



## 9.16 Borough of Kinnelon

This section presents the jurisdictional annex for the Borough of Kinnelon.

### 9.16.1 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
Ernie Palatucci, OEM Coordinator 973-838-5253 ernpjr@gmail.com	Adam Barish, Deputy OEM Coordinator 973-650-4427 abarash@gmail.com

### 9.16.2 Municipal Profile

The Borough of Kinnelon is located in the northeastern section of Morris County, New Jersey. According to the U.S. Census, the Borough has a total area of 19.186 square miles, of which 17.987 square miles is land and 1.199 square miles is water. The Pequannock River separates the Borough to the north from West Milford Township in Passaic County. From this northern point the Borough is then bordered by Butler and Riverdale Boroughs, Pequannock Township, and Lincoln Park Borough. Kinnelon is bordered to the south by Boonton and Montville Townships and Rockaway Township to the west. State Highway 23 runs along the northern border of the Borough. According to the U.S. Census, the 2010 population for the Borough of Kinnelon was 10,248.

Kinnelon Borough is made up of three primary sections. They are Kinnelon Proper, Fayson Lakes and Smoke Rise (a gated Community but under the jurisdiction of Kinnelon Borough). The majority of Kinnelon Borough is located within the New Jersey Highlands physiographic province, which is part of the Reading Prong of the New England physiographic province. Land use in Kinnelon Borough is dominated by a mix of forested and residential lands. According to the NJDEP 1995/1997 Land Use/Land Cover data, sixty-two percent of Kinnelon’s land area is forested. Twenty-six percent of Kinnelon is identified from aerial photography as urban, which in Kinnelon is mainly residential lands. The remainder of land in the Borough is split between surface water and wetlands.

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in section 9.X of this annex which illustrates the hazard areas along with the location of potential new development.

The Borough of Kinnelon has approved the development of a small shopping center consisting of 6 commercial retail store areas located on Boonton Ave. Overall Kinnelon does not have any major residential or commercial developments, or major infrastructure development planned for the next 5 years in the municipality.

Table 9.16-1. Growth and Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2010 to present</b>					
Badaan	Commercial	6	82-84 Boonton Ave Kinnelon	None	Under Construction





Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
Commercial Development					anticipated completion
<b>Known or Anticipated Development in the Next Five (5) Years</b>					
None known at the present day					

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

### 9.16.3 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 9.16-2. Hazard Event History**

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
August 28, 2011	Hurricane Irene	DR-4021	Yes	County Bridge failed closed Kinnelon Road for months
October 2012	Hurricane Sandy	DR-4086	Yes	Bridge failure in the Borough caused \$1.3M in damages

### 9.16.4 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 Borough of Kinnelon. 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 Borough of Kinnelon.

**Table 9.16-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Occasional	24	Medium
Earthquake	500-year MRP: \$1,523,740 2,500-year MRP: \$34,225,682	Occasional	24	Medium
Extreme Temperature	Damage estimate not available	Frequent	18	Medium
Flood	1% Annual Chance: \$0	Rare	6	Low





Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Geological Hazards	Exposed to Class A and Class B: \$31,532,548	Frequent	18	Medium
Severe Storm	100-Year MRP: \$2,899,630 500-year MRP: \$10,142,312 Annualized: \$181,760	Frequent	48	High
Winter Storm	1% GBS: \$39,426,122 5% GBS: \$197,130,610	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$40,745,619	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 Borough of Kinnelon.

Table 9.16-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Borough of Kinnelon	0	0	\$0.00	0	0	0

Source: FEMA Region 2, 2014

- (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 3, 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

There are no critical facilities in the Borough that are located in the FEMA 1% or 0.2% flood hazard areas.





**Other Vulnerabilities Identified**

According to the Borough, the following are identified hazard vulnerabilities within the community:

- None identified beyond what is already noted in this plan

**9.16.5 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 Borough of Kinnelon.

**Table 9.16-5. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	Local	Planning Board	Currently being updated 2015
Capital Improvements Plan	Yes	Local	Administration	2014
Floodplain Management / Basin Plan	No			
Stormwater Management Plan	Yes	Local		Code Chapter 172 , #8-07 Currently being updated
Open Space Plan	Yes	Local, County, State	Open Space Advisory Committee	
Stream Corridor Management Plan	No			
Watershed Management or Protection Plan	Yes	Local		Wastewater Engineers -Guerin & Vreeland
Economic Development Plan	No			
Comprehensive Emergency Management Plan	Yes	Local, County, State	OEM	
Emergency Response Plan	Yes	Local, County, State	OEM-LEPC Team, CERT Team	
Post-Disaster Recovery Plan	Yes	Local, County, State	OEM-LEPC Team ,CERT Team	
Transportation Plan	No			
Strategic Recovery Planning Report	No			
Other Plans:	No			





Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local	Planning Board	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Zoning Board	
Subdivision Ordinance	Yes	Local	Planning Board	
NFIP Flood Damage Prevention Ordinance	No			The Borough does not participate in NFIP
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	No			
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes	Local	Planning Board	
Stormwater Management Ordinance	Yes	Local	DPW	Chapter 172 (Stormwater Control)
Municipal Separate Storm Sewer System (MS4)	Yes	Local	Police and Zoning Officer	Chapter 163 (Sewer Connections)
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	DPW	Soil Removal Ordinance #14-11

**Administrative and Technical Capability**

The table below summarizes potential staff and personnel resources available to the Borough of Kinnelon.

**Table 9.16-6. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	EMO
Environmental Board/Commission	Yes	Kinnelon Borough Environmental Commission
Open Space Board/Committee	Yes	Open Space Advisory Committee
Economic Development Commission/Committee	No	
Maintenance Programs to Reduce Risk	No	
Mutual Aid Agreements	Yes	Fire/Police/EMS/Ambulance
<b>Technical/Staffing Capability</b>		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Construction Official Dan Hagberg Engineer Paul Darmofalski
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Construction Official Dan Hagberg Engineer Paul Darmofalski





Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Planners or engineers with an understanding of natural hazards	Yes	Guerin & Vreeland Engineers
NFIP Floodplain Administrator	No	The Borough does not participate in the NFIP
Surveyor(s)	Yes	Contracted as required
Personnel skilled or trained in GIS and/or Hazus-MH applications	No	
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	OEM Coordinator
Grant Writer(s)	No	
Staff with expertise or training in benefit/cost analysis	Yes	Borough CFO
Professionals trained in conducting damage assessments	No	

### Fiscal Capability

The table below summarizes financial resources available to the Borough of Kinnelon.

**Table 9.16-7. Fiscal Capabilities**

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

### Community Classifications

The table below summarizes classifications for community program available to the Borough of Kinnelon.

**Table 9.16-8. 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)	Yes	TBD	
Public Protection (ISO Fire Protection Classes 1 to	No		





Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
10)			
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	Yes	Lockdown Procedures	
Organizations with Mitigation Focus (advocacy group, non-government)	Yes	CERT Team	
Public Education Program/Outreach (through website, social media)	Yes	Nixle, OEM FaceBook pages, School Text Program, Borough Website	
Public-Private Partnerships	Yes		

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

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

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

### Self-Assessment of Capability

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

**Table 9.16-9. 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	



Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Community Resiliency Capability		X	
Capability to Integrate Mitigation into Municipal Processes and Activities.		X	

### National Flood Insurance Program

The Borough has not mapped floodplains and does not currently participate in the NFIP. However, the Borough has included an initiative in the updated mitigation strategy to consider joining the NFIP to facilitate property owners to purchase flood insurance voluntarily.

### Community Rating System

The Borough of Kinnelon does not participate in the Community Rating System (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 Borough of Kinnelon recently completed a Environmental Resource Inventory (ERI) in 2013. The ERI included description of extreme events and considerations for known natural hazards including tropical cyclones, landslides, and earthquakes. It also analyzes the identified Flood hazard Areas and other flood prone areas in the municipality. The goal of the document is to inform the decision makers in the Borough on the resources and environmentally sensitive issues and areas in the Borough.

The Borough also completed an Open Space and recreation Plan in 2012 that included the following recommendations and considerations related to natural hazard mitigation:

1. Share acquisition priorities with potential funding partners, including NJ Green\Acres, Morris County Park Commission, and local land trust and watershed organizations.
2. Work with landowners of large undeveloped properties to preserve the natural resource value of their land.
3. Continue to enact, or enhance, existing critical areas ordinances to protect, at a minimum, floodplains and wetlands, stream corridors, steep slopes, and groundwater recharge areas. This should be done in conjunction with the Environmental Commission and Planning Board.

### Regulatory and Enforcement

Planning Board, Construction Office and Zoning Board, Environmental Commission





**Operational and Administration**

The Mayor and Council overseeing general administration of Borough activities. They work in conjunction with the appointed Boards and Open Space Committee.

**Fiscal**

Borough CFO, Finance Committee and Borough Administrator.

**Education and Outreach**

Public notifications through local publications and available information sources on Borough website.

**9.16.6 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 9.16-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
Kinnelon 1: Backup power for Kinnelon Borough Hall (data storage facility/Emergency Operations Center (EOC)) on 130 Kinnelon Road.	Installed Diesel generator for Police, data storage facility /Emergency Operations Center (EOC)	Complete
Kinnelon 2: Backup power for Kinnelon High School (shelter) on 121 Kinnelon Road.	Not Completed as of 1/15 Removed as a shelter due to lack of resources and necessity to provide police presence.	Postponed until funding becomes available.
Kinnelon 3: Backup power for Pearl R. Miller School (shelter) on 117 Kiel Avenue.	Not Completed as of 1/15 Removed as a shelter due to lack of resources to provide police presence.	
Kinnelon 4: Backup power for Stonybrook School (shelter) on 118 Boonton Avenue.	Not Completed as of 1/15 Removed as a shelter due to lack of resources to provide police presence.	
Kinnelon 5: Backup power for Kiel School (shelter) on 115 Kiel Avenue.	Installed generator supplies Kitchen and limited lighting. Need generator to provide full power and heat to the shelter.	Review and upgrades required to expand capabilities to make this the primary shelter.
Kinnelon 6: Backup power for Our Lady of Magnificent School (shelter) on 2 Miller Road.	Not Completed as of 1/15 Removed as a shelter due to lack of resources to provide police presence.	
Kinnelon 7: Engineering study to determine mitigation action for Lake Kinnelon Dam on	Study proceeding	





Description	Status	Review Comments
Talbot Drive.		
Kinnelon 8: Engineering study to determine mitigation action for Reality Dam.	Failed Inspection	Planning underway for mitigation efforts
Kinnelon 9: Engineering study to determine mitigation action for DPW building on 118 Kinnelon Road.	Plans proceeding	New building and proposed and approved. Diesel Generator to be moved from Borough Hall (New Natural gas installed there) and relocated to supply power to DPW.
Kinnelon 10: Bury power lines in Smoke Rise Section.	Removed from mitigation list Unachievable	Rock ledges and mountainous terrain preclude underground utilities or natural gas installation.
Kinnelon 11: Backup power for Smoke Rise Inn (shelter) on 9 Perimeter Road.	Under review	
Kinnelon 12: Backup power for Fire Department Company 2 on 140 Boonton Avenue.	Completed 2012	New Firehouse with upgraded services.
Kinnelon 13: Inundation study of the Kakeout Dam.	Discontinue	Butler will be restudying the Kakeout dam and dike starting 2015 and submitting to NJDEP in 2016.
Kinnelon 14: Inundation study of the Kakeout Dike.	Discontinue	Butler will be restudying the Kakeout dam and dike starting 2015 and submitting to NJDEP in 2016.
Kinnelon 15: Develop all-hazards public education and outreach program for hazard mitigation and preparedness	Under planning and review	Review of web site presence with new website with education element to be included. Plans on moving diesel generator from Borough Hall to DPW to supply power.

**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:

- Dam rebuilds on all the three Fayson Lakes (East, South and West) Lakes. This has been completed and do not require Mitigation, short of a catastrophic natural event. Dams have been approved and currently Fayson Lakes is repaying secured loans through home owner assessments.

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

The Borough of Kinnelon participated in a mitigation action workshop in 2014 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013). In 2015, the Borough of Kinnelon participated in a second workshop and was provided the results to the risk assessment to further assist with the identification of mitigation actions.

Table 9.16-11 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Kinnelon 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 9.16-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.16-11. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
K-1	Shelter and warming Shelter designation	Existing/New	All	1, 2, 3, 4	OEM, Borough of Kinnelon, Local Emergency Planning Council	to provide needed services in a timely basis with community awareness	Unknown	Unknown	2015-16	High	LPR/EAP	PI/ES
K-2	Dam Studies Assessment remedy and funding	Existing	Flood, Dam Failure	1, 2, 3, 4	Borough of Kinnelon	Mitigation of impact of failure.	TBD	Unknown	2015-17	High	SIP	PR/PP/SP
K-3	Department of Public Works Capabilities	Existing and New	All	1,2,3,4	Borough of Kinnelon Mayor & Council	to provide needed services in a timely basis with community awareness	\$1.4 million	Public bond	2015-16	High	LPR/EAP	PI/ES
K-4	Public Education – Outreach-Information	N/A	All	1	Borough of Kinnelon Mayor & Council, OEM, LEPC, Cert Team	Community information and updated status of weather and hazard events.	\$25,000	Borough Budget	2015	High	LPR/EAP	PI/ES
K-5	Improve effectiveness of Interdepartmental and Agencies Communications	N/A	All	1	OEM, Police, Fire, Ambulance	Full Command Coordination	\$100,000	Unknown	Immediate	High	LPR/EAP	PI/ES
K-6	Improve Command Capabilities and monitoring of events	N/A	All	1,2,3,4	OEM, Borough of Kinnelon, Local Emergency Planning Council	Full Command Coordination	\$5000	Unknown	Immediate	High	LPR/EAP	PI/ES
K-7	Morris County Dam Silas Condict Park County Lake Dam.	Existing	Flood, Dam Failure	1, 2, 3, 4	Morris County, Kinnelon PW	High	TBD	County	Immediate	Low as Lake has been drained	NSP	PP
K-8	Morris County Mitigation Plan:	N/A	All	1, 2, 3, 4	County OEM, Kinnelon OEM	High	TBD	Federal, State,	Immediate Planning	High	LPR	PR



**Table 9.16-11. Proposed Hazard Mitigation Initiatives**

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	Develop, fund and implement a plan to provide back up generator power to all gas stations in the Kinnelon, Butler, Pequannock, Pompton Plains corridor on route 23 north and south							Private, County and Local	required			
K-9	Evaluate the need for and benefits of joining the NFIP, and join the NFIP if found to be worthwhile for the Borough and its constituents.	N/A	Flood	1	Engineer, as supported by the Mayor and Borough government	Ability for constituent to access NFIP insurance coverage	Low-Medium	Local Budget	Short	Medium	LPR	PR

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  
 SRL Severe Repetitive Loss Grant Program

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

Timeline:

Short 1 to 5 years





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 Storm Ready 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 9.16-12. 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
K-1	Shelter and warming Shelter designation	1	1	-1	0	0	1	-1	0	1	1	1	1	1	1	6	High
K-2	Dam Studies Assessment remedy and funding	1	1	1	1	1	1	1	1	0	1	1	1	1	1	13	High
K-3	Department of Public Works Capabilities	1	1	1	0	0	1	1	0	0	1	1	1	1	1	10	High
K-4	Public Education – Outreach- Information	1	0	1	1	0	0	1	0	1	1	1	1	1	1	10	High
K-5	Improve effectiveness of Interdepartmental and Agencies Communications	1	1	-1	0	0	1	-1	0	0	1	1	1	1	1	6	High
K-6	Improve Command Capabilities and monitoring of events	1	1	-1	0	0	1	-1	0	1	1	1	1	1	1	6	High
K-7	Morris County Dam Silas Condict Park County Lake Dam.	1	1	1	1	1	1	1	1	0	1	1	1	1	1	13	Low as Lake has been drained
K-8	Morris County Mitigation Plan: Develop, fund and implement a plan to provide back up generator power to all gas stations in the Kinnelon, Butler, Pequannock, Pompton Plains corridor on route 23 north and south	1	1	0	0	0	0	0	0	1	1	1	1	1	0	7	High
K-9	Evaluate the need for and benefits of joining the NFIP, and join the NFIP if found to be worthwhile for the Borough and its constituents.	1	1	1	1	0	0	1	0	0	1	0	0	0	0	6	Medium

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





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

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None at this time.

### **9.16.8 Hazard Area Extent and Location**

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

### **9.16.9 Additional Comments**

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None at this time.



Figure 9.16-1. Borough of Kinnelon Hazard Area Extent and Location Map 1

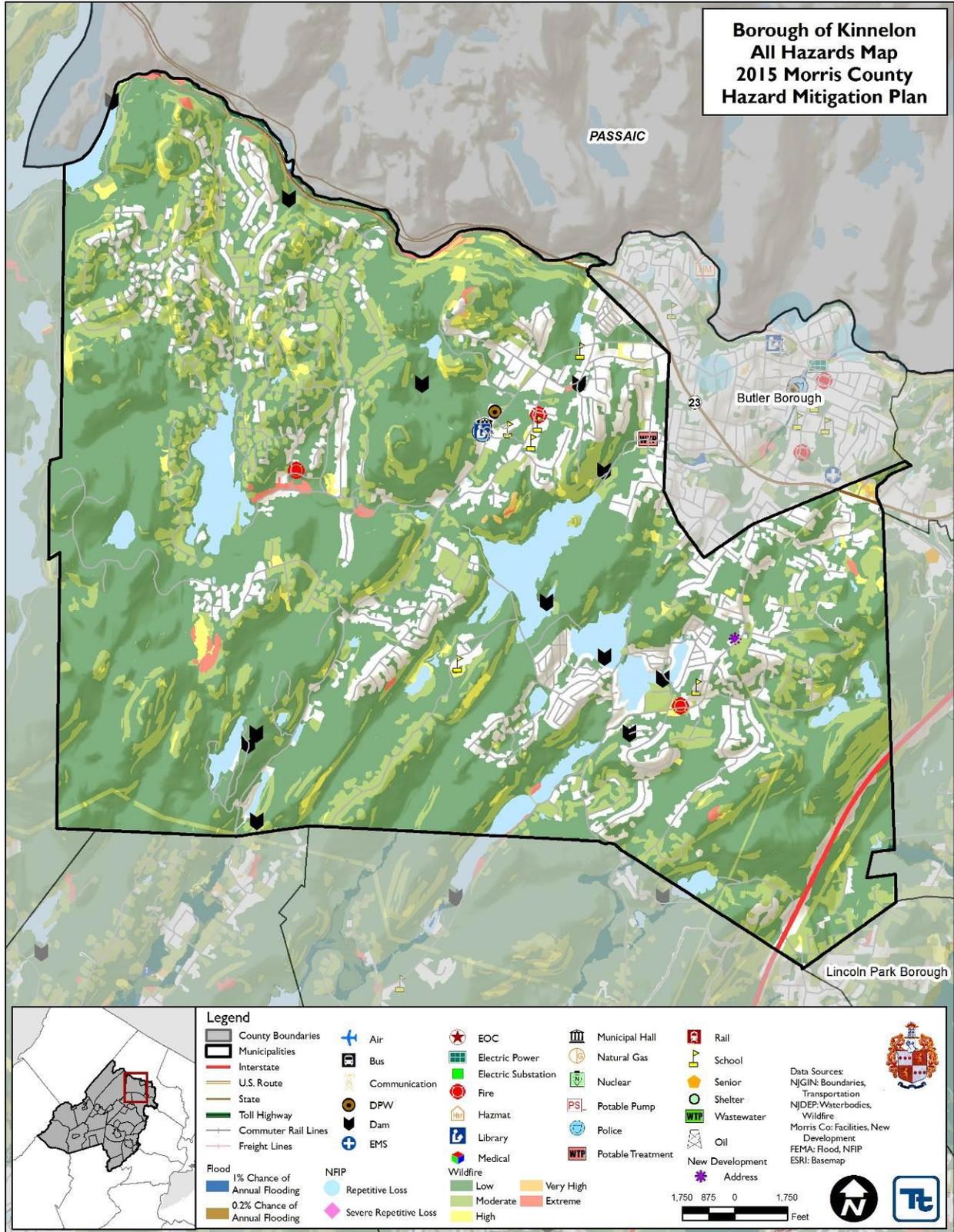
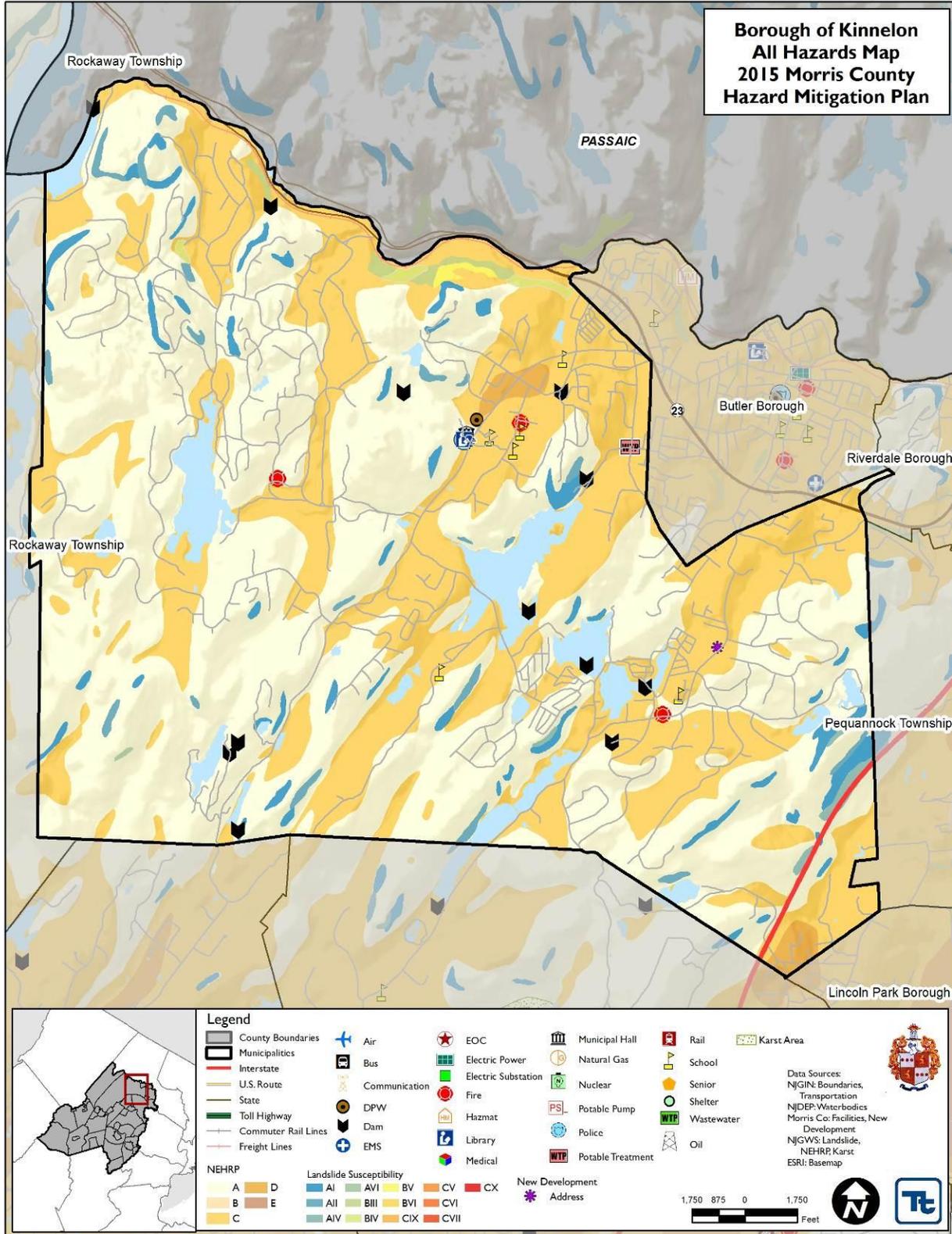




Figure 9.16-2. Borough of Kinnelon Hazard Area Extent and Location Map 2





**Action Number:** K-3  
**Mitigation Action/Initiative:** Department of Public Works Capabilities

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Readiness and ability of DPW to address all hazards in all conditions
<b>Specific problem being mitigated:</b>	Emergency response for all hazards
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Facility Improvement to permit internal storage of DPW equipment and materials
	2. Natural gas installation for utilization of complete power backup supply
	3. Storage of additional materials storage and personnel comfort
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Provision of new facility for DPW responses
<b>Action/Project Category</b>	Hazard Mitigation
<b>Goals/Objectives Met</b>	1, 2, 3, 4
<b>Applies to existing and/or new development; or not applicable</b>	Existing and new
<b>Benefits (losses avoided)</b>	Failure to provide needed services in a timely basis with community awareness
<b>Estimated Cost</b>	High (\$1.4 million)
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible/Lead Agency/Department</b>	Borough of Kinnelon Mayor & Council
<b>Local Planning Mechanism</b>	Borough of Kinnelon
<b>Potential Funding Sources</b>	Public Bonding of project
<b>Timeline for Completion</b>	Short Term (2015 -16)
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)



Action Number:

K-3

Mitigation Action/Initiative:

Department of Public Works Capabilities

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Effectiveness of response to hazard or emergency
Property Protection	1	
Cost-Effectiveness	1	
Technical	0	
Political	0	
Legal	1	
Fiscal	1	
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	1	
Timeline	1	Project will be completed in the next year
Local Champion	1	
Other Community Objectives	1	Community served in all Borough operations needs and requirements
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Action Number: K-5

Mitigation Action/Initiative: Improve Command Capabilities and monitoring of events

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Command Center Capabilities
<b>Specific problem being mitigated:</b>	Command Center facility improvements
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Installation of addition electric circuits for support equipment
	2. Installation of telephone capabilities
	3. Installation of monitoring equipment, TV and emergency radio capabilities.
	4. Computer access for Social Media, Public communications and ability to provide updates, shelter availability or evacuation information
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Study current capabilities and Process, determine necessary improvements
<b>Action/Project Category</b>	Communications
<b>Goals/Objectives Met</b>	1, 2, 3, 4
<b>Applies to existing and/or new development; or not applicable</b>	Existing and new
<b>Benefits (losses avoided)</b>	Failure to provide needed services
<b>Estimated Cost</b>	Low (\$5,000)
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible/Lead Agency/Department</b>	OEM, Borough of Kinnelon, Local Emergency Planning Council
<b>Local Planning Mechanism</b>	Emergency Management, Capital Improvement
<b>Potential Funding Sources</b>	County and FEMA Grants, Bonding, Borough Budget for 2016
<b>Timeline for Completion</b>	2015 -16
Reporting on Progress <i>(Do not complete - this will be used for the 2020 Update)</i>	
<b>Date of Status Report/ Report of Progress</b>	Date: Progress on Action/Project:

\* Refer to results of Prioritization (page 2)



Action Number:

K-5

Mitigation Action/Initiative:

Improve Command Capabilities and monitoring of events

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Effectiveness of response to hazard or emergency
Property Protection	1	
Cost-Effectiveness	-1	
Technical	0	
Political	0	
Legal	1	
Fiscal	-1	High cost of equipment
Environmental	0	
Social	1	Social Media - Communications
Administrative	1	
Multi-Hazard	1	
Timeline	1	2015-2016
Local Champion	1	
Other Community Objectives	1	Community awareness of situation and required safety actions.
<b>Total</b>	<b>6</b>	
<b>Priority (High/Med/Low)</b>	<b>High</b>	