



9.3 TOWNSHIP OF BOONTON

This section presents the jurisdictional annex for the Township of Boonton. The annex includes a general overview of the Township of Boonton; an assessment of the Township of Boonton’s risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.3.1 Hazard Mitigation Planning Team

The following individuals are the Township of Boonton’s identified HMP update primary and alternate points of contact and NFIP Floodplain Administrator.

Table 9.3-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name / Title: Scott Para, OEM Director Address: 155 Powerville Road• Boonton Township, New Jersey 07005-8729 Phone Number: 973-402-4011 Email: spara@boontontownship.com	Name / Title: Bill Klingener, Coordinator Address: 155 Powerville Road• Boonton Township, New Jersey 07005-8729 Phone Number: 973-418-3596 Email: drdrain@optonline.net
NFIP Floodplain Administrator	
Name / Title: Hank Huelsebusch, Township Engineer Address: 155 Powerville Road• Boonton Township, New Jersey 07005-8729 Phone Number: 973-402-4011 Email: hankhuelsebusch2@aol.com	

9.3.2 Jurisdiction 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. The estimated 2017 population was 4,353, a 2.1 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 3.7 percent of the population is 5 years of age or younger and 15.4 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.3.3 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to understanding a jurisdiction’s overall risk to its hazards of concern. Table 9.3-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figures 9.3-1 and 9.3-2 at the end of this annex illustrate the geographically-delineated hazard areas and the location of potential new development.





Table 9.3-2. Recent and Expected Future Development

Type of Development	2014	2015	2016	2017	2018
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single Family	13	4	6	14	10
Multi-Family	0	0	0	0	0
Other (commercial, mixed-use, etc.)	0	0	0	0	0
Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Recent Major Development and Infrastructure from 2015 to Present					
None identified					
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
None anticipated					

9.3.4 Capability Assessment

The Township of Boonton performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Information on National Flood Insurance Program (NFIP) compliance.
- Classification under various community mitigation programs.
- The community’s adaptive capacity for the impacts of climate change.

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, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized below. The Township of Boonton identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

The table below summarizes the legal and regulatory tools that are available to the Township of Boonton and where hazard mitigation has been integrated.



Table 9.3-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
<i>Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Adopted 9/3/2019. Chapter 62 Construction Codes, Uniform. Administered by the Construction Official.</i>					
Zoning Code	Yes	Local	Yes	No	-
<i>Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. Chapter 102 Land Use, Part 9 Zoning. Administered by Planning Board, Zoning Board of Adjustment, and the Administration.</i>					
Subdivisions	Yes	Local	Yes	No	-
<i>Comment: Chapter 102 Land Use. Administered by Planning Board, Zoning Board of Adjustment, and the Administration.</i>					
Stormwater Management	Yes	Local	Yes	No	-
<i>Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 125 of the municipal code. Adopted June 2005.</i>					
Post-Disaster Recovery	No	-	-	-	-
<i>Comment:</i>					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
<i>Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.</i>					
Growth Management	No	-	Yes	No	-
<i>Comment: State mandated at local level; discussed in master plan.</i>					
Shoreline Development	No	-	Yes	No	-
<i>Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.</i>					
Site Plan Review	Yes	Local	Yes/No		-
<i>Comment: Chapter 102 Land Use. Administered by Planning Board, Zoning Board of Adjustment, and the Administration.</i>					
Environmental Protection	No	-	Yes		
<i>Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.</i>					
Flood Damage Prevention	Yes	Local	Yes	No	2020-Township of Boonton-008
<i>Comment: Chapter 102 Land Use, Pt 7 Flood Damage Prevention. Lacks freeboard.</i>					
Wellhead Protection	No	-	-	-	-
<i>Comment:</i>					
Emergency Management	Yes	-	-	-	-
<i>Comment: Chapter 15 Fire Department, Chapter 28 Police Department</i>					
Climate Change	No	-	-	-	-
<i>Comment:</i>					
Disaster Recovery Ordinance	No	-	-	-	-
<i>Comment:</i>					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Reconstruction Ordinance	No	-	-	-	-
<i>Comment:</i>					
Other	No	-	-	-	-
<i>Comment:</i>					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-
<i>Comment: Master Plan from 2001. Reexamination from June 2007 and March 2018. Administered by Zoning and the Planning Board. The 2001 plan includes information on the natural environment and elements for housing, circulation/transportation, schools, parks/open space, community facilities, land use, and recycling. The plan includes the goal of avoiding adverse impacts on the local environment and adopting planning and zoning measures that will protect sensitive wetlands, steep slopes, potable ground water supply, and flood prone areas.</i>					
Capital Improvement Plan	Yes	Local	Allowed	No	-
<i>Comment: Per NJSA 40:55D-29 the governing body is authorized to direct the planning board to prepare a CIP with at least a six year planning horizon. Capital Improvement plan from March 2014.</i>					
Disaster Debris Management Plan	No	-	No	Yes	2020-Township of Boonton-002
<i>Comment:</i>					
Floodplain or Watershed Plan	Yes	Local	No	No	-
<i>Comment: Flood Acquisition Plan (with Morris County). Administered by OEM working with all departments.</i>					
Stormwater Management Plan	Yes	Local and State	Yes	Yes	2020-Township of Boonton-003
<i>Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). Boonton Township plan from April 2005.</i>					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	-
<i>Comment: Adopted April 2005.</i>					
Urban Water Management Plan	No	-	No	-	-
<i>Comment:</i>					
Habitat Conservation Plan	No	-	No	-	-
<i>Comment:</i>					
Economic Development Plan	No	-	No	-	-
<i>Comment:</i>					
Shoreline Management Plan	No	-	No	-	-
<i>Comment:</i>					
Community Wildfire Protection Plan	No	-	No	-	-
<i>Comment:</i>					
Community Forest Management Plan	No	-	No	-	-
<i>Comment:</i>					
Transportation Plan	No	-	No	-	-
<i>Comment:</i>					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Agriculture Plan	No	-	No	-	-
<i>Comment:</i>					
Climate Action Plan	No	-	No	-	-
<i>Comment:</i>					
Tourism Plan	No	-	No	-	-
<i>Comment:</i>					
Business Development Plan	No	-	No	-	-
<i>Comment:</i>					
Other: Open Space Plan	Yes	Local	No	Yes	-
<i>Comment: 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.</i>					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
<i>Comment: Per the NJ Civilian Defense and Disaster Control Act (App.A:9_43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years. The Township maintains their CEMP, which includes a COOP/COG program to protect against disasters. Administered by OEM.</i>					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
<i>Comment:</i>					
Post-Disaster Recovery Plan	No	-	No	-	-
<i>Comment:</i>					
Continuity of Operations Plan	Yes	Local	Yes	Yes	-
<i>Comment: Part of the CEMP.</i>					
Public Health Plan	Yes	County	Yes	No	No
<i>Comment:</i>					
Other	No		No	-	-

Table 9.3-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Planning Board
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No, minimum



ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

Table 9.3-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Zoning
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	-
Open Space Board / Committee	Yes	Admin
Economic Development Commission / Committee	No	-
Warning Systems / Services (mass notification, outdoor warning signals)	Yes	OEM/Police
Maintenance program to reduce risk	Yes	DPW (contracted)
Mutual aid agreements	Yes	Various Administration laid out in Chapter 19 of the municipal code. All building inspection services and permits are provided by the Township of Montville through a shared services agreement.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Outsourced
Engineers or professionals trained in building or infrastructure construction practices	Yes	Outsourced
Planners or engineers with an understanding of natural hazards	Yes	Outsourced
Staff with training in benefit/cost analysis	Yes	Finance
Staff with training in green infrastructure	No	None
Staff with education/knowledge/training in low impact development	No	
Surveyor	Yes	Outsourced
Stormwater engineer		
Personnel skilled or trained in GIS applications	Yes	Outsourced
Local or state water quality professional	Yes	Outsourced
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM
Watershed planner	No	-



Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental specialist	No	-
Grant writers	Yes	Various
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

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

Table 9.3-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
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
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Township of Boonton.

Table 9.3-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, General mitigation handouts; power outage information; storm preparedness handouts
Do you use social media for hazard mitigation education and outreach? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, Township of Boonton Facebook; Township of Boonton OEM Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <ul style="list-style-type: none"> If yes, briefly describe. 	No
Do you have any other programs already in place that could be used to communicate hazard-related information? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, County Rave – Mass Notification Tool
Do you have any established warning systems for hazard events? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, County Rave – Mass Notification Tool



COMMUNITY CLASSIFICATIONS

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

Table 9.3-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (Fire ISO Protection Class)	Yes	5/9*	
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	10/9/2018

*Class 5 applies to properties within 1000 feet of a hydrant and Class 9 applies to any properties beyond 1000 feet of a hydrant but within 5 road miles of a responding engine. Any properties beyond that are Class 10.

ADAPTIVE CAPACITY

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

- Does the municipality have access to resources to determine the possible impacts of climate change upon the municipality? No
- Is the administrative supportive of integrating climate change in policies or actions? No
- Is climate change already being integrated into current policies/plans or actions (projects/monitoring) within the municipality? No

Table 9.3-9. Adaptive Capacity of Climate Change

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Dam Failure	Medium
Drought	High
Earthquake	Medium
Extreme Temperature	Medium
Flood (riverine / flash flood, SLR)	Medium
Geological Hazards (landslides and subsidence/sinkholes)	Low
Severe Weather (high wind, tornado, TSTM, and hail)	High
Severe Winter Weather (heavy snow, blizzards, and ice storms)	High
Wildfire	High
Hazardous Materials	Medium
Disease Outbreak (WNV, Lyme, RMSF, Human Ehrlichiosis, flu, Enterovirus D68, Hep C, foodborne, ebola, measles, MRSA)	High



NATIONAL FLOOD INSURANCE PROGRAM

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 9.3-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Hank Huelsebusch, Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	September 2010 (closed date)
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	TBD
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state what they are. 	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what they are. 	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If no, state why. 	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	N/A
<input type="checkbox"/> If so, what type of assistance/training is needed?	N/A
Does your jurisdiction participate in the Community Rating System (CRS)? <ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	No
How many flood insurance policies are in force in your jurisdiction?*	Flood insurance policies: 10 Insurance in force: \$9,020,000 Premium in force: \$23,868
How many total loss claims have been filed in your jurisdiction?*	Total loss claims: 58 Claims still open or closed without payment: 11 Total payments for losses: \$1,060,251
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of 09/30/2018 for policies, 03/31/2019 for RL/SRL

ADDITIONAL AREAS OF EXISTING INTEGRATION

Environmental Committee: The Boonton Township Environmental Committee was created to advise the Township Committee on matters related to the environment. The Environmental Committee also investigates environmental concerns and educates residents about our local environment. Public meetings of the Environmental Committee are held on the second Thursday of every month.

Board of Health: The Board of Health is charged with all matters relating to Health, including but not limited to: septic reviews, vital statistics, health clinics and other such matters. The Board of Health generally meets the second Monday of every month at 7:30PM.





Open Space Committee: The Boonton Township Open Space Committee was created to advise the Township Committee on properties which should be considered for preservation under the guidelines of the Township Open Space Trust Fund. The Open Space Committee meets on an as-needed basis.

Planning Board: The Planning Board is charged with reviewing site plan and subdivision applications as well as hearing zoning variance applications and appeals from rulings and determinations arising from the enforcement of Township zoning ordinances. The Board is responsible for updating the Master Plan every six years. It meets in public session on the first Monday of each month.

Office of Emergency Management: The Boonton Township Office of Emergency Management is a department within the Township that is charged with protecting life and property through effectively managing any emergency or disaster. Knowing beforehand what to do, where to go and how to get there is important. The mission of the Office of Emergency Management is to maintain a high level of preparedness, to protect the community; to mitigate loss of life and vital assets prior to, during, and immediate aftermath of a disaster; and to facilitate the speedy recovery of the Township in the mid and long-term intervals following a disaster.

Morris County Flood Mitigation 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.

Vegetation Management: 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.

Stream Maintenance: 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.

Sustainable Jersey: Boonton Township is a bronze certified community in the Sustainable Jersey program. Actions in the program that are tied to hazard mitigation include:

- **Raingardens:** The Boonton Township Green presented a Rain Garden Workshop titled "How to Install a Rain Garden at Your Home" on Saturday, May 14th, 2011. The rain garden workshop consisted of a Power Point Presentation followed by a tour of the Leonard Park Rain Garden located on Valley Road, Boonton Township. The tour of the Leonard Park Rain Garden was to show how the rain garden was constructed, and how is currently being maintained. The Leonard Park Rain Garden is a landscaped shallow depression



designed to capture, treat, and infiltrate stormwater runoff at the source before it becomes nonpoint source pollution. The Leonard Park Rain Garden has served as an educational tool, but more importantly has worked beautifully on treating stormwater runoff from the parking lot of the Leonard Park allowing it to go into groundwater cleaning out pollutants which would otherwise end up in the nearby waterways.

- **Tree Protection Ordinance:** In 2005 the Township adopted Ordinance 685 which established the Tree Protection and Removal guidelines. Any property owner wishing to remove trees must consult with the Township Zoning Officer before doing so. In the event that they want to exceed the number of permitted trees the property owner is required to appear before the Governing Body or Planning/Land Use Board for approval.
- **Minimize Water Consumption:** The Township governing body formally adopted a Green Grounds and Maintenance Policy in June 2012. In an effort to reduce water consumption as well as manpower time, fuel and equipment wear/tear changes were made beginning in 2012 with the maintenance of the Township athletic fields as well as open space fields. It is estimated that the installation and use of the cistern has saved at least 500 gallons of water.
- **Online Municipal Public Service Systems:** The Township updated its website with a much more interactive format. Public notices are now posted in a timely manner. There is an "Events" notice on the home page. Residents can sign up for weekly email blasts which announce upcoming meetings, events and other relative information. There is a link to a third party site - General Code - Ecode which hosts the Township's Code Book, Land Use Ordinance, budget and other documents, Ordinances, Resolutions, Minutes and Agendas. The Township also uses the services of Spatial Data - SDL which allows residents to check the status of construction permits, schedule inspections, etc. all on-line. Lastly the bulk of the forms used by the Township - OPRA, registration for recreation programs, applications for Vital Statistic Certified Copies, etc. are now all available on-line.
- **Municipal Communications Strategy:** In early 2017 the Township surveyed residents in order to determine what the most effective tools of communication with the public are. As a result, in late 2017 the Township installed an electronic message board on the front lawn of the municipal building, upgraded the Township website and increased it's social media presence through its Facebook page. The Township now operates a website with current messages and calendars, it has a Facebook page with links to other local groups' Facebook pages. Additionally, the Township does weekly email blasts and on occasion pushes out text notifications and telephone calls through the Everbridge system. Traditional paper mail is still used for residents who prefer that line of communication.

Morris County has a history of hazard events, as detailed in Section 4 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 4.4 (Hazard Profiles) and includes a chronology of events that affected Morris County and its jurisdictions. The Township of Boonton's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Morris County. Table 9.3-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events. Information provided in the table below is based on reference material or local sources.



Table 9.3-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Morris County Designated?	Summary of Event	Summary of Local Damages and Losses
January 21-24, 2016	Severe Winter Storm and Snowstorm (DR-4264)	Yes	Wind gusts up to 60 MPH produced blizzard conditions as visibilities dropped to one-quarter mile or less in spots. Snow began during the evening hours on the 22nd, then continued, heavy at times through the 23rd before ending early on the 24th. Snowfall totals included 30.0 inches in Long Valley, 29.0 inches in Madison, 26.0 inches in Budd Lake, 25.3 inches in Green Pond, 22.5 inches in Butler, 21.0 inches in Chatham, and 18.0 inches in Marcella	Total cost: \$47,047.17 - \$44,000 for snow and debris removal
March 6-7, 2018	Severe Winter Storm and Snowstorm (DR-4368)	Yes	12 to 24 inches was observed across large parts of Somerset, Hunterdon, Morris, and Sussex Counties. The snow contained large amounts of liquid, making it heavy and wet. This resulted in downed trees, limbs, and wires, leading to numerous power outages.	Total cost: \$61,629.71 - \$18,748.29.42 for snow and debris removal
May 23, 2019	High Wind; Severe Storm	N/A	Straight line wind event.	Straight line winds took out 60 trees - three tree on public property had to be removed by Township; Damage to homes; power outages.

9.3.5 Jurisdiction-Specific Vulnerabilities and Hazard ranking

The hazard profiles in Section 4 (Risk Assessment) provide detailed information regarding each plan participant’s vulnerability to the identified hazards.



Table 9.3-12 summarizes the Township of Boonton’s risk assessment results and data used to determine the hazard ranking.

A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. A certainty factor of high, medium or low was selected and assigned to each hazard to provide a level of transparency and create increased understanding of the data used to support the resulting ranking. The following scale was used to assign a certainty factor to each hazard:

- High—Defined scenario/event to evaluate; probability calculated; evidenced-based/quantitative assessment to estimate potential impacts through hazard modeling.
- Moderate—Defined scenario/event or only a hazard area to evaluate; estimated probability; combination of quantitative (exposure analysis, no hazard modeling) and qualitative data to estimate potential impacts.
- Low—Scenario or hazard area is undefined; there is a degree of uncertainty regarding event probability; majority of potential impacts are qualitative.



Table 9.3-12. Summary of Risk Assessment Results

Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
Dam Failure	Partial or complete failure of a dam There are 6 dams in the Township, according to NJDEP.	Population impacted is dependent on the capacity of the dam, the extent of the dam failure inundation area and the severity of the failure.		The number of building impacted is dependent on the capacity of the dam, the extent of the dam failure inundation area and the severity of the failure.		Economic impacts include dam/building/infrastructure repairs; debris removal/disposal; utility impacts.		Low
Disease Outbreak	Disease Outbreaks which include: Mosquito-Borne Diseases, Tick-Borne Diseases, Campylobacteriosis, Influenza, Mumps, Ebola	Population impacted is dependent on the disease and severity of the outbreak; in some cases immuno-compromised persons are more vulnerable.		Structural impacts due to disease outbreak would be limited.		Economic losses can include County financial impacts to monitor/address outbreaks; lost wages or commercial interruptions; depends on the severity and type of disease outbreak. .		Low
Drought	Prolonged drought event - The County is serviced by water supplies who primarily get water from groundwater sources; some surface water sources.	Entire population exposed. Population on surface water supplies may be impacted first; water restrictions/contamination; increased wildfire risk.		Droughts are not expected to cause direct damage to buildings.		Losses include aesthetic, landscape/nursery/agricultural industry impacts.		Low
Earthquake	100, 500-, 2,500-Year Mean Return Period (MRP) Events evaluated NEHRP Soils D&E (soft soils that amplify ground shaking are present in the County)	NEHRP D&E:	231	NEHRP D&E:	High	100-year Loss:	\$0	High
		Liquefaction Class 4:	13	Liquefaction Class 4:	10	500-year Loss:	\$764,094	
						2,500-year Loss:	\$13,364,243	
Extreme Temperature	Extreme temperature event (heat or cold)	Over 65 Population:	670	Physical impacts due to extreme temperatures would be limited.		Low		Low





Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
		Population Below Poverty Level:	100					
Flood	100- and 500-Year Mean Return Period Event	100-year	44	100-year	High	100-year Loss:	\$15,544,185	High
		500-year	77	500-year	45			
Geological	High Landslide Susceptibility Areas and Areas developed over carbonate rock	Class A:	0	Class A:	Moderate	Class A:	0	Moderate
		Class B:	36	Class B:	14	Class B:	\$4,669,558	
		Carbonate Bedrock:	0	Carbonate Bedrock:	0	Carbonate Bedrock:	\$0	
Harmful Algal Bloom	Any body of water or area adjacent that is susceptible to harmful algal bloom.	Population in contact (e.g., swimming) or drinking water from surface water impacted can result in a range of health effects		General building stock impacts due to harmful algal bloom are not anticipated. Critical facilities (i.e., water treatment plants) could lead to plant closures.		Economic impacts range from recreational closure of impacted waterbodies; cost to sample/monitor/remediate.		Low
Hazardous Substance	Release of a hazardous substance from a fixed site.	Population impacted will depend on the type of material and scale of the incident. May include population within small radii of site.		The degree of damages to a building depends on the scale of the incident.		The degree of damages depends on the scale of the incident.		Low
Infestation	Infestation including: Insects [e.g. Gypsy Moth, Mosquitoes, Spotted Lanternfly, Emerald Ash Borer], White-Tailed Deer, Rodents	Population impacted will depend on the type and severity of infestation and may cause an increased risk for disease outbreak.		Physical impacts will be limited to indirect impacts from invasive species which affect crops and vegetation.		Economic impact will depend on the type and severity of infestation and may cause an increased risk for disease outbreak.		Low
Severe Weather	Severe Weather Event	Entire population exposed; The degree of impact to the population depends on the scale of the incident.		Entire building stock is exposed; The degree of impact depends on the scale of the incident.		Annualized Loss:	High	High
						100 -Year Loss:	\$265,215	
						500-year Loss:	\$1,901,377	
Severe Winter Weather	Severe Winter Weather Event	All residents/commuters/visitors are exposed; socially-vulnerable populations may be at increased risk.		All buildings are exposed; the degree of impact depends on the scale of the incident.		The cost of snow and ice removal and repair of roads/infrastructure can impact operating budgets.		Low





Hazard of Concern	Hazard/ Scenario Area Evaluated	Population		Buildings		Economy (Loss)		Certainty Factor
Wildfire	Wildfire Fuel Hazard areas (High, Very High, Extreme)	Wildfire:	23	Wildfire:	Moderate	Wildfire:	\$8,941,511	Moderate



REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Boonton.

- Number of repetitive loss (RL) properties: 10
- Number of severe repetitive loss (SRL) properties: 2
- Number of RL/SRL properties that have been mitigated: 0

Source: FEMA BureauNet, 2019

Note: RL and SRL as of 04/26/2019; The number of SRL properties excludes RL properties and includes properties that have been verified only (SRL_Indicator = V).

CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 9.3-13. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Status of Mitigation
		1% Event	0.2% Event	
Town of Boonton-Well Field	Potable	X	X	Town of Boonton responsibility, this asset is already protected from flooding
Deer Lake Dam	Dam	X	X	Private dam. The Township has no jurisdiction or responsibility. This is a dam and is protected from flooding.
Town of Boonton Water Storage Tanks*	Potable		X	

*Identified lifeline

ADDITIONAL IDENTIFIED VULNERABILITIES

The jurisdiction has identified the following vulnerabilities within their community:

- Valley Road Bridge overtopping during significant events like Irene and Floyd; previously elevated and still overtopped by Irene. Capacity of Stony Brook cannot handle that quantity of water. Valley Road is a major roadway for ingress and egress to Township.
- Rehab of Powerville Dam - rehab work needs to be done; engineering study has been completed but still awaiting DEP Dam Safety on what to do/how to fund - Township doesn't want to use municipal funds - want to apply for grant for rehab costs. Dam is a significant hazard dam which gives it lower priority.
- The Flood Damage Prevention Ordinance lacks the state mandated 1-foot freeboard requirement.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were 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 adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Boonton has significant exposure. Refer to the maps at the end of this annex (Figures 9.3-1 and 9.3-2).

HAZARD RANKING





This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Boonton. The Township of Boonton has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township indicated the following:

- The Township changed the hazard ranking of wildfire from low to medium.
- The Township changed the hazard ranking of hazardous substance from high to medium.

Table 9.3-14. Township of Boonton Hazard Ranking Input

Dam Failure	Drought	Earthquake	Extreme Temperature	Flood	Geological Hazard
Medium	Medium	Medium	Medium	Medium	Low

Harmful Algal Bloom	Severe Storm	Severe Winter Storm	Wildfire	Hazardous Substances	Disease Outbreak	Infestation
Low	High	High	Medium	Medium	High	Medium

9.3.6 Mitigation Strategy and Prioritization

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

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction’s progress on their mitigation strategy identified in the 2015 HMP. 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 can also be found under ‘Capability Assessment’ presented previously in this annex.



Table 9.3-15. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
			Check if Yes	Enter 2020 HMP Action #
Boonton Twp 1: Analysis/risk assessment of Powerville Dam in an effort to reclassify dam such that this hazard is being appropriately managed.	Township Engineer	In Progress - Awaiting response from NJDEP	X	2020-Township of Boonton-001
Boonton Twp 2: Glenbourne Road Pump Station Backup Power: Implement project once HMGP funding is provided.	OEM/Town Administrator with support from Township Engineer	Complete		
Boonton Twp 3: 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.	OEM and Town Administrator; support from NJOEM and FEMA	In progress	X	2020-Township of Boonton-002
Boonton Twp 4: 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.	OEM Coordinator, in coordination with MCOEM	Ongoing		
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.	Township, working in cooperation with Denville Township (overall project lead) and Rockaway Borough	Ongoing		
Boonton Twp 6: James Road retaining wall upgrade: Replace a wall that is deteriorated along James Road next to Ultra-Punch and Die.	Township – Engineering and DPW	Complete		
Boonton Twp 7: Deer Lake Dam Improvements: Complete ongoing improvement work to dam.	Deer Lake Association	Complete		

In addition to the above progress, the Township of Boonton identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:



- Significant annual improvements on Rockaway Valley Road drainage have been done.
- Drainage and culvert work at bottom of Decamp Drive intersection of Powerville Road.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Boonton participated in a risk assessment workshop in November 2019 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Boonton participated in a mitigation action workshop in March 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Morris County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and 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). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.3-16 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 might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 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 (Mitigation Strategy), 14 criteria were used to evaluate each action, including an evaluation of the benefits and costs. For each new mitigation action, a numeric rank was assigned (-1, 0, or 1) for each of the 14 evaluation criteria. The results of this evaluation, in addition to input from the jurisdiction, were then used to prioritize the mitigation initiatives as ‘High’, ‘Medium’, or ‘Low.’ Table 9.3-17 summarizes the evaluation of each mitigation initiative and the resulting priority, listed by Action Number.



Table 9.3-16. Proposed Hazard Mitigation Initiatives and Associated Priority

Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-Township of Boonton-001	Powerville Dam rehabilitation project	Powerville Dam is in need of structural rehabilitation. Wing walls are deteriorating.	Rehabilitate and fortify wing walls. Conduct engineering study and determine if other rehabilitation is necessary. Conduct actions if necessary.	Existing	Dam Failure	3	Township Engineer, FPA	HMGP, Dam Safety grants	Dam safety increased	High	1-3 years	High	SIP	SP
2020-Township of Boonton-002	Mitigate flood-prone properties, including RL/SRL property	The Township has 10 repetitive loss and 2 severe repetitive loss properties	Conduct outreach to flood-prone property owners, including the RL/SRL property owner and provide information on mitigation alternatives and submit a grant application to implement mitigation measures.	Existing	Flood	4	FPA	FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents	\$150,000 per property mitigated	3 years	High	SIP	PP
2020-Township of Boonton-003	Develop Debris Management Plan	The Township does not have an official Debris Management Plan	The Township will develop and adopt a Debris Management Plan and share with NJ DEP for approval.	Existing	All hazards	1, 3	OEM	Township budget	Plan in place	Staff time	Within 1 year	High	LPR	ES
2020-Township of Boonton-004	Old Denville Runoff Mitigation	Water from runoff via DeCamp Drive Impacts Towne	The Township will implement a drainage project to divert water to Old Denville	Existing	Flood, Severe Storm	3	FPA	HMGP, Township budget	Reduction in flood risk	\$47,000	Within 3	Medium	SIP	SP





Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Road and Old Denville Road.	storm drains properly.								years			
2020-Township of Boonton-005	Township Station and Firehouse Generator	Currently, the Chief's/Fire Prevention Office/Truck Bay does not have a generator to supply power during a power outage.	The Fire Department will research what size generator is necessary to supply backup power to the Township Station and Firehouse. The Township will then purchase and install a generator and necessary electrical components.	Existing	All hazards	3	<u>Fire Department</u>	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations	\$15,000	6 months	High	SIP	ES
2020-Township of Boonton-006	Update Flood Damage Prevention Ordinance	The flood damage prevention ordinance lacks freeboard	The Township will update the Flood Damage Prevention Ordinance to include the state mandated 1 foot freeboard requirement.	New	Flood	1, 2	<u>FPA</u>	Municipal budget	Meet state standards	Staff time	Within 6 months	High	LPR	PR
2020-Township of Boonton-007	Janet Road Drainage	Janet Road has poor drainage, leading to stormwater flooding	The Township will implement drainage improvements including house pump stations, a French drains.	Existing	Flood, Severe Storm	3	<u>Engineer</u>	Municipal budget, HMGP	Increase drainage	\$25,000	Within 1 year	High	SIP	SP

Notes:

Acronyms and Abbreviations:

Potential FEMA HMA Funding Sources:

Timeline:





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

FMA Flood Mitigation Assistance Grant Program
 HMGP Hazard Mitigation Grant Program
 PDM Pre-Disaster Mitigation Grant Program

The time required for completion of the project upon implementation

Cost:
 The estimated cost for implementation.

Benefits:
 A description of the estimated benefits, either quantitative and/or qualitative.

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 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. 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 preserve or restore the functions of natural systems. 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. 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 9.3-17. Summary of Evaluation and Action Priority

Initiative Number	Mitigation Initiative Name	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
2020-Township of	Powerville Dam rehabilitation project	1	1	1	1	1	0	0	1	1	1	0	1	1	1	11	High





Initiative Number	Mitigation Initiative Name	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-001																	
2020-Township of Boonton-002	Mitigate flood-prone properties, including RL/SRL property	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2020-Township of Boonton-003	Develop Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2020-Township of Boonton-004	Old Denville Runoff Mitigation	0	1	0	1	1	1	0	1	1	0	1	0	1	0	8	Medium
2020-Township of Boonton-005	Township Station and Firehouse Generator	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2020-Township of Boonton-006	Update Flood Damage Prevention Ordinance	1	1	1	1	1	1	1	1	1	1	0	1	1	1	13	High
2020-Township of Boonton-007	Janet Road Drainage	1	1	1	1	1	1	1	1	1	1	0	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.





Table 9.3-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Dam Failure					2020-Township of Boonton-003, 2020-Township of Boonton-005	2020-Township of Boonton-001		
Disease Outbreak					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Drought					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Earthquake					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Extreme Temperature					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Flood		2020-Township of Boonton-002, Township of Boonton-006			2020-Township of Boonton-003, 2020-Township of Boonton-005	2020-Township of Boonton-004, 2020-Township of Boonton-005; Township of Boonton-007		
Geological Hazards					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Harmful Algal Bloom					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Hazardous Substances					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Infestation					2020-Township of			



Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
					Boonton-003, 2020-Township of Boonton-005			
Severe Weather					2020-Township of Boonton-003, 2020-Township of Boonton-005	2020-Township of Boonton-004, 2020-Township of Boonton-005; Township of Boonton-007		
Severe Winter Weather					2020-Township of Boonton-003, 2020-Township of Boonton-005			
Wildfire					2020-Township of Boonton-003, 2020-Township of Boonton-005			

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED = high ranked hazard

ORANGE = medium ranked hazard

YELLOW = low ranked hazard

9.3.7 Staff and Local Stakeholder Involvement in Annex Development

The Township of Boonton followed the planning process described in Section 2 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization. The following table summarizes who participated and in what capacity. Additional documentation on the municipality’s planning process through Planning Partnership meetings is included in Section 2 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.3-19. Contributors to the Annex

Entity	Title	Method of Participation
Scott Para	OEM Director	Primary POC, attended plan participant meetings, provided impact data, contributed to the mitigation strategy
Bill Klingener	OEM Coordinator	Alternate POC
Andy Tintle	OEM Dep. Coord	Alternate POC
Hank Huelsebusch	Township Engineer	NFIP Floodplain Administrator
Douglas Cabana	Township Administrator	Alternate POC



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

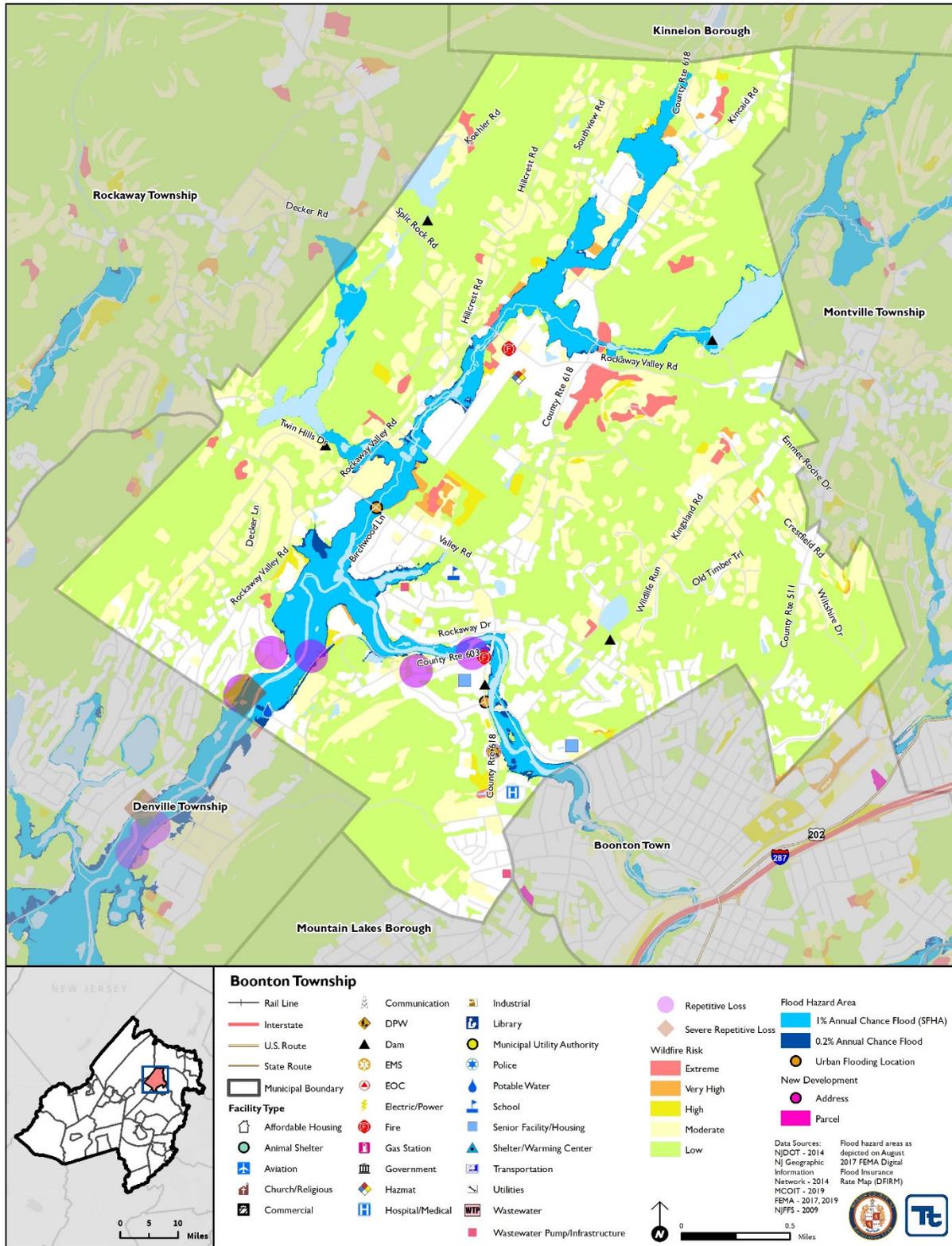
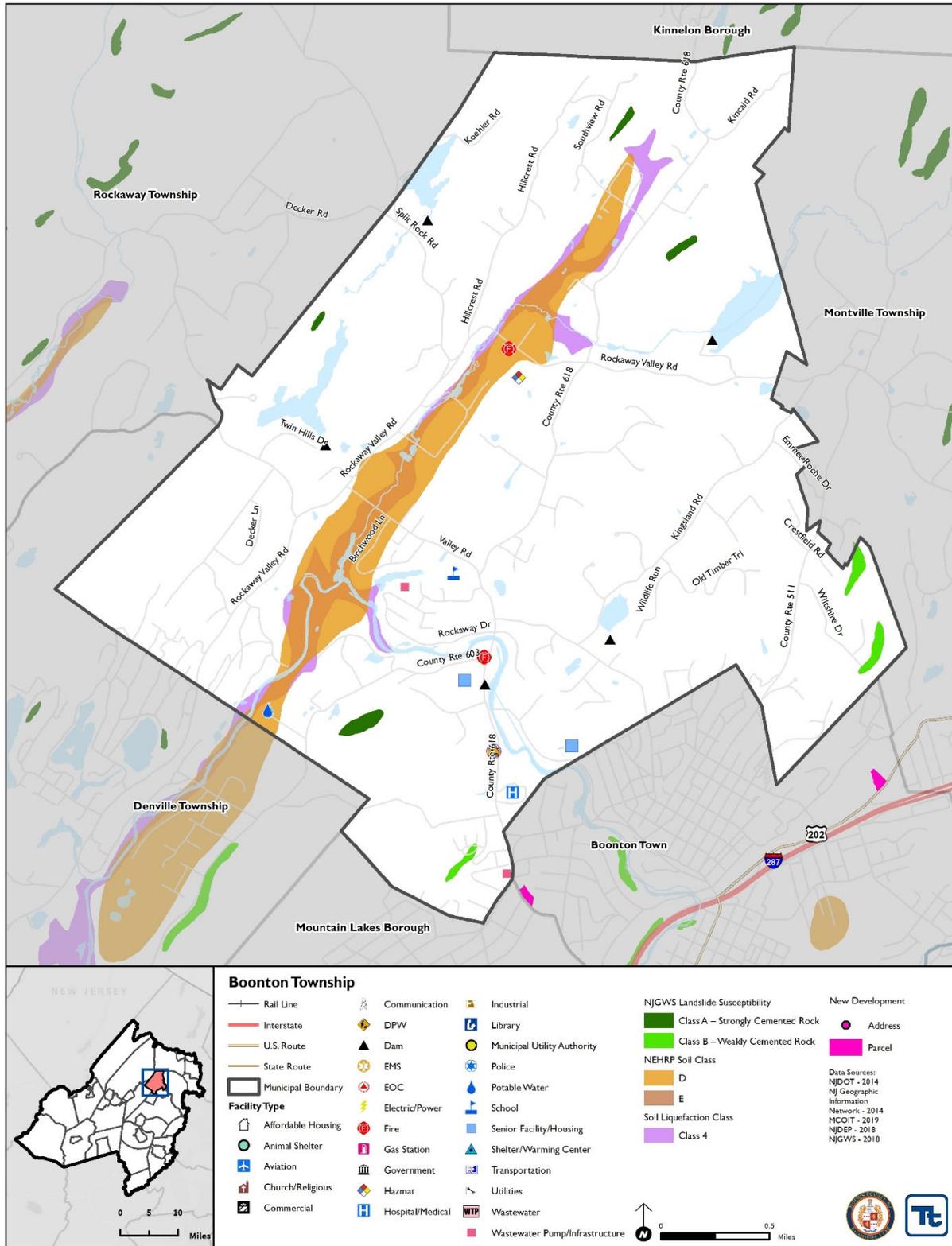




Figure 9.3-2. Township of Boonton Hazard Area Extent and Location Map 2





Action Worksheet			
Project Name:	Powerville Dam rehabilitation project		
Project Number:	2020-Township of Boonton-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Dam Failure		
Description of the Problem:	Powerville Dam is in need of structural rehabilitation. Wing walls are deteriorating.		
Action or Project Intended for Implementation			
Description of the Solution:	Rehabilitate and fortify wing walls. Conduct engineering study and determine is other rehabilitation is necessary. Conduct actions if necessary.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year event	Estimated Benefits (losses avoided):	Dam safety increased
Useful Life:	50 years	Goals Met:	3
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2 years
Estimated Time Required for Project Implementation:	1-3 years	Potential Funding Sources:	HMGP, Dam Safety Grants
Responsible Organization:	Township Engineer, Floodplain Administrator	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Remove dam	High	Dam cannot be removed
	Buyout properties that may be impacted by dam failure	\$250,000 per property	Expensive and not all property owners may be interested
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Powerville Dam rehabilitation project	
Project Number:	2020-Township of Boonton-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects lives downstream of potential release
Property Protection	1	Protects property downstream of potential release
Cost-Effectiveness	1	
Technical	1	Project is technically feasible
Political	1	Public would be supportive
Legal	0	Project awaits NJ DEP permitting
Fiscal	0	No funding is locally available
Environmental	1	
Social	1	
Administrative	1	The Township can coordinate the project locally.
Multi-Hazard	0	Dam Failure
Timeline	1	1-3 years
Agency Champion	1	Engineer, FPA
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Mitigate flood-prone properties, including RL/SRL properties		
Project Number:	2020-Township of Boonton-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	Frequent flooding events have resulted in damages in the floodprone areas. This area is residential, and these properties have been repetitively flooded as documented by paid NFIP claims.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to 30 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the floodprone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (in accordance with flood ordinance)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	4
Estimated Cost:	\$3Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Mitigate flood-prone properties, including RL/SRL properties	
Project Number:	2020-Township of Boonton-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from floodprone areas of the Township
Administrative	0	
Multi-Hazard	1	Flood, Severe Storm
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Old Denville Runoff Mitigation		
Project Number:	2020-Township of Boonton-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	Water from runoff via DeCamp Drive Impacts Towne Road and Old Denville Road.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will implement a drainage project to divert water to Old Deville storm drains properly.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	25 year storm	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	30 years	Goals Met:	3
Estimated Cost:	\$47,000	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 3 years
Estimated Time Required for Project Implementation:	1 month	Potential Funding Sources:	HMGP, municipal budget
Responsible Organization:	NFIP Floodplain Administrator	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning, Stormwater planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate roadway	\$500,000	Costly and may not solve problem
	Relocate roadway	N/A	Not possible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			

Action Worksheet



Project Name:	Old Denville Runoff Mitigation	
Project Number:	2020-Township of Boonton-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Protects DeCamp Drive and Towne Road from flood damage and erosion.
Cost-Effectiveness	0	
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood, Severe Storm
Timeline	0	Within 3 years
Agency Champion	1	NFIP Floodplain Administrator
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	

Action Worksheet	
Project Name:	Township Station and Firehouse Generator



Project Number:	2020-Township of Boonton-005		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards		
Description of the Problem:	Currently, the Chief's/Fire Prevention Office/Truck Bay does not have a generator to supply power during a power outage.		
Action or Project Intended for Implementation			
Description of the Solution:	The Fire Department will research what size generator is necessary to supply backup power to the Township Station and Firehouse. The Township will then purchase and install a generator and necessary electrical components.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations
Useful Life:	20 years	Goals Met:	3
Estimated Cost:	\$15,000	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6 months
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Township Fire Department	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Township Station and Firehouse Generator	
Project Number:	2020-Township of Boonton-005	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of Township Station and Firehouse.
Property Protection	1	Project will protect Township Station and Firehouse from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	1	6 months
Agency Champion	1	Township Fire Department
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Janet Road Drainage		
Project Number:	2020-Township of Boonton-007		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards		
Description of the Problem:	Janet Road has poor drainage, leading to stormwater flooding		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will implement drainage improvements including house pump stations, a French drains.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations
Useful Life:	35 years	Goals Met:	3
Estimated Cost:	\$25,000	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 1 year
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	FEMA HMGP, Municipal Budget
Responsible Organization:	Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Stormwater Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Elevate homes	\$500,000	Costly
	Elevate roads	\$500,000	Costly. Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Janet Road Drainage	
Project Number:	2020-Township of Boonton-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect lives from flooding.
Property Protection	1	Project will protect properties adjacent to Janet Road from flooding
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	6 months
Agency Champion	1	Township Fire Department
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	

