



9.2 BOROUGH OF ANDOVER

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

9.2.1 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
John Hoag, Deputy OEM 137 Main Street, Andover, NJ 07821 Phone: (862) 268-3508; (973) 786-6688 Email: Firedog2269@myway.com	Beth Brothman, Municipal Clerk/Registrar 137 Main Street, Andover, NJ 07821 Phone: (973) 786-6688 Email: bethandover@gmail.com

9.2.2 MUNICIPAL PROFILE

The Borough of Andover is located in southern Sussex County and bordered to the north, east and west by Andover Township and to the south by Green Township. Andover Junction Brook and Kymer Brook are two bodies of water that flow through the Borough. The Borough has a total area of 1.47 square miles and contains one unincorporated community, Andover Junction. According to the U.S. Census, the 2010 population for the Borough of Andover was 606.

Growth/Development Trends

The Borough of Andover did not note any recent residential/commercial development since 2010 or any major residential or commercial development, or major infrastructure development planned for the next five years in the municipality.

9.2.3 NATURAL HAZARD EVENT HISTORY SPECIFIC TO THE MUNICIPALITY

Sussex 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 9.2-1. Hazard Event History

Date(s) of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
October 29, 2011	Severe Storm	DR-4048	Yes	Downed trees and power lines within the Borough. Approximately \$5,000 in debris cleanup costs.
October 26 – November 8, 2012	Hurricane Sandy	DR-4086	Yes	Power outages up to eight days which impacted the water supply for the Borough. The Borough had to purchase and install a generator to power the water supply station. No other costs to the Borough.





9.2.4 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 risk ranking methodology is presented in Section 5.3. However, each municipality had the opportunity to adjust the final ranking based on municipal feedback. The following summarizes the hazard vulnerabilities and their ranking in the Borough of Andover. 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.

Table 9.2-1. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Dam Failure	Damage estimate not available	Occasional	24	Medium
Drought	Damage estimate not available	Frequent	30	Medium
Earthquake	100-Year GBS: \$0 500-Year GBS: \$385,540 2,500-Year GBS: \$6,195,143	Occasional	28	Medium
Flood	1% Annual Chance: \$7,833,353	Frequent	18	Medium
Geologic	GBS Exposed to Carbonate Rock Areas: \$57,441,735	Occasional	36	Medium*
Hurricane	100-year MRP: \$35,567 500-year MRP: \$277,684 Annualized: \$2,167	Frequent	48	High
Nor'Easter	Damage estimate not available	Frequent	48	High
Severe Weather	100-Year MRP: \$35,567 500-year MRP: \$277,684 Annualized: \$2,167	Frequent	48	High
Severe Winter Weather	1% GBS: \$1,107,203 5% GBS: \$5,536,015	Frequent	51	High
Wildfire	Estimated Value in the Extreme, Very High, and High Hazard Areas: \$1,345,767	Frequent	24	Medium
Hazardous Materials	Damage estimate not available	Frequent	36	High

Notes:

* The hazard ranking was changed for this hazard based on input from the municipality, population exposed, and/or event history.

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

a. The general building stock valuation is based on the custom inventory generated for the municipality and based on improved value.

b. High = Total hazard priority risk ranking score of 31 and above

Medium = Total hazard priority risk ranking of 15-30+

Low = Total hazard risk ranking below 15

c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the estimated value of contents. Loss estimates for the flood and earthquake hazards represent both structure and contents. Potential flood loss estimates were generated using Hazus-MH 3.0 and the 2011 FEMA DFIRM for the 1-percent annual chance event. For the geologic and wildfire hazards, the improved value and estimated contents of buildings located within the identified hazard zones is provided.





National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Borough of Andover.

Table 9.2-3. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Flood Boundary (3)
Borough of Andover	5	1	\$4,314	0	0	3

Source: FEMA, 2014

Note (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of November 31, 2014 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 11/31/2014.

Note (2) Total building and content losses from the claims file provided by FEMA Region 2.

Note (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. Number in the floodplain was determined using the 2007 Effective DFIRM 1% annual chance flood boundary.

Note (4) 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.

Note (5) A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Critical Facilities

There are no critical facilities located in the FEMA 1% or 0.2% annual chance boundary.

Other Vulnerabilities Identified by Municipality

The hazard profiles in Section 5.0 have detailed information regarding each plan participant’s vulnerability to the identified hazards. Further, mitigation projects have been identified that may more specifically detail vulnerabilities in the community. There are no additional vulnerabilities identified at this time.

9.2.5 CAPABILITY ASSESSMENT

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Education/Outreach and Community classification
- Self-Assessment of Capability
- 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 Andover.



Table 9.2-4. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan	Yes	Local	Planning Board	Andover Borough Master Plan NJSA 40:55D-89
Capital Improvements Plan	No			
Floodplain Management / Basin Plan	No			
Stormwater Management Plan	Yes	Local	Engineer	Andover Borough Stormwater Management Plan NJSA 12:5-3 NJAC 7:8
Open Space Plan	Yes	Local	Open Space	Andover Borough Open Space Plan
Stream Corridor Management Plan	No			
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	Yes	Local	Emergency Management	2014
Emergency Response Plan	Yes	Local	Emergency Management	2014
Post-Disaster Recovery Plan	Yes	Local	Emergency Management	2014
Transportation Plan	No			
Strategic Recovery Planning Report	No			
Other Plans:	No			
Regulatory Capability				
Building Code	Yes	State and Local	Construction Official	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Zoning	Chapter 134 – Zoning
Subdivision Ordinance	Yes	Local	Zoning	Chapter 121 – Subdivision of Land
NFIP Flood Damage Prevention Ordinance	Yes	Local	Engineer	Chapter 74 – Flood Damage Prevention
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	Yes	State and Local	Engineer	N.J.A.C 7:13 – Flood Hazard Area Control Act
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes	Local	Planning & Zoning Board	Andover Borough Code Chapter 109
Stormwater Management Ordinance	Yes	Local	Engineer	Chapter 115 – Stormwater Control
Municipal Separate Storm Sewer System (MS4)	No			
Natural Hazard Ordinance	No			



Table 9.2-4. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	No	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	Engineer	Chapter 74, Article 15 – Steep Slope Area Regulations

Administrative and Technical Capability

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

Table 9.2-5. Administrative and Technical Capabilities

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

Fiscal Capability

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





Table 9.2-6. 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	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes
Impact Fees for homebuyers or developers of new development/homes	Yes – COAH fees
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	No
Open Space Acquisition Funding Programs	Yes
Other	No

Education/Outreach and Community Classifications

The table below summarizes education/outreach programs the community participates in and the classifications for community program available to the Borough of Andover.

Table 9.2-7. Education/Outreach and Community Classifications

Program	Do you have/participate in this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	7/9	1997
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	Yes	N/A	
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	Yes	N/A	
Public-Private Partnerships	No		

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery, and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The Community Rating System (CRS) class applies to flood insurance while the Building Code Effectiveness Grading Schedule (BCEGS) and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no



classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1,000 feet of a creditable fire hydrant and is within five road miles of a recognized fire station.

Criteria for classification credits are outlined in the following documents:

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

Self-Assessment of Capability

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

Table 9.2-8. Self-Assessment of Capability

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 – staff; municipal budget		
Community Political Capability			X
Community Resiliency Capability			X
Capability to Integrate Mitigation into Municipal Processes and Activities.	X - funding		

National Flood Insurance Program

NFIP Floodplain Administrator (FPA)

Harold Pellow, Engineer

Flood Vulnerability Summary

The Borough does not maintain lists/inventories of properties that have been damaged by floods. There were two residential properties damaged during recent storm events. During Irene, Lee, and Sandy, substantial damage estimates were not made. There is currently no interest in mitigation within the Borough.

Resources

Responsibilities of floodplain administration is contracted by the Borough. NFIP administration services and functions the FPA provides includes permit review, inspections, education and outreach. The Borough currently does not provide any education or outreach to the community regarding flood hazards/risk or flood risk reduction. The FPA indicated that are no barriers to running an effective floodplain management program in the community. The FPA also stated that he feels adequately trained and supported to fulfill the





responsibilities as the Borough FPA and that he would consider attending continuing education and/or certification training on floodplain management.

Compliance History

The Borough is currently in good standing with the NFIP; however, it is unknown as to when the most recent compliance audit was conducted.

Regulatory

The Borough's floodplain management ordinance exceeds the FEMA and State minimum requirements and there are other ordinances, plans and programs in place that support floodplain management.

Community Rating System

The Borough of Andover does not participate in the Community Rating System (CRS) program. However, the Borough has considered joining CRS and would consider attending a seminar if offered.

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

Land Use Planning: The Borough has a Planning Board/ Zoning Board which reviews all applications for development and consider natural hazard risk areas in their review.

Regulatory and Enforcement (Ordinances)

The Borough has multiple chapters pertaining to the mitigation of hazards. These ordinances include the Flood Damage Prevention Chapter, Stormwater Management Chapter, and an Environmental Impact Statement requirement included in the Site Plan Review Chapter. The Borough also has a chapter specific to the hazards associated with area that may be underlain with carbonate.

Chapter 46: Carbonate Area District <http://www.ecode360.com/8924723>

- A. Areas within Andover Borough are underlain by carbonate bedrock such as limestone and dolomite. The solution of this bedrock causes surface depressions, open drainage passages, and the development of irregular, subsurface rock topography known as "karst." These conditions make such areas unstable and susceptible to subsidence and surface collapse. As a result, the alteration of drainage patterns in these areas by the placement of impervious coverage, grade changes, or increased loads from site improvements can lead to land subsidence and sinkholes.
- B. Fractures or solution openings and fissures in the limestone rock may lead to public or private water supplies, making those sources especially susceptible to groundwater contamination. Contamination of water sources can occur from solid and liquid wastes, contaminated surface water, septic tank effluent, or other hazardous substances moving through fractures or solution openings and fissures within the rock.
- C. The Borough relies on a clean supply of subsurface water to foster and promote human health, welfare and economic and social development. Therefore, the purposes of enacting this chapter are to protect,



preserve and enhance a sensitive and valuable potable groundwater resource and to reduce the frequency of structural damage to public and private improvements by sinkhole collapse or subsidence in areas of limestone geology, thus protecting the public health, safety and welfare and insuring orderly development within the Borough.

Chapter 74: Flood Damage Prevention <http://www.ecode360.com/8925181>

The purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- A. To protect human life and health;
- B. To minimize expenditure of public money for costly flood control projects;
- C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- D. To minimize prolonged business interruptions;
- E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;
- F. To help maintain a stable tax base by providing for the alternate use and development of areas of special flood hazard so as to minimize future flood blight areas;
- G. To ensure that potential buyers are notified that property is in an area of special flood hazard; and
- H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

Chapter 150: Stormwater Control <http://www.ecode360.com/8925828>

The purposed of the Stormwater Control chapter is to implement best management practices for stormwater management designed to promote the public health, safety and general welfare the citizens.

Chapter 131-10: Environmental Impact Statement

<http://www.ecode360.com/8925614?highlight=environmentally,environmental#8925614>

The purpose of this section of the Chapter is to allow the Borough to assess the impact of a proposed development upon the natural environment, particularly with respect to potable water, pollution of all kinds, flooding and waste disposal.

Operational and Administration

The Borough has established a Land Use Board (Planning and Zoning), Environmental Commission, and an Open Space Committee, that aid in planning decisions to support the conservation and preservation of the Township's critical environmental features.

Funding

Operating Budget: The Borough's operating budget contains minimal provisions for expected repairs like snow removal and infrastructure repair after a storm or natural disaster.

Education and Outreach

The Borough's website's home page posts information regarding upcoming community events and important municipal decisions.



9.2.6 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 2011 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 may also be found under 'Capability Assessment' presented previously in this annex.



Table 9.2-9. Past Mitigation Initiative Status

Initiative Number	2011 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2016 HMP? or Discontinue)	Describe Next Step 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
Andover Borough 1	Retrofit roof to meet current standards for snow load on Andover Borough Fire Department building located on Route 206.	Station Commander	No Progress	Due to funding, this project has not been completed.	Include in 2016 HMP	The Borough will include this action in the 2015 HMP update.
Andover Borough 2	Install 300 yards of berm on Kymer Brooke to protect Andover Borough Fire Department located on Route 206.	DPW Supervisor	No Progress	Due to funding, this project has not been completed.	Include in 2016 HMP	The Borough will include this action in the 2015 HMP update.
Andover Borough 3	Install retention basin on Washer Farm.	OEM Coordinator	No progress	No longer an issue for the Borough	Discontinue	
Andover Borough 4	Stormwater runoff management to re-direct runoff from Route 206 near Whitehall Road to a retention basin.	OEM Coordinator	Complete	Borough redirected the stormwater into an area that can accept the water. Funded through a state highway grant.	Discontinue	
Andover Borough 5	Emergency generator for municipal water system facility located on Lenape Road.	OEM Coordinator	In Progress	The Borough submitted grant application for this project; awaiting award	Include in 2016 HMP	The Borough will include this action in the 2015 HMP update.
Andover Borough 6	Retrofit roof to meet current standards for snow load on municipal building located on Main Street.	Station Commander	No Progress	No funding	Include	When the roof is ready to be replaced, the Borough will incorporate the current standards
Andover Borough 7	Implement Fire Wise Program throughout the Borough.	OEM Coordinator	No Progress		Discontinue	Very low risk to wildfires; the Borough will not include this in the 2015 HMP Update
Andover Borough	Conduct all-hazards public education and	OEM Coordinator, in	In Progress	In newsletter	Include in 2016 HMP	Part of day-to-day operations



Table 9.2-9. Past Mitigation Initiative Status

<u>Initiative Number</u>	<u>2011 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status</u> (In progress, No progress, Complete)	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<u>Next Step</u> (Include in 2016 HMP? or Discontinue)	<u>Describe Next Step</u> 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
8	outreach program for hazard mitigation and preparedness.	coordination with SCDEM				



Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The Borough has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2011 HMP:

- Upgrade and/or replace culverts and basins

Proposed Hazard Mitigation Initiatives for the Plan Update

The Borough participated in a mitigation action workshop in April 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 'Selecting Appropriate Mitigation Measures for Floodprone Structures' (March 2007) and FEMA 'Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards' (January 2013). In May 2015, a second workshop was led by FEMA Region 2 and NJOEM and provided the results to the risk assessment to further assist with the identification of mitigation actions.

Table 9.2-9 summarizes the comprehensive-range of specific mitigation initiatives the Borough 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, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as 'High', 'Medium', or 'Low.' Table 9.2-10 provides a summary of the prioritization of all proposed mitigation initiatives for the HMP update.



Table 9.2-10. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
Andover Boro-1 (revised old #6)	To ensure continuity of operations, purchase and install generators within the Borough: <ul style="list-style-type: none"> • Municipal water system • Municipal building • Shelter 	Existing	All	1, 3, 6	Mayor, Water Department, OEM	High	High	HMGP with local cost share	Short Term	High	SIP	PP
Andover Boro-2 (new)	Provide information on all types of hazards, preparedness and mitigation, and responses in the Borough newsletter.	N/A	All	All	Borough	High	Low	Municipal Budget	Ongoing	High	EAP	PI
Andover Boro-3 (old #1)	Retrofit roof to meet current standards for snow load on Andover Borough Fire Department building located on Route 206.	Existing	Severe Winter Weather	1, 2	Station Commander	Medium	High	HMGP with local cost share	Short Term / DOF	Medium	SIP	PP
Andover Boro-4 (old #2)	Install 300 yards of berm on Kymer Brooke to protect Andover Borough Fire Department located on Route 206.	Existing	Flood, Severe Weather	1, 2, 3	DPW Supervisor	Medium	Medium	Municipal Budget	Short Term / DOF	Medium	SIP	PP
Andover Boro-5 (revised old #6)	When the roof is ready to be replaced on the municipal building, the Borough will incorporate the current snow load standards	Existing	Severe Winter Weather	1, 2	Borough	Medium	Medium to High	Municipal Budget	Short Term / DOF	Medium	SIP	PP

Notes:

Not all acronyms and abbreviations defined below are included in the table.

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

- 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
- HMA Hazard Mitigation Assistance Program

Timeline:

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





Costs:

Where actual project costs have been reasonably estimated:

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

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

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

Benefits:

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

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

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

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

Mitigation Category:

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

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities





Table 9.2-11. 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
Andover Boro-1 (revised old #6)	Ensure continuity of operations. Purchase and install generators within the Borough: <ul style="list-style-type: none"> Municipal water system Municipal building Shelter 	1	1	1	1	1	1	1	0	1	1	1	1	1	0	12	High
Andover Boro-2 (new)	Provide information on all types of hazards, preparedness and mitigation, and responses in the Borough newsletter.	1	1	1	1	1	1	1	0	1	1	1	1	0	0	11	High
Andover Boro-3 (old #1)	Retrofit roof to meet current standards for snow load on Andover Borough Fire Department building located on Route 206.	1	1	1	0	0	0	1	0	0	1	0	1	1	0	7	Medium
Andover Boro-4 (old #2)	Install 300 yards of berm on Kymer Brooke to protect Andover Borough Fire Department located on Route 206.	1	1	1	0	0	0	1	0	0	1	0	1	1	0	7	Medium
Andover Boro-5 (revised old #6)	When the roof is ready to be replaced on the municipal building, the Borough will incorporate the current snow load standards	1	1	1	0	0	0	1	0	0	1	0	1	1	0	7	Medium

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



9.2.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None at this time.

9.2.8 HAZARD AREA EXTENT AND LOCATION

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

9.2.9 ADDITIONAL COMMENTS

None at this time.



Figure 9.2-1. Borough of Andover Hazard Area Extent and Location Map 1

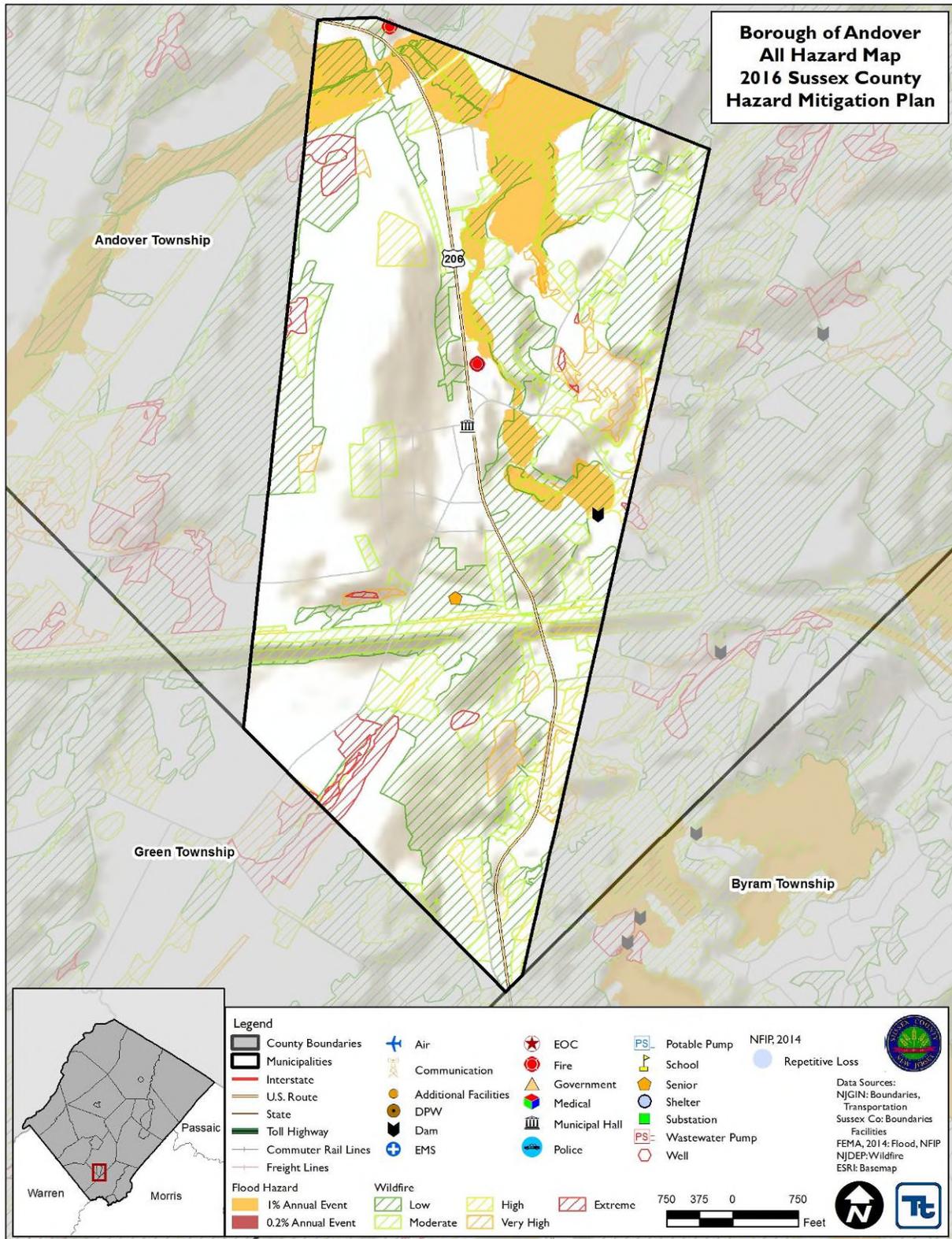
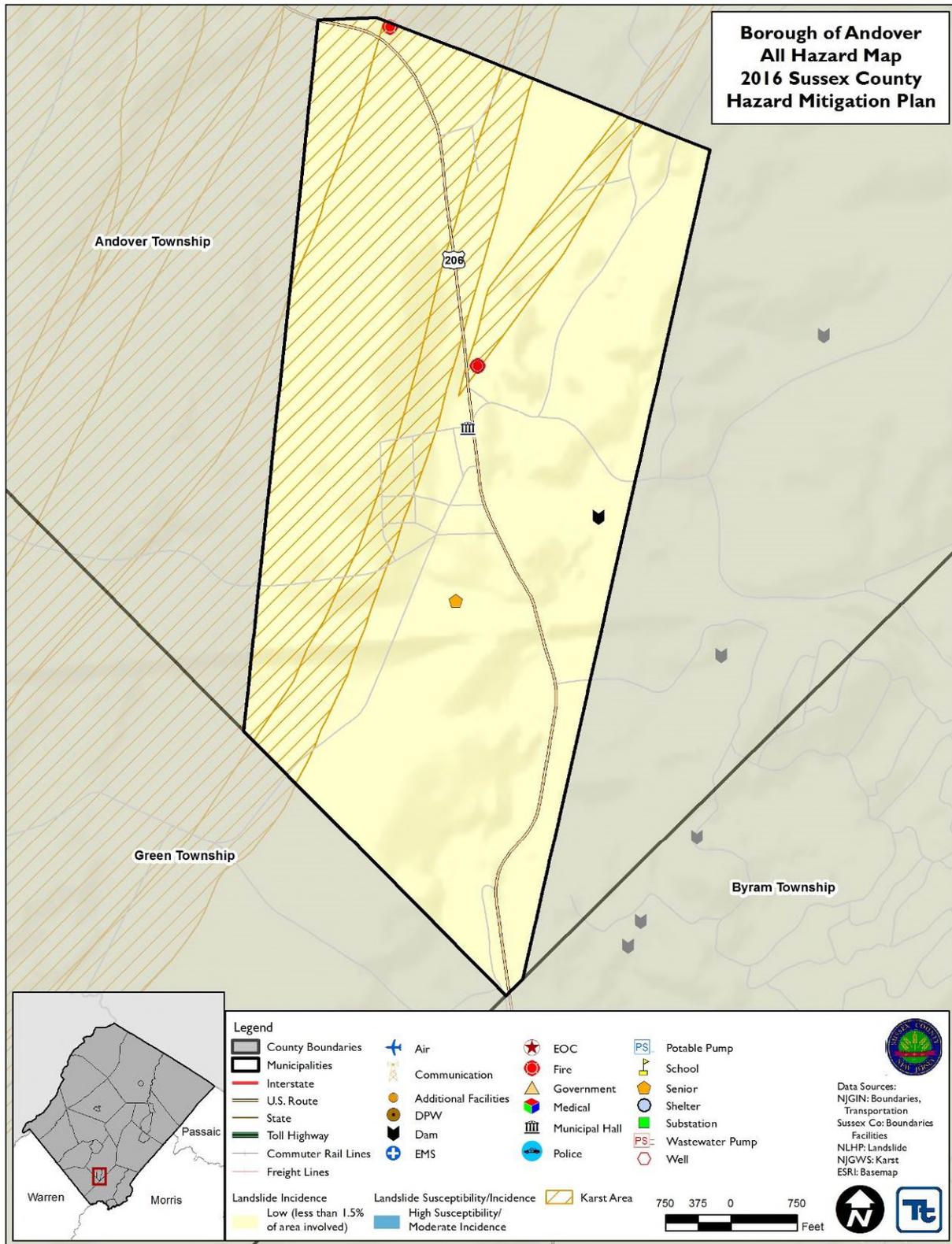




Figure 9.2-2. Borough of Andover Hazard Area Extent and Location Map 2





Action Number:

Andover Boro-1

Mitigation Action/Initiative:

Purchase and install generators at critical facilities in the Borough – municipal water system

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Lack of water for residential and businesses; lack of water for fire fighting
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Purchase and install generator for water system 2. Purchase portable generator – not feasible for longer power outages 3. Do nothing – current problem continues
Action/Project Intended for Implementation	
Description of Selected Action/Project	Purchase and install 45 kW diesel fuel generator for municipal water system
Action/Project Category	SIP
Goals/Objectives Met	1, 2, 5, 6
Applies to existing and/or new development; or not applicable	Existing
Benefits (losses avoided)	High – Borough water supply unavailable at times of power outages
Estimated Cost	Medium (\$31,000)
Priority*	High
Plan for Implementation	
Responsible/Lead Agency/Department	Mayor, Water Department, OEM
Local Planning Mechanism	Emergency Management
Potential Funding Sources	HMGP with local cost share
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number: Andover Boro-1

Mitigation Action/Initiative: Purchase and install generators at critical facilities in the Borough – municipal water system

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Potable water, fire fighting
Property Protection	1	Fire fighting
Cost-Effectiveness	1	
Technical	1	Engineer supports the project
Political	1	Public demands
Legal	1	No issue with installation at site
Fiscal	1	Need grant funding; municipal budget insufficient
Environmental	0	
Social	1	Public supports
Administrative	1	Governing body supports
Multi-Hazard	1	All
Timeline	1	Project will be completed in the next five years
Local Champion	1	
Other Community Objectives	0	
Total	12	
Priority (High/Med/Low)	High	



Action Number:

Andover Boro-1

Mitigation Action/Initiative:

Purchase and install generators at critical facilities in the Borough – community center

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Inability to operate shelter / warming center
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	<ol style="list-style-type: none"> 1. Purchase and install generator and HVAC for community center 2. Purchase portable generator – not feasible for longer power outages 3. Do nothing – current problem continues
Action/Project Intended for Implementation	
Description of Selected Action/Project	Purchase and install 30 kW diesel fuel generator at community center; upgrade HVAC to natural gas
Action/Project Category	SIP
Goals/Objectives Met	1, 2, 5, 6
Applies to existing and/or new development; or not applicable	Existing
Benefits (losses avoided)	High – currently there is a lack of a community facility to aid residents
Estimated Cost	Medium (\$23,500)
Priority*	High
Plan for Implementation	
Responsible/Lead Agency/Department	Mayor
Local Planning Mechanism	Emergency Management
Potential Funding Sources	HMGP with local cost share
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number: Andover Boro-1

Mitigation Action/Initiative: Purchase and install generators at critical facilities in the Borough – community center

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Capability to shelter residents
Property Protection	1	Maintain operation of community center
Cost-Effectiveness	1	
Technical	1	Engineer supports the project
Political	1	Public demands
Legal	1	No issue with installation at site
Fiscal	1	Need grant funding; municipal budget insufficient
Environmental	0	
Social	1	Public supports
Administrative	1	Governing body supports
Multi-Hazard	1	All
Timeline	1	Project will be completed in the next five years
Local Champion	1	
Other Community Objectives	0	
Total	12	
Priority (High/Med/Low)	High	



Action Number:

Andover Boro-1

Mitigation Action/Initiative:

Purchase and install generators at critical facilities in the Borough – municipal building

Assessing the Risk	
Hazard(s) addressed:	All
Specific problem being mitigated:	Lack of capability to continue operation of municipal offices
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Purchase and install generator at the municipal building 2. Purchase portable generator – not feasible for longer power outages 3. Do nothing – current problem continues
Action/Project Intended for Implementation	
Description of Selected Action/Project	Purchase and install 20 kW generator at municipal building
Action/Project Category	SIP
Goals/Objectives Met	1, 2, 5, 6
Applies to existing and/or new development; or not applicable	Existing
Benefits (losses avoided)	High – support the needs of the community
Estimated Cost	Medium (\$13,500)
Priority*	High
Plan for Implementation	
Responsible/Lead Agency/Department	Mayor, OEM
Local Planning Mechanism	Emergency Management
Potential Funding Sources	HMGP with local cost share
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number: Andover Boro-1

Mitigation Action/Initiative: Purchase and install generators at critical facilities in the Borough – municipal building

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Response to community needs
Property Protection	1	Response to community needs
Cost-Effectiveness	1	
Technical	1	Engineer supports the project
Political	1	Public demands
Legal	1	No issue with installation at site
Fiscal	1	Need grant funding; municipal budget insufficient
Environmental	0	
Social	1	Public supports
Administrative	1	Governing body supports
Multi-Hazard	1	All
Timeline	1	Project will be completed in the next five years
Local Champion	1	
Other Community Objectives	0	
Total	12	
Priority (High/Med/Low)	High	



Action Number: Andover Boro-3
Mitigation Action/Initiative: Retrofit fire department roof to meet current standards for snow load

Assessing the Risk	
Hazard(s) addressed:	Severe Winter Weather
Specific problem being mitigated:	The current roof of the Borough Fire Department does meet the current snow load standards
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Retrofit fire department roof to meet current standards for snow load
	2. Do nothing – current problem continues
	3. No other feasible options were identified for this project
Action/Project Intended for Implementation	
Description of Selected Action/Project	Retrofit fire department roof to meet current standards for snow load
Action/Project Category	SIP
Goals/Objectives Met	1, 2
Applies to existing and/or new development; or not applicable	Existing
Benefits (losses avoided)	Medium
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible/Lead Agency/Department	Fire Department, Borough Administration
Local Planning Mechanism	TBD
Potential Funding Sources	HMPG with local cost share
Timeline for Completion	Short Term / DOF
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number: Andover Boro-3

Mitigation Action/Initiative: Retrofit fire department roof to meet current standards for snow load

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Protect roof of fire department from damage due to large amounts of snow
Cost-Effectiveness	1	Reduce costs of repairs
Technical	0	
Political	0	
Legal	0	
Fiscal	1	Borough will seek grant funding for this project
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	0	Severe Winter Weather
Timeline	1	
Local Champion	1	
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Number: Andover Boro-4
Mitigation Action/Initiative: Install berm to protect Fire Department

Assessing the Risk	
Hazard(s) addressed:	Severe Weather, Flood
Specific problem being mitigated:	When Kymer Brook overflows its banks, the fire department is prone to flooding and subsequent damages.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Install berm on Kymer Brooke
	2. Do nothing – current problem continues
	3. No other feasible options were identified for this project
Action/Project Intended for Implementation	
Description of Selected Action/Project	Install 300 yards of berm on Kymer Brooke to protect Andover Borough Fire Department located on Route 206.
Action/Project Category	SIP, NSP
Goals/Objectives Met	1, 2, 3
Applies to existing and/or new development; or not applicable	Existing
Benefits (losses avoided)	Medium
Estimated Cost	Medium
Priority*	Medium
Plan for Implementation	
Responsible/Lead Agency/Department	DPW
Local Planning Mechanism	Emergency Management
Potential Funding Sources	Municipal Budget
Timeline for Completion	Short Term / DOF
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:



Action Number: Andover Boro-4

Mitigation Action/Initiative: Install berm to protect Fire Department

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Protect fire department from flooding
Cost-Effectiveness	1	
Technical	0	
Political	0	
Legal	0	
Fiscal	0	
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather
Timeline	1	
Local Champion	1	
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	