project reduces vulnerability to public and private property
Cost-Effectiveness	1	
Technical	0	
Political	0	The Deer Lake Association has jurisdiction over this dam
Legal	0	The Deer Lake Association has jurisdiction over this dam
Fiscal	1	The Association will be responsible for paying for this project
Environmental	0	
Social	0	
Administrative	0	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	
Other Community Objectives	0	
Total	6	
Priority (High/Med/Low)	High	